國 立 臺 北 科 技 大 學

103 年度
電資學院研究發展白皮書

中 華 民 國 104 年 6 月 30 日

電資學院研究發展白皮書

摘要

本學院師資陣容堅強，至 104 年 6 月，本學院目前共有專任教師 100 餘位，專任教師具有博士學位者超過 90%，均畢業於國內外一流名校，富教育熱忱，實務與理論兼備。電資領域是臺灣高科技產業的重心，本學院畢業同學之專業能力、敬業精神與團隊意識，普遍獲企業經理人之肯定，並成為業界極力爭取的對象。在 Cheers 雜誌「2011 年最佳研究所指南」中，全國各大學的電機研究所相比較，在企業用人評分部分，本學院電機系排名第 6，在全國眾多電機研究所中，特別是業界給予我們相當的肯定。

本學院鼓勵教師經由專長整合，組成研究團隊，推動整合型研究計畫之申請與執行，並統合共用研究設備以提高設備使用率，擴充實驗環境。目前已成立軟體工程、電力電子、顯示器、高速光學計算、積體電路、多媒體通訊與嵌入式系統等研究群，達到資源共享、經驗互補、深化研究等成果。在 2013 世界大學科研論文質量評比(NTU Ranking)中，電機學門世界排名第 201 名。

壹、 年度研發亮點

電資學院培育兼具理論與實務之優秀人才，本年度研發亮點如下：

1. 網路電信研究中心

   深耕 Audio 與 Video 兩大核心技術，並藉由科專計畫之協助與支持，得以將技術商品化。在 Audio 部份，搭上 4G-LTE 的普及，與相關產業公司作實質的簽約合作，成為其 VoLTE 系統軟體技術供應商；Video 部份，搭上 H.264 晶片之成熟與 4G-LTE 行動寬頻之普及，已和超過 20 家廠商接觸，進行產學合作。

2. 群光-北科研發中心

   發展尖端能源科技技術、工業自動化與高效能視覺辨識技術、深耕及推廣仿真模擬技術、發展軟體暨內容產業技術等；此外，群光公司亦提供研發新秀獎學金且每年提供研發經費與派駐工程師，與台北科大師生一起執行計畫。

3. 成立多天線系統技術研發中心

   為了與產業做更深的聯結，初期將建置於校園內之 MIMO-OTA 量測實驗室，並積極推動實驗室通過 TAF 與 CTIA 認證，除提供專業測試服務以外，亦可藉由產學合作案，開發量測技術與測試資料快速收集與整合技術，以降低台灣產業界之產品測試與驗證成本，因而可提供客戶更高性價比的服務。此外，可整合學校資源提供對外服務之營運管理模式，將學術界的動能導入產業界，期望日後能服務更多的廠商，達到自給自足的目標。

4. 技轉動心醫電股份有限公司

   以無線感測網路(WSN)、Zigbee(802.15.4)、網路科技、微機電系統設計為基礎，結合生活型態為客戶提供具有智慧無線感測功能的產品及解決方案。本技轉案結合包括感測技術、無線網路科技、雲端服務、微機電系統設計、晶片設計、發展平台、監控軟體、紡織材料及生活創意等「跨領域」人才組成的專業團隊，為下一代生醫電子之穿戴式產品提供整體技術之解決方案。

5. 搭配多元智慧載具並結合影像與聲音技術之聯網電視人性化互動介面

   智慧聯網電視為廣播電視和網際網路無縫融合的新興多媒體通訊服務。本系楊士萱老師帶領團隊研發一種依使用者需求之智慧聯網電視人機互動介面，將融合語音、手勢或體感、視線等多元自然人性化輸入技術，且考量行動智慧終端、穿戴式裝置、與智慧聯網電視之互動，運用資料探勘技術結合網路社群，以提

供使用者具內容互動、個人化服務、且具良好使用者體驗品質之智慧聯網電視。

6. Android 雲端測試服務

近年來隨著 Android App 數量快速大幅的躍升，其品質日益受到廣泛的重視，為確保 Android App 在不同廠牌、作業系統版本、螢幕大小的裝置上均能順利運作，需要在各種 Android 裝置上對 App 進行測試，得花費相當多的時間與成本。本系陳偉凱老師帶領團隊研發架構於雲端的「測試即服務」技術，可對 App 在多台裝置上同時執行自動化測試，能大幅縮短測試時間和成本，並能提升 App 品質。

7. 智慧穿戴式裝置之人機互動技術暨平台研發

近年來智慧行動終端裝置大幅普及並已融入生活周遭，為提升各種穿戴裝置操控便利性、使用者經驗，及其附加價值與產業競爭力，由本系陳彥霖老師帶領團隊開發一系列應用於穿戴式智慧終端裝置的低運算量及低功耗視覺人機互動介面技術，以提供含智慧行動裝置、聯網電視、智慧機器人等不同載具平台便利的多元視覺互動操控與節能機制，並可整合各種影像及感測元件、與聯網周邊界面，發展出新一代資通訊創新應用之人性化互動介面。

8. 研製奈米光學膜及應用新穎偏極光電元件之開發

計畫利用奈米結構製鍍系統，研發多樣化奈米結構之製鍍機制，以斜向角度沉積法製鍍非均向金屬/介電質光學薄膜調製相位變化，根據遠場及近場量測，建立光學薄膜之等效光學模型，搭配非均向吸收薄膜的干涉儀量測技術，量測及分析非均向金屬/介電質光學薄膜光學特性，以理論分析探討奈米結構展現之相位變化對於偏極態的影響與成因。

9. 建構整合式寬頻接取網路

規劃並建構結合光纖固網、5G 行動通訊及高速可見光通訊之整合式寬頻接取網路;在整合式寬頻接取網路上傳送高頻毫米波、中頻微波及數位基頻等信號，充分發揮其「整合」及「寬頻」之優勢。

貳、 電資學院簡介

本學院於 95 年 8 月正式成立，但學院中電機、電子等系科，已有長久的歷史，許多校友在產業界頭角崢嶸舉足輕重，源自民國元年日本臺灣總督府設立學務部附屬工業講習所，學校首創之初電工科即為首設立三科之一。目前學院設有電機工程、電子工程、資訊工程及光電工程等四個研究所，均設有博士班與碩士班；大學部設有電機工程、電子工程、資訊工程及光電工程等四個學系；此外，電資學院直屬的教學班級有電資（不分系）學士班及電資外國學生專班。

本校在產學方面卓有特色，近年來並全力推展國際化。為配合本校實務研究型大學之發展目標，本學院積極獎勵產學合作，強化與產業界之合作關係。具體實施項目包括：以實務研發成果展現本校特色，實務專題課程與企業合作、最後一哩就業學程計畫、產業研發碩士專班、企業人才培訓、顧問諮詢與企業診斷、業界委託研發專案、以及國科會產學合作計畫等。本學院並配合本校區域產學合作中心之各項計畫與行政支援，媒合與產業界間之合作，以擴大研發量能及研發成果。

自 94 年度起陸續開設產業碩士專班，一方面透過與業界合作的方式一起培育人才，另一方面指導產業碩士專班研究生，可結合學校資源與業界資源，研究開發新的技術，學生的論文題目可以更切合產業的要求，透過這樣的模式可增加學校與產業的互動，並增加教師的產業視野。

在加強國際交流方面，本學院 96 學年成立甘比亞電資專班(Gambian Information Technology Elite Program)，於 98 學年成立研究所全英語國際學程(International Graduate Degree Program in EECS)，並積極聘請國際講座教授蒞院講學與規劃國際雙聯學制。

參、 電機工程系

3.1 系所簡介

歷史傳承與現況

本校創立於民國元年，為臺灣開辦最早、歷史最悠久之工業學府之一。民國 37 年升格為臺灣省立臺北工業專科學校，並設立五年制電機工程科。其後陸續成立三年制及二年制之電力組與冷凍組專科學程。本系於民國 83 年 8 月升格為國立臺北技術學院電機工程技術系。86 年改名國立臺北科技大學電機工程系。87 年設立碩士班，92 年成立博士班。

在 104 學年度，電機系包括日間部 12 班，進修部二技在職 2 班；研究所方面有日間部碩士班、博士班、及碩士在職專班，全系總人數約為 1000 人。

系所特色與師資

電機工程系主要分為電力與能源、電力電子、控制、及資通四大專業領域，各領域與目前尖端的科技產業皆環環相扣。且本系的實做技術訓練及紮實的理論基礎，在全國性的各種競賽中常領先群倫，獲得佳績。本系大學部之教育目標包括:(1) 教授電機工程專業知識與技能。(2) 培育電機工程設計與實作能力。(3) 涵養職業道德與敬業精神。(4) 培養跨領域團隊合作能力。(5) 加強國際觀與英語能力。本系研究所之教育目標為:(1) 教授電機工程先進科技知識與技能。

(2) 培育電機工程獨立思考與創新研發能力。(3) 涵養職業道德與敬業精神。(4) 培養跨領域團隊合作能力。(5) 加強國際觀與英語能力。104 學年度，本系計有 36 名專任師資。含教授 16 人，副教授 15 人，助理教授 2 人，講師 3 人。其中有一位 IEEE 院士及二位 IET 院士。

課程規劃與校外實習

電機工程系大學部最低畢業學分為 134 學分，含共同必修 34 學分，專業必修 54 學分及專業選修 46 學分。碩士班最低畢業學分為 34 學分。博士班最低畢業學分為 37 學分。本系設立課程委員會，由產業界、學術界、本系專任教師與學生代表組成，委員會定期召開會議，依據系所教育目標，配合工業界最新發展趨勢，規劃配套的課程，以訓練學生達到預期的核心能力。本系的課程規劃採取實務與理論並重的原則，四大專業領域內各有其必修的理論及實驗課程，以培養學生跨領域能力及團隊合作的習慣。

學生實務專題的訓練及學長的經驗傳承，使學生之能力已經深入至研究所階段。校外實習為必修科目，使學生提早瞭解未來就業環境，實習地點有中華航空、士林電機、亞力電子、璞園建設、中鼎工程、中興電工等知名業者。

教學空間及設備

電機工程系位處於本校綜合科館 2 至 6 樓，使用面積約為五千平方公尺。包含 7 間教學實驗室、31 間專業研究室、及 4 間辦公會議室等。近年來，教學實驗室獲得教育部、產業界、傑出系友補助或捐贈許多新穎設備，設備規劃及使用效率獲得各級評鑑高度肯定。實驗課程有 11 門課為一人一機課程，6 門課為兩人一機課程，是本系訓練實做技術能力的最佳保證。

系友表現及回饋

本系畢業系友在工業、科技及學術界等各行各業的表現均十分傑出，充分顯露了北科大校訓誠、樸、精、勤的精神，獲得企業界的高度讚賞與肯定。系友感念母校的栽培，於民國 90 年成立系友會。經過葉進泰董事長、白慶仁董事長及現任黃慶林理事長的領導及全體系友之奉獻，給與獎學金、清寒急難救助、學術演講、系上建設、教師研究等方面補助，成為本系重要的支柱，對於本系的進步有不可磨滅的貢獻。

獎學金與交換學生

多項獎學金被提供以作為優秀學生之獎勵，家境清寒學生更有陽光、大聯大、系友會、大安等多項獎學金來幫助其生活需要以完成學業。這些獎學金大多數都是由事業有成的本校系友、校友提供，電機系網頁會公告各項獎學金申請訊息。本校國際處提供交換學生等出國的資訊，其中大阪工業大學每年提供本系暑期交換學生機會。

重點研究領域

本系四大專業領域的發展重點為

1. 電力與能源

   電力系統穩定度、電力事故分析、保護協調、電力自由化、電力品質、負載管理、新能源科技、接地系統、奈米科技、電力智慧型控制、智慧型電機控制驅動系統、智慧型網路控制應用、馬達故障偵測、無線感測器網路應用、電力數位訊號處理、軌道機電系統等。

2. 電力電子

   電子電路設計、電力電子 IC 設計、PC 電源技術、通訊電源技術、變頻器及相關應

用技術、電磁干擾防制、DSP 晶片應用技術、燃料電池及其應用、馬達控制與設計、機電整合等。

3. 控制工程

智慧型控制、智慧型運輸系統、節能控制、3C 整合控制技術、馬達與運動控制、DSP 晶片控制技術、視覺伺服控制、機器人控制與應用、視覺檢測與監控、尖端控制理論與應用等。

4. 資通工程

行動無線通訊系統、光纖通訊、展頻通訊、編碼及消息理論、影像與視訊處理、語音處理、音訊處理、適應訊號處理、多媒體通訊、高速光纖網路、行動無線網路視訊網路、網際網路、IP-Based 網路等、多媒體與網路結合、資訊檢索、智慧型代理人、網路可靠度分析、遙測監控系統、圖形辨識、電子設計自動化、IC 設計、嵌入式系統等。

成果與展望

電機工程系精心規劃的課程設計，在「嚴管勤教」的教育理念下，訓練出理論基礎與實作能力俱佳的學生，在「國際工程教育認證」(IEET)的評鑑中獲得很高的評價。在 2008 年天下雜誌畢業生受企業界認同的調查中，居電機所全國排名五−六名之間。助理教授以上的研究實績也是逐年提升，據 2008 年天下 Cheers 雜誌調查結果，本系總排名及學術排名已進入全國前十名；自民國 87 年設立研究所以來，短短的十年內教研成果令人刮目相看。在師生的齊心努力之下，未來的展望將是輝煌耀眼而不可限量。

3.2 研發與產學合作計畫

科技部、政府部門計畫

本系長期以來對於學術研究資源的投入極為重視，亦累積豐富的研究成果。民國 99 年至 103 年度執行各類研究計畫金額統計如表 1 所示，專利及技術轉移金如表 2 所示。

表 1　電機系 99-103 年度各類各類研究計畫金額統計表

年度	99 年	100 年	101 年	102 年	103 年
	金額(千元)	金額(千元)	金額(千元)	金額(千元)	金額(千元)
科技部	17,737	28,681	25,501	35,463	31,492
政府	13,872	15,115	121,858	49,734	45,910
其他產學	14,772	22,047	17,392	17,446	19,692
合計	46,381	65,843	164,751	102,643	97,094

資料來源：本校教師評鑑及基本資料庫系統

表 2　專利及技術轉移金

年度	99 年	100 年	101 年	102 年	103 年
獲得專利數	27	34	29	30	41
技術轉移金(仟元)	210	2,111	7,545	4,695	5,302

資料來源：本校教師評鑑及基本資料庫系統

3.3 論文與作品發表

電機系對於教師之學術研究相當重視，民國 99 年度至 103 年度，本系教師發表於各類學術論文篇數統計如表 3 所示。

表 3　電機系國內外學術論文篇數統計表

年度	99 年	100 年	101 年	102 年	103 年
SCI, SSCI	37	62	44	37	61
EI	4	2	8	10	6
其他期刊	19	11	13	20	5
研討會論文	142	158	150	105	135
總計	202	233	215	172	207

資料來源：本校教師評鑑及基本資料庫系統

3.4 獎項與榮譽

研究發展獎勵

表 4　電機系 99-103 年度校內研究發展獎勵

獎勵項目	99 年	100 年	101 年	102 年	103 年
講座教授設置辦法	1 人	-	-	1 人	1 人
特聘教授設置辦法	2 人	2 人	2 人	2 人	1 人
傑出研究獎設置辦法	1 人	1 人	2 人	3 人	2 人
科技部特殊優秀研究人才	5 人	6 人	5 人	5 人	4 人

資料來源：研發處「榮譽榜」網頁公告

產學合作獎勵

表 5　電機系 99-103 年度校內產學合作獎勵

獎勵項目	99 年	100 年	101 年	102 年	103 年
國立臺北科技大學傑出產學合作獎設置辦法	6 人	3 人	8 人	4 人	9 人
陽光獎助金 -專利及技術移轉獎勵辦法	2 人	2 人	2 人	3 人	6 人

資料來源：研發處「榮譽榜」網頁公告

師生獲獎紀錄

--資料來源：本系教師評鑑及基本資料庫系統

表 6　99-103(學) 台北科技大學電機系教師獲獎統計表

教師	獲獎名稱	頒獎機構	獲獎日期
古碧源	國立台北科技大學電資學院教師服務優良獎	國立台北科技大學電資學院	2011/5/13
古碧源	IEEE Senior Member	IEEE	2011/6/27
宋國明	101 學年度第一學期前 8 週教室整潔評比全校第三名。	國立台北科技大學	2013/1/19
宋國明	101 學年度第一學期全學期教室整潔評比全校第五名。	國立台北科技大學	2013/1/30
宋國明	101 學年度第 2 學期全學期教整潔評比全校第三名	國立台北科技大學	2013/6/21
李俊賢	2010 IEEE IES (Industrial Electronics Society) Early Career Award	IEEE Industrial Electronics Society	2010/11/9
李俊賢	IEEE Senior Member	IEEE	2011/4/30
李俊賢	指導學生參加教育部舉辦之「2011 人工智慧單晶片電腦鼠暨機器人國內及國際邀請賽」，榮獲第三名。	教育部	2011/9/25
李俊賢	指導學生參加「2010-2011 富士通半導體盃 MCU 競賽」，榮獲優勝獎。	中國電子學會富士通半導體亞太區	2012/3/1
李俊賢	參加「2012 新銳展翅微電腦應用大賽」，榮獲微電腦創意設計大專院校組第二名。	北區技專校院教學資源中心	2012/4/7
李俊賢	2012 全國智慧型機器人科技創意競賽，榮獲智能生活機器人應用發明賽第二名。	萬能科技大學	2012/9/1
李俊賢	2013 全國資訊教育與科技應用專題競賽「行動應用類」第一名	資研會	2013/3/29
李俊賢	2013 全國資訊教育與科技應用專題競賽「系統整合與創意應用類」佳作	資研會	2013/3/29
李俊賢	論文榮獲 IEEE Sensors Journal's Top 25 Accessed Articles。	IEEE Sensors Council	2013/10/31
李俊賢	指導專題生:利用 ZigBee 無線定位與座標演算之移動式探索機器人獲 2014 全國資訊教育與科技應用專題競賽佳作	資研會	2014/5/6
李俊賢	指導專題生黃意中、葉笙傑:利用 PID 控制之趣味遠端遙控平衡不倒翁獲 2014 全國資訊教育與科技應用專題競賽佳作	資研會	2014/5/6

教師	獲獎名稱	頒獎機構	獲獎日期
李俊賢	指導專題生參加 2014 亞洲智慧型機器人大賽，獲大專院校組實務專題競賽佳作	台灣人形機器人學會	2014/5/17
李俊賢	指導碩士生曾宣翰同學，參加「2014 全國智慧型機器人科技創意競賽」，榮獲智慧居家 APP 創意競賽第一名。	教育部卓越計畫: 萬能科技大學	2014/9/28
李祖添	99 年度優秀教育人員及公務人員	教育部	2010/8/9
周至如	以"含自備電源系統及諧波負載之大型科技廠低壓配電系統接地故障特性"獲優秀論文獎	中華民國第三十一屆電力工程研討會大會	2010/12/3
周至如	研發計畫成效卓著獲台灣世曦工程顧問股份有限公司特頒感謝狀	台灣世曦工程顧問股份有限公司	2014/4/10
陳昭榮	IEEE Senior Member	IEEE	2012/03
姚立德	模糊學會監事	模糊學會	2010/1/1
姚立德	99 年度傑出工程教授獎	中國工程師學會	2010/6/4
姚立德	「教育部 100 年度微電腦應用系統設計製作競賽」研究所組獲得嵌入式系統類研究所組第二名(題目：行動通訊機房空調節能系統)	教育部	2011/12/10
胡國英	第四屆聯德盃電源供應器競賽：觀摩組優勝獎	聯德電子	2010/2/5
胡國英	98 年度電資學院金手獎競賽：佳作獎	台北科技大學 電資學院	2010/6/15
胡國英	98 年度電資學院研究躍升獎	台北科技大學 電資學院	2010/6/15
胡國英	98 年度電資學院傑出研究獎	台北科技大學 電資學院	2010/6/15
胡國英	99 年度陽光獎助金-教職員及學生論文獎	台北科技大學 研發處	2010/12/28
胡國英	99 年度陽光獎助金-競賽成績優良獎	台北科技大學 電機系	2010/12/28
胡國英	第五屆聯德盃電源供應器競賽：觀摩組佳作獎(1)	聯德電子	2011/2/28
胡國英	第五屆聯德盃電源供應器競賽：觀摩組佳作獎(2)	聯德電子	2011/2/28
胡國英	第五屆聯德盃電源供應器競賽：觀摩組佳作獎(3)	聯德電子	2011/2/28
胡國英	100 年度電資學院傑出研究獎	台北科技大學 電資學院	2011/5/24
胡國英	發明國光獎章	台灣國際發明得獎協會	2011/11/28

教師	獲獎名稱	頒獎機構	獲獎日期
胡國英	The Science Award of Excellence 2011	American Biographical Institute	2011/12/30
胡國英	第六屆聯德盃電源供應器競賽：觀摩組優勝(涂偉程)	聯德電子	2012/4/13
胡國英	101 年度電資學院傑出研究獎	臺北科技大學 電資學院	2012/5/10
胡國英	101 年度國科會大專學生研究計畫：具改善效率及自動調光之 LED 驅動器	國科會	2012/5/25
胡國英	101 年度國科會補助大專院校獎勵特殊優秀人才	國科會	2012/8/1
胡國英	電力應用實作論文觀摩競賽：佳作 (房玉堂)	國科會工程處	2012/10/27
胡國英	學院傑出研究獎	臺北科技大學 電資學院	2013/5/21
胡國英	102 年度校傑出研究獎	臺北科技大學	2013/10/26
胡國英	指導賴忠佑及何宇平同學獲中華民國第 34 屆電力工程研討會優秀論文獎	電力工程研討會	2013/12/6
胡國英	年度陽光獎助金-學生論文獎 (姚宇桐)	臺北科技大學	2013/12/17
胡國英	102 年度陽光獎助金-學生論文獎	臺北科技大學	2013/12/17
胡國英	張孫堆先生鼓勵教師實務研究優良成果	國立臺北科技大學	2014/2/14
胡國英	第 13 屆台灣電力電子研討會優秀論文獎(江文莊,楊里慶)	台灣電力電子研討會	2014/9/4
張文中	「100 年度全國技專校院學生實務專題製作競賽暨成果展」，參賽作品「吸窗達人」，電機群「第一名」	教育部	2011/5/28
張文中	2014 年台北國際發明暨技術交易展－發明競賽，榮獲生技醫藥類組第 1 名並獲頒亞洲發明界最高榮譽 INST 鉑金獎	2014 年台北國際發明暨技術交易展	2014/9/20
張文中	103 學年第 1 學期張孫堆先生獎助金	國立臺北科技大學電資學院	2014/12/11
張陽郎	IEEE GRS-S Taipei Chapter Best Thesis Award for 2009	GRS-S, IEEE	2010/1/31
張陽郎	海峽兩岸遙測遙感研討會 2010 年最佳論文獎	海峽兩岸遙測遙感研討會	2010/3/19
張陽郎	2010 IEEE GRS-S Taipei Chapter Best Thesis Award	IEEE Geoscience and Remote Sensing Society	2011/1/31

教師	獲獎名稱	頒獎機構	獲獎日期
張陽郎	100 年度教育部全國技專校院學生實務專題製作競賽電機工程組佳作獎。	教育部	2011/6/30
張陽郎	IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (SCI/EI) 期刊, 2010 年度最佳論文審稿獎 (The Best Reviewers Award of 2010)	IEEE Journal of Selected Topics in Applied Earth O	2011/7/1
張陽郎	100 年度電資學院傑出研究獎	國立臺北科技大學	2012/4/1
張陽郎	100 年度電資學院研究躍升獎	國立臺北科技大學	2012/5/1
張陽郎	2011 IEEE GRS-S Taipei Chapter Best Thesis Award	IEEE Geoscience and Remote Sensing Society	2012/6/1
張陽郎	2012 IEEE GRS-S Taipei Chapter Best Thesis Award - GPU-Acceleration of Nearest Feature Space Classifier for Hyperspectral Images	IEEE Geoscience & Remote Sensing Society	2013/6/1
張陽郎	2012 IEEE GRS-S Taipei Chapter Best Thesis Award - Simulation of Tsunami Propagation in Taiwan Coastal Area Based on GPU-acceleration	IEEE Geoscience & Remote Sensing Society	2013/6/1
張陽郎	013/2014 IEEE GRS-S Taipei Chapter Best Thesis Award	IEEE GRS-S 台北分會	2014/6/1
郭天穎	98 及 99 年國科會工程處應用型產學合作計畫成果發表(電資通訊組)	國科會	2011/12/1
郭天穎	第 6 屆電資學院金手獎實務專題競賽第三名(具圖片流覽功能之環繞場景拼接軟體開發)	北科電資學院	2012/5/22
郭天穎	2012 年最佳碩士論文佳作指導獎	中華民國資訊學會	2012/11/14
郭天穎	第７屆實務專題競賽金手獎佳作(Webcam 影像立體化)	台北科大電資學院	2013/5/21
陳文學	101 年度臺北市志願服務貢獻獎(府社工字第 10143404200 號)	臺北市政府	2012/9/28
陳文學	電資學院 101 年度傑出教學獎	國立台北科技大學電資學院	2013/6/17
陳文學	101 學年度傑出教學獎	國立臺北科技大學	2013/6/21
陳文學	第 13 屆台灣電力電子研討會優秀論文獎-多輸入源之一體式降壓型多輸入轉換器	中華民國電力電子協會	2014/9/4
曾國雄	國立臺北科技大學電資學院 100 學年度研究躍升獎	國立臺北科技大學電資學院	2012/5/22
曾國雄	中華民國第三十三屆電力工程研討會優秀論文獎	電力工程研討會	2012/12/7

教師	獲獎名稱	頒獎機構	獲獎日期
黃正民	2012 ICSSE 研討會 Best Paper Award	Dalian University of Technology / IEEE SMC Society	2012/6/30
黃正民	國科會控制學門 100 年度成果發表會 個別型計畫最佳海報獎	國科會控制學門	2012/12/1
黃正民	學生論文競賽第一名 - 林書緯	National Symposium on System Science and Engineeri	2013/6/8
黃正民	International Scholarship	SICE Annual Conference 2013	2013/9/14
黃正民	自動控制學會碩士論文佳作獎 - 林廷維	中華民國自動控制學會	2013/12/2
黃正民	智慧運輸論文獎	智慧型運輸系統協會	2013/12/24
黃有評	中華電信應用大賽 2010 中華電信電信奧斯卡 花博應用組佳作	中華電信	2010/11/4
黃有評	全國機器人程式設計競賽 未來智慧生活空間創意組 第一名	德霖技術學院	2010/11/28
黃有評	2010 RFID 設計與應用競賽 應用組 第一名	教育部 RFID 科技及應用人才培育先導型計畫	2010/12/4
黃有評	黃有評教授應薩爾瓦多教育部邀請，組團赴該國參加「台薩兩國教育機器人青少年學生交流活動營」，表現優異，外交部來函建請本校惠予從優敘獎	外交部	2011/3/16
黃有評	黃有評教授與碩士班張顯鐘、林建均同學合著之	IEEE	2011/6/8
黃有評	指導學生林建均同學之碩士論文，榮獲中華民國模糊學會 100 年度電機類之碩士論文佳作獎	中華民國模糊協會	2011/11/18
黃有評	黃有評教授與研究生陳鴻進及柯紜凱同學合著「灰關聯分析在環境水質監測綜合評估與分析之應用」論文，榮獲第十六屆灰色系統理論與應用研討會最佳論文獎。	中華民國灰色系統學會	2011/12/10
黃有評	指導碩士班黃昭穎、陳首儒、陳冠勳同學，參加中華電信主辦之「2011 電信創新應用大賽-創作擂台」，榮獲「雲端應用創新應用獎」優選。	中華電信	2011/12/21
黃有評	中華民國模糊學會 101 年度碩士論文特優獎	中華民國模糊學會	2012/11/16

教師	獲獎名稱	頒獎機構	獲獎日期
黃有評	Best Student Paper Award	in 2013 IEEE ICME Int. Conf. on Complex Medical En	2013/5/26
黃有評	大同大學傑出校友	大同大學	2013/10/26
黃有評	指導學生論文榮獲 2014 IEEE ICME Int. Conf. on Complex Medical Engineering 最佳學生論文獎	IEEE ICME Int. Conf. on Complex Medical Engineerin	2014/6/26
黃明熙	指導學生以「Novel Bi-directional AC-DC Converter with Fast Dynamic Response for EV/HEV Battery Testing」論文，榮獲第三十二屆電力工程研討會優秀。	電力工程研討會	2011/12/2
黃明熙	"能源效 CC" 2011 年 能源科技創意實作競賽 大專組佳作	教育部	2011/12/26
黃明熙	2012 德州儀器亞洲區 DSP 暨 MCU 應用競賽台灣區 DSP 系統應用組第一名	德州儀器工業(股)公司	2012/5/19
黃明熙	中華民國第三十三屆電力工程研討會優秀論文獎	電力工程研討會	2012/12/7
黃紹華	指導學生楊凱博、葉明哲、朱召平、徐丞邵與林世嵩同學，以「行動監視眼」作品，榮獲 100 年輕經濟部技術處樂活百年搶鮮大賽「系統整合實作類」亞軍。	經濟部	2012/1/17
黃紹華	指導學生古甯允、簡伯雄、劉家偉、鄭恭博、林佳緯同學，以「Android 網路視訊電話」作品，榮獲季軍。	經濟部	2012/1/17
劉邦榮	新進人員研究成果評選優選	科技部電力學門	2014/11/1
練光祐	第十屆旺宏金矽獎半導體設計與應用大賽『應用組』優勝獎	旺宏教育基金會	2010/8/10
練光祐	以「生物複雜網路系統之同步化研究」計畫，榮獲國科會工程處控制學門 99 年度成果發表會最佳海報獎。	國科會工程處	2011/11/26
練光祐	中華民國自動控制協會 101 年度傑出自動控制工程獎	中華民國自動控制學會	2012/12/1
練光祐	101 年度全國微電腦應用系統設計製作競賽大專組第二名	教育部	2012/12/1
練光祐	101 年度全國微電腦應用系統設計製作競賽研究所組佳作	教育部	2012/12/1
練光祐	2012 年國際自動控制研討會最佳論文獎	中國民國自動控制學會	2012/12/1

教師	獲獎名稱	頒獎機構	獲獎日期
練光祐	101 年度中華民國自動控制學會碩士論文獎	中華民國自動控制學會	2012/12/1
練光祐	2012 全國 LED 創意設計競賽-應用產品設計組人氣特別獎	中山大學	2013/2/25
練光祐	2012 全國 LED 創意設計競賽-應用產品設計組佳作	中山大學	2013/2/25
練光祐	以論文 Mobile Device Monitoring Systems in the Plant by an Innovative Approach, 榮獲 ICAMAR2013 最佳論文獎	ICAMAR2013	2013/7/14
練光祐	指導研究生以「Arm Strong」榮獲『2013iNEMO 校園設計競賽』佳作	意法半導體	2014/1/3
練光祐	指導蕭碗馨同學，以「Real-time Emotion Recognition and Environmental Regulation Implemented by Embedded Systems」論文，榮獲「2014 中華民國系統科學與工程研討會學生論文競賽」第一名。	中華民國系統學會	2014/6/21
練光祐	獲頒 2014 旺宏金矽獎「最佳指導教授獎」(獎金 NT100,000 元及獎座乙座)	旺宏電子及旺宏教育基金會	2014/7/11
練光祐	指導研究生蕭碗馨、劉儒峰、陳建中以「情緒醫生 – 平衡自律神經之環境調控系統」榮獲 2014 旺宏金矽獎應用組 評審團金獎(獎金 NT300,000 元及每人獎座乙座，為此次競賽最大獎)	旺宏電子及旺宏教育基金會	2014/7/11
練光祐	指導邱柏鈞、謝佳均、楊宗峻三人團隊，以熱力無「線」作品，獲得 2014 全國儲能應用專題創意競賽 佳作。	中央大學機械系	2014/7/25
賴炎生	Best Paper Award	Taiwan Power Electronics Association	2010/9/3
賴炎生	指導學生，以「New Hybrid Pulse-Width Modulation Technque to Peduce Current Distortion and Extend Current Reconstruction Range for Three-Phase Inverter using only DC-link Sensor」論文，榮獲第三十二屆電力工程研討會優秀論文獎。	電力工程研討會	2011/12/2
賴炎生	2012 年再生能源研究及國際研討會最佳論文獎	再生能源研究及國際研討會	2012/11/13
賴炎生	Best Paper Award	IEEE PEDS	2013/4/25
賴炎生	傑出研究獎	國科會	2013/5/3

教師	獲獎名稱	頒獎機構	獲獎日期
賴炎生	指導學生榮獲中華民國第 34 屆電力工程研討會優秀論文獎	中華民國電力工程研討會	2013/12/6
賴炎生	IEEE Fellow for contributions to power converters and motor drives controlled by pulse width modulation	IEEE	2014/1/1
賴炎生	指導學生榮獲中華民國電力電子研討會優秀論文獎	中華民國電力電子協會	2014/9/6
譚旦旭	指導學生以"具備主動推薦功能之智慧型 e 化餐飲服務系統之研究"論文,榮獲中華民國民生電子學會 99 年度博士論文獎	中華民國民生電子學會	2010/11/5
譚旦旭	Best Paper and Best Paper Presentation Awards	International Conference on Knowledge Based Indust	2011/7/6
譚旦旭	指導學生以「整合即時路況資訊之緊急救護系統實作」論文，榮獲 2011 年民生電子研討會最佳論文獎。	民生電子研討會	2011/11/11

3.5 其他成果展示

舉辦學術研討會

電機系近年來舉辦國內、國際大型學術研討會，對於學術交流與研究成果的提升，具有不錯的績效。表 7 為近年舉辦研討統計。

表 7　電機系辦理學術研討會統計

年度	日期	主辦研討會名稱
101	12/07~08	中華民國第三十三屆電力工程研討會
103	06/26~29	ICME CME 2014
103	09/04	2014第十三屆台灣電力電子研討會暨展覽會

肆、 電子工程系

4.1 系所簡介

民國元年，日本臺灣總督府設立學務部附屬工業講習所，電工為首先設立的三科之一。民國 34 年光復後，本校更名為「臺灣省立臺北工業職業學校」，電機持續為當時五個科系之一。民國 38 年增設三年制電機科電力及電訊兩組，電訊組後併入電子科。民國 49 年成立五年制電子工程科。民國 86 年增設電腦通訊與控制研究所。電子工業在我國經濟發展上具有舉足輕重之地位，產業界對中高階層技術人才的質與量之需求均極為殷切。電子工程系目前隸屬「電資學院」，教學目標乃配合工業經濟發展與產業界的需求，積極為國內產業界培育高等電子專業技術人才，發展的重點以計算機工程(含軟體、硬體、韌體、多媒體、人機介面、單晶片微處理)、 通訊與信號處理(含無線通訊、無線傳播、行動通訊、信號處理、網路應用)、電波工程(含數值電磁、高頻電路、微波傳播、光電系統、光通訊)及積體電路與系統(含類比/射頻/數位晶片設計、電腦輔助設計自動化、系統雛型與軟硬體共同設計、嵌入式系統)等四大領域，並強調計算機、通訊、電波、積體電路與系統設計等技術之整合與應用。

目前，電子系師資計有專任教授 14 位、副教授 13 位、助理教授 4 位、講師 1 位合計共 32 位。學生計有博士生 80 人、碩士生(含在職生)300 人、大學部四技生八班、進修部四技生兩班、產攜專班 1 班、二技生兩班及進修學院二技生 1 班。在有限的資源與空間之下，為發揮最有效的使用功能，目前教學實驗室計有電子電路實驗室、通訊系統實驗室、高頻電路實驗室、FPGA 系統設計實驗室與電腦軟體實驗室，而研究實驗室計有超大型積體電路設計實驗室、嵌入式系統實驗室、積體電路分析與模擬實驗室、類比積體電路設計實驗室、功率積體電路設計實驗室、射頻積體電路設計實驗室、系統整合實驗室、計算機應用實驗室、網路應用實驗室、電腦視覺實驗室、數值電磁實驗室、數位信號處理實驗室、行動通訊實驗室、光電實驗室、無線通訊實驗室等相關實驗室與綜合專題實驗室。

教學方面為因應科技整合潮流，顧及電子工業發展走向及產業界實際就業市場之需求，即時增修訂系所之必選修課程結構與教材，結合計算機工程、電腦輔助系統設計、積體電路設計與佈局、無線通訊、信號處理、電波傳播及光電工程等領域，對學

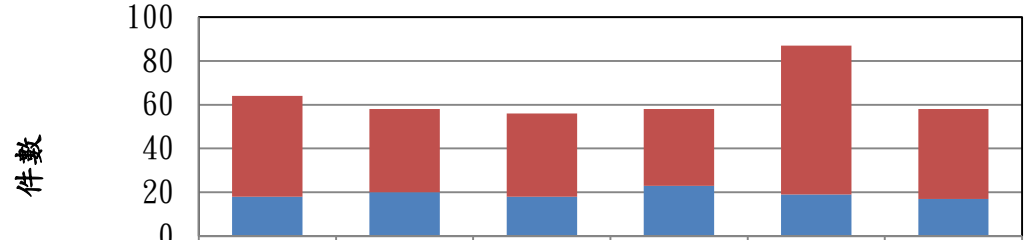
生施以理論與實務並重的完整專業訓練，使其具備各種有關電子工程之設計、製造、應用與修護的專業技能及解決問題的能力，以符合高級技術人才必備的資格。而且配合通識課程的規劃，來提升學生之科技與人文素養。同時，為充份尊重學生的受教權及了解老師的教學成效，於每學期期末對每一學科進行教學評量，以作為提昇教學的參考依據。本系持續推動各項教學改進措施，以追求教學卓越。本系鼓勵教師使用網路教學及其他新式教學平台，以提升教學成效；每年辦理「學院傑出教學獎」之選拔，獎勵教學績優之教師。本系目前亦為教育部「智慧電子應用設計」聯盟中心。本系之各項教學活動一向以務實嚴謹自期。已於 96 年起通過「工程及科技教育認證」，102 年並通過「工程及科技教育認證」六年期認證。為發揚本校重視實作的核心競爭力，縮小在校所學與產業界需求的差距，持續鼓勵學生積極從事實務專題研究，培養其創新思考模式與實務經驗，以充分發揮技職教育特色。

4.2 研發與產學合作計畫

本系積極從各個管道爭取研究計畫，其中由政府機構取得之計畫經費比例相當高，支持本系教師能夠維持學術研究的主要經費來源，包含：國科會研究計畫案與教育部教學改進計畫案…等。同時，本校倡導產學合作，憑藉本系傑出校友眾多，讓本系與業界有著相當緊密的合作關係，因此，相關產學計畫亦提供系上經費非常大的協助，加上本校的地理位置位於台北市市中心，交通方便，合作聯繫相當容易、方便，讓教師與業界交流頻繁。

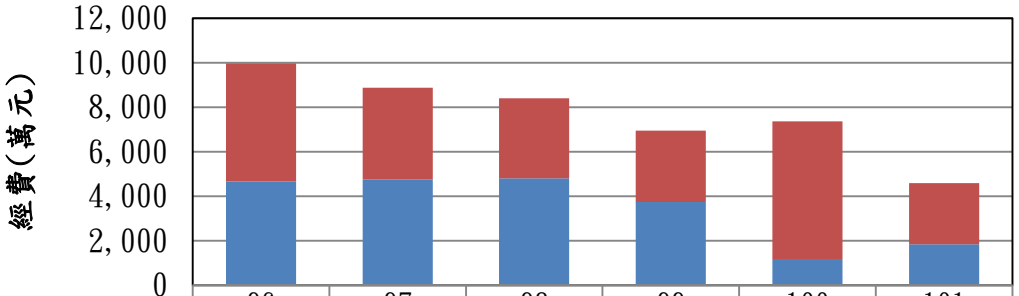
本系專任教師 96-101 學年度分別主持或共同參與過 381 件計畫，經費共計約有 46,168 萬元，其中 96 學年度共有 64 個計畫(主持人有 46 個計畫、共同主持人有 18 個計畫)，研究經費計 9,978 萬元(主持人約有 5,318 萬元、共同主持人約有 4,661 萬元)；97 學年度共有 58 個計畫(主持人有 38 個計畫、共同主持人有 20 個計畫)，研究經費計 8,882 萬元(主持人約有 4,132 萬元、共同主持人約有 4,750 萬元)；98 學年度共有 56 個計畫(主持人有 38 個計畫、共同主持人有 18 個計畫)，研究經費計 8,408 萬元(主持人約有 3,597 萬元、共同主持人約有 4,811 萬元)；99 學年度共有 58 個計畫(主持人有 35 個計畫、共同主持人有 23 個計畫)，研究經費計 6,947 萬元(主持人約有 3,202 萬元、共同主持人約有 3,745 萬元)；100 學年度共有 87 個計畫(主持人有 68 個計畫、共同主持人有 19 個計畫)，研究經費計 7,360 萬元(主持人約有 6,186 萬元、共同主持人

約有 1,173 萬元)；101 學年度共有 58 個計畫(主持人有 41 個計畫、共同主持人有 17 個計畫)，研究經費計 4,592 萬元(主持人約有 2,758 萬元、共同主持人約有 1,834 萬元)。圖 1 為 96-101 學年度專任教師主持/參與計畫件數統計圖，圖 2 為 96-101 學年度專任教師主持/參與計畫經費統計圖，圖 3 為 96-101 學年度專任教師主持計畫類型統計圖。96 學年度至 101 學年度之平均各項補助經費比例如圖 4 所示。表 1 為 96-101(學)本系所各項補助經費表，表 2 為 101-102 年本系所國科會與產學合作補助經費表。



	96	97	98	99	100	101
主持人	46	38	38	35	68	41
共同主持人	18	20	18	23	19	17

圖 1　96-101 學年度專任教師主持/參與計畫數統計圖



	96	97	98	99	100	101
主持人	$53,175,6	$41,320,8	$35,968,2	$32,024,9	$61,864,9	$27,582,4
共同主持人	$46,610,0	$47,500,9	$48,111,2	$37,448,1	$11,730,2	$18,339,0

圖 2　96-101 學年度專任教師主持/參與計畫經費統計圖

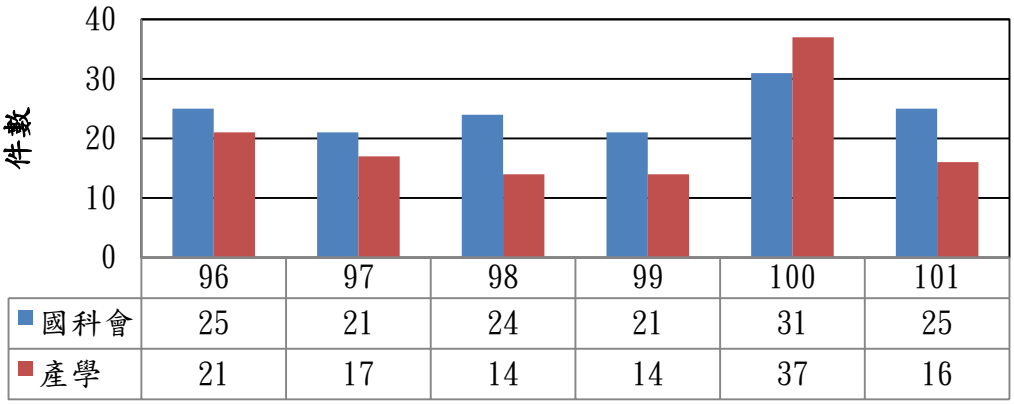


圖 3　96-101 學年度專任教師主持計畫類型統計圖

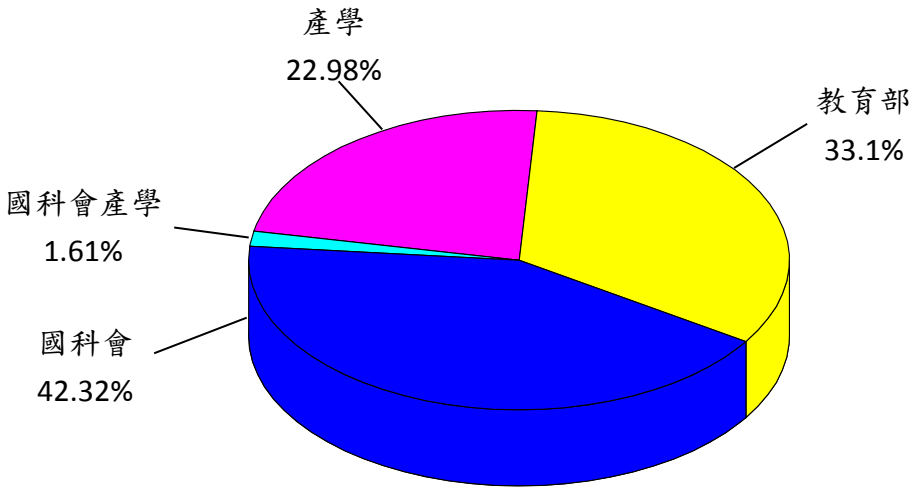


圖 4　本系所 96-101 年度平均各項補助經費比例

表 1　96-101(學) 本系所各項補助經費表

補助類別 \ 年度		96	97	98	99	100	101
主持人	國科會	15,129,500	14,246,000	16,073,600	16,449,000	28,438,600	16,271,000
	國科會產學	1,796,123	240,000	806,460	176,400	0	1,033,918
	產學	14,471,500	9,294,400	5,944,000	3,192,000	18,862,355	6,132,500
	教育部	21,778,508	17,540,448	13,144,232	12,207,592	14,563,951	4,145,000
	小計	53,175,631	41,320,848	35,968,292	32,024,992	61,864,906	27,582,418

共同主持人	國科會、國科會產學、產學、教育部	46,610,087	47,500,974	48,111,223	37,448,132	11,730,286	18,339,000
總計		99,785,718	88,821,822	84,079,515	69,473,124	73,595,192	45,921,418

表 2　101-102 年本系所國科會與產學合作補助經費表

項目	101 年					102 年				
	人數	國科會		產學合作		人數	國科會		產學合作	
		總計	平均	總計	平均		總計	平均	總計	平均
電子系	32	15,507	485	11,412	357	33	14,623	443	12,228	371

4.3 論文與作品發表

本系對於教師之學術研究相當重視，論文與作品發表成果豐碩。圖 5 為 96-101 學年度專任教師參加國內、外學術會議統計圖。表 3 為 101-102 年本系所 SCI 論文統計表。

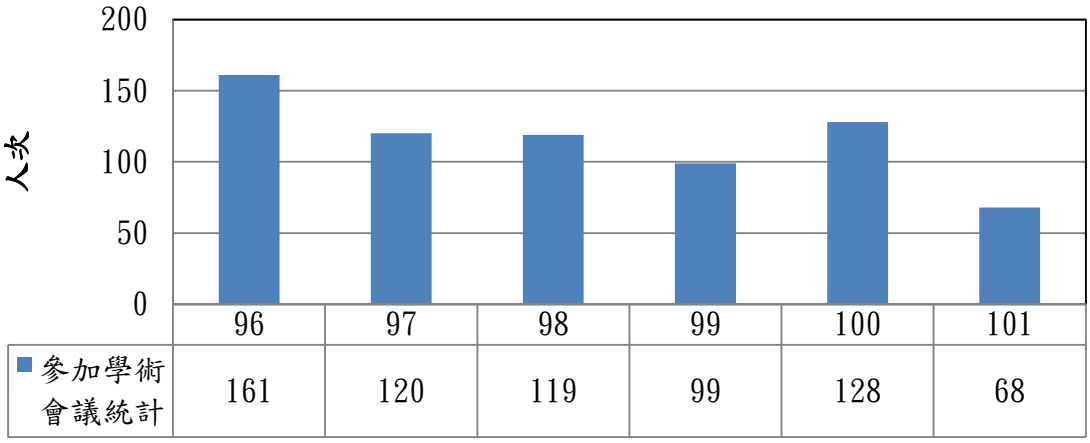


圖 5　96-101 學年度參加國內外學術會議統計圖

表 3　101-102 年本系所 SCI 論文統計表

項目	101 年			102 年		
	人數	SCI/SSCI		人數	SCI/SSCI	
		篇數	均值		篇數	均值
電子系	32	58	1.81	33	78	2.36

4.4 獎項與榮譽

本系獎項與榮譽成果豐碩。圖 6 為 96-101 學年度專任教師獲獎統計圖。圖 7 為 96-101 學年度專任教師獲得研究獎勵統計圖。

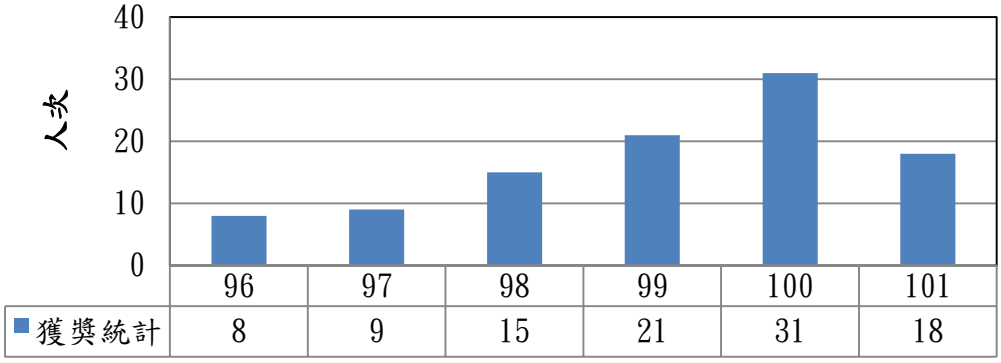


圖 6　96-101 學年度專任教師獲得研究獎勵統計圖

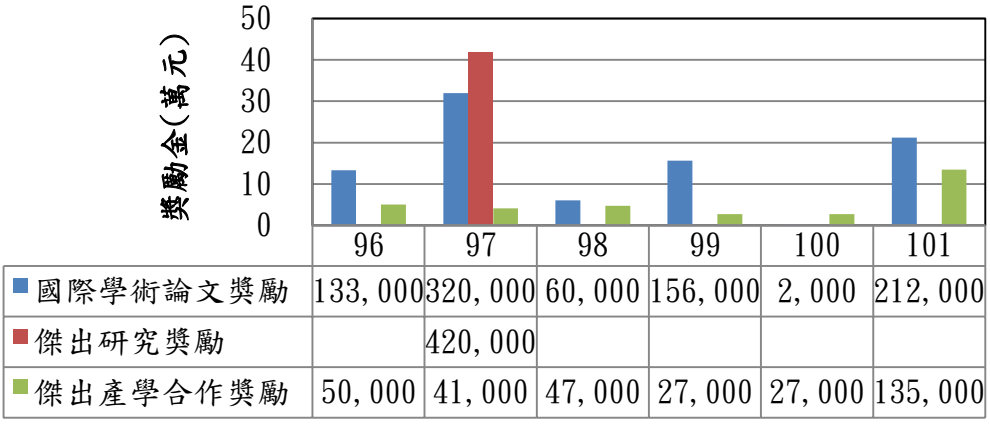


圖 7　96-101 學年度專任教師獲得研究獎勵統計圖

4.5 其他成果展示

本系其他成果展示成果豐碩，圖 8 為 96-101 學年度專任教師參加國內、外學術會議統計圖，表 4 為本系所專任教師參與學術活動情況。

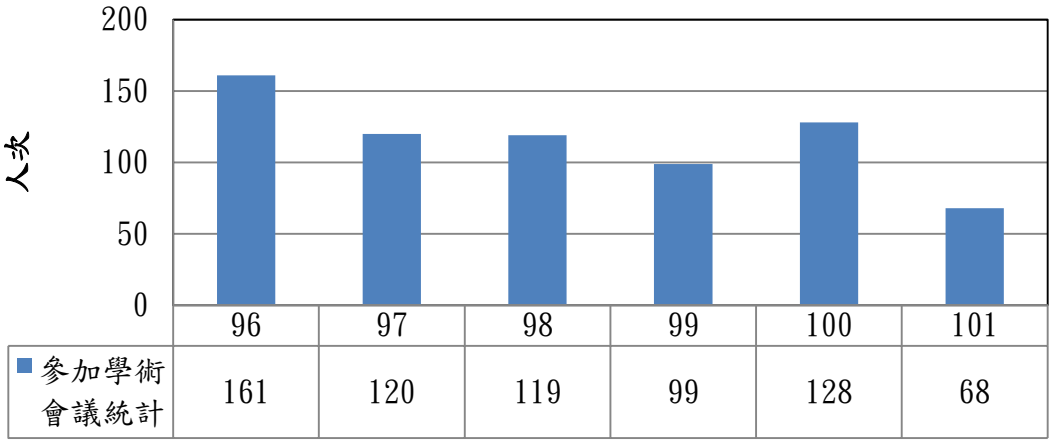


圖 8　96-101 學年度專任教師參加國內、外學術會議統計圖

表 4 本系所專任教師參與學術活動情況

措施	年度					
	96	97	98	99	100	101
獲得「陽光獎助金論文發表獎勵」教師人數	7	13	10	13	10	15
出席國際會議教師人次	20	30	30	33	32	31
出國短期訪問教師人數	1	1	0	1	2	2
教授輪休(sabbatical leave)申請人數	1	0	0	0	2	1
進修教師人數	4	3	3	3	3	2

伍、 資訊工程系

5.1 系所簡介

本校為配合當年國家「十大新興工業」發展政策，提升國內「數位內容產業」與「資訊應用服務業」，培育社會殷切需求之相關資訊人才，加速推動資訊軟體工業之進展，滿足社會需求，同時配合本校中長程發展，提昇技職教育品質及就業競爭力，於民國 89 年創立本系。成立初期僅有碩士班，而於次年起開始招收二年制大學部(二技)學生。此後為因應五專逐年減少，自民國 93 年起，本系將二技改制為招收四年制大學生的四技學制，並於翌年(民國 94 年)奉准成立博士班，本系之學制，臻於完整。在此過程期間，學校於民國 95 年 8 月成立電資學院，由原屬機電學院改棣屬新成立之電資學院。

目前本系有專任教師 16 位，包含 6 位教授、8 位副教授及 2 位助理教授，均具國內外大學博士學位，學生計有博士生 26 人、碩士生 132 人、大學部四技生 213 人。同時，本系具有完整的系務工作組織架構，藉由各級委員會、以及教學與研究群組，負責各項系務工作、課程規劃及中長期發展等之規劃、審議、推動及研訂。

本系以「多媒體系統」、「網路系統」與「軟體系統」等三大特色領域為教學與研究之核心，發展兼具實用性與前瞻性的資訊科技，以培養能直接投入資訊產業的科技人才為主。研究內容主要含括多媒體技術、影像處理、視訊編碼、電腦通訊網路、行動計算、雲端系統、資訊檢索、嵌入式系統、軟體工程、物件導向及相關應用技術等領域，並藉由 13 間特色實驗室的研究設備與人力，作為推動研究與實現構想之基礎研發基地。這三大特色領域是數位內容產業所需的核心技術，也是資訊應用服務產業中最關鍵的技能，更是企業藉以提升效率、產能及營運能力的利器。因此，本系的教學與研究方向，將致力配合上述的政策發展目標，並著重於：

(1) 研發「以應用為導向」的理論與技術，

(2) 強調訓練「系統設計與實務並重」之技能，

(3) 尋求與業界需求密切結合的專案及相關研究計畫。

本著技職教育的精神，系上教學多以實務技術為最終學習目標。課程間教材相互搭配銜接，提升關聯性，相關課程內容及習作採漸進累積方式，其學習成果並可延伸作為畢業專題實務、企業實習，以及各項校內、外專題成果競賽之基礎技能，並同時

兼顧到學生就讀碩、博士班時之學理研究基礎。因而課程規劃之作業及專題實作結果，可長時間逐步改良累積，衍生成足以成為具有商業價值之專業代表作品，並能增加學生就業或創業之競爭優勢。此一教學方式已提供未來 Capstone Course 的基本架構，能夠使學生深化多年課程所學、統整實務經驗之環境，使學習成效穩固達成。此一教學方式之成果，已逐漸呈現於本系近年各項校內、外專題競賽，多次獲得全國冠軍之優異成績表現。

本系設立迄今，已有 13 屆碩士班畢業生、3 屆大學部二技畢業生與 7 屆大學部四技畢業生。根據本系對畢業生之就業情況追蹤，以及相關專業媒體多年的調查統計報導顯示，各界企業經理人普遍對本校及本系畢業生之專業能力，及其良好之敬業精神、團隊意識、與工作穩定度，給予高度的肯定。最具體的呈現，是遠見雜誌 2008 年至 2011 年所做的「企業最愛大學評鑑」調查結果中，本校「科技大學畢業生表現排名」每年排名均為第一名。雖然同學在學其間多半感受較嚴謹的學習壓力，但畢業後則普遍肯定老師的用心教學，這是本系最值得自豪的地方之一。

此外，本系所歸屬的電資學院之定位，是為教學、學術研究與產學合作多元發展的學院，以發揮全院師生的潛能與專長。希望培育電機、電子、光電、資訊科技專業與領導人才，組織研究群，產出特色研究成果，推動產學合作，加強與校友互動，並逐步推展國際交流與合作，具備完整專業知識、良好溝通訓練、優越研發創新技術與協調領導能力，並具有國際觀、專業視野、自我學習能力與職場倫理，以專業技能與素養豐富個人生命、貢獻社會、提昇人類生活品質。

5.2 研發與產學合作計畫

學術研究量能的提升為本系發展核心目標，為達成此目標，除仰賴系上教師群心群力外，尚需相當研究經費的挹注，因此本系對於研究資源的取得，長期以來均投入相當大的人力，以積極承接各類研究計畫，近 5 年本系教師主持或共同參與約 240 餘件各類計畫案，總金額達一億一千多萬元。表 1 為本系教師 99-103 年度主持各類研究計畫案統計表，其中承接科技部研究計畫是最主要經費來源。

表 6.2.1　99-103 年度資工系各類研究計畫案統計表

年度	科技部		其他政府部門		產學合作		總計	
	件數	金額(千元)	件數	金額(千元)	件數	金額(千元)	件數	金額(千元)
99	17	10,938	2	6,850	4	1,236	23	19,024
100	23	14,692	4	7,620	5	1,285	32	23,597
101	18	16,357	3	2,608	6	1,094	27	20,059
102	18	16,572	6	4,196	7	3,839	31	24,607
103	18	18,077	2	1,800	10	4,205	30	24,082

註：1.資料來源：本校教師評鑑及基本資料庫系統
2.本表不含共同主持計畫案

圖 1、圖 2 及圖 3 分別為本系 99-103 年度各類研究計畫案總金額、件數統計及年度平均經費占比圖，由圖中可清楚看出在科技部研究計畫案中的年度金額逐年成長，另產學合作計畫案中，雖占年度平均金額比例不高，但其年度金額及件數均呈大幅成長之勢，此與本校實務研究型大學的辦學目標相吻合，未來本系在產學合作方面將持續與產業界建立更緊密的合作關係。

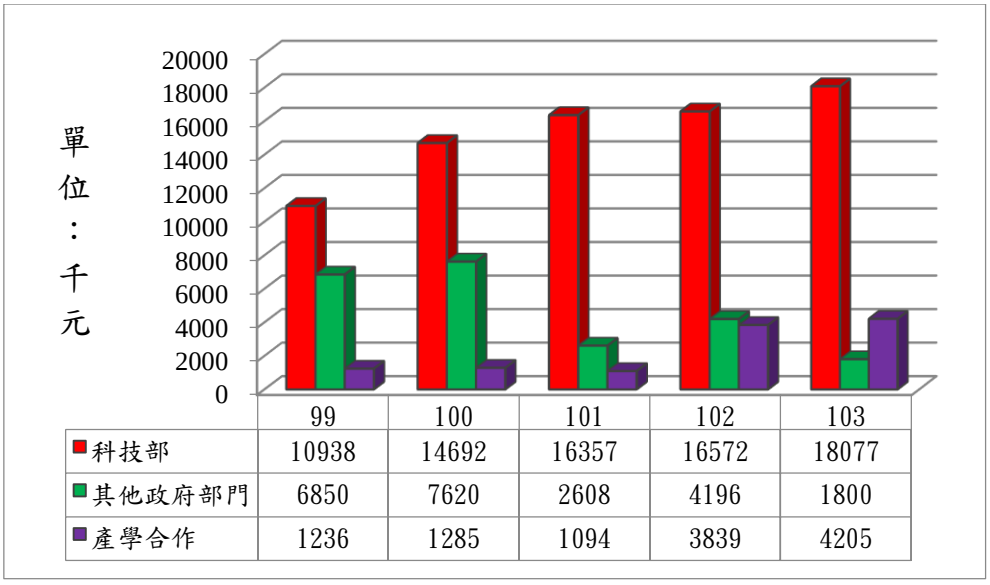
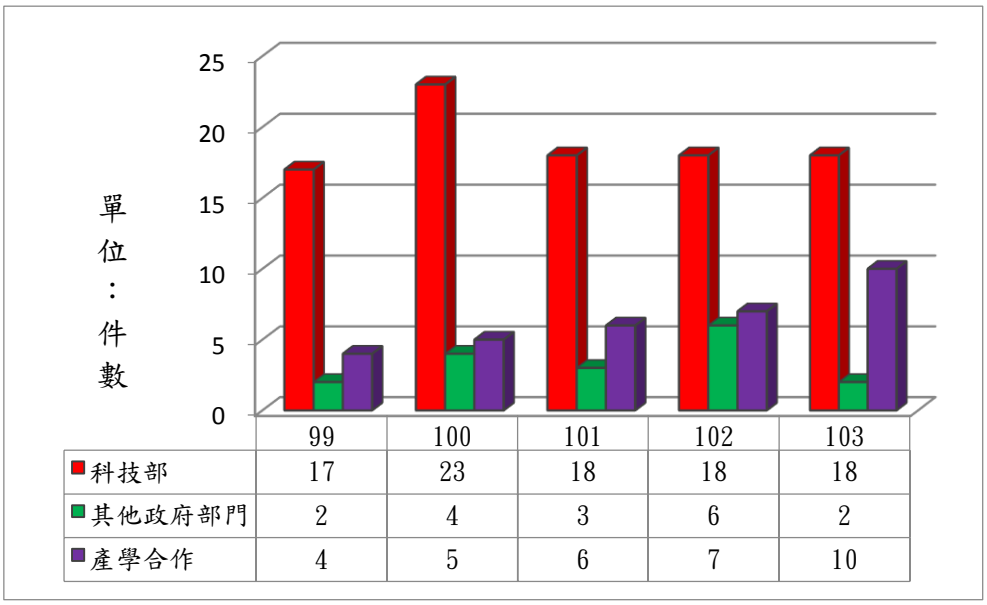


圖 6.2.1　99-103 年度資工系各類研究計畫案金額統計圖



	99	100	101	102	103
科技部	17	23	18	18	18
其他政府部門	2	4	3	6	2
產學合作	4	5	6	7	10

圖 6.2.2　99-103 年度資工系各類研究計畫案件數統計圖

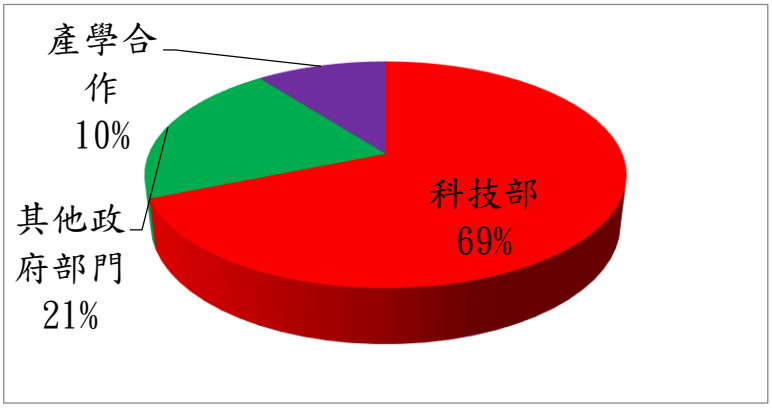


圖 6.2.3　99-103 年度資工系各類研究計畫案平均經費占比圖

5.3 論文與作品發表

本系教師除在研究計畫案積極作為外，亦藉由相關計畫案之研究範疇及獲取之研究資源，將之轉換為實質的研究產出，相關的產出可由表 6.3.1 的 99-103 年度學術論文統計表中得知，每年均有百餘篇論文發表於各類期刊及相關研討會上，就論文的品質與數量而言，均有不錯的表現，每年人均值達 5.9 篇以上。

表 6.3.1　99-103 年度資工系學術論文統計表

年度	期刊論文				研討會	人均值
	SCI	EI	其他期刊	總篇數		
99	10	3	10	23	72	5.9
100	17	7	8	32	86	7.4
101	28	8	9	45	70	7.2
102	30	10	7	47	76	7.7
103	25	1	3	29	66	5.9

資料來源：本校教師評鑑及基本資料庫系統

師資：16 人

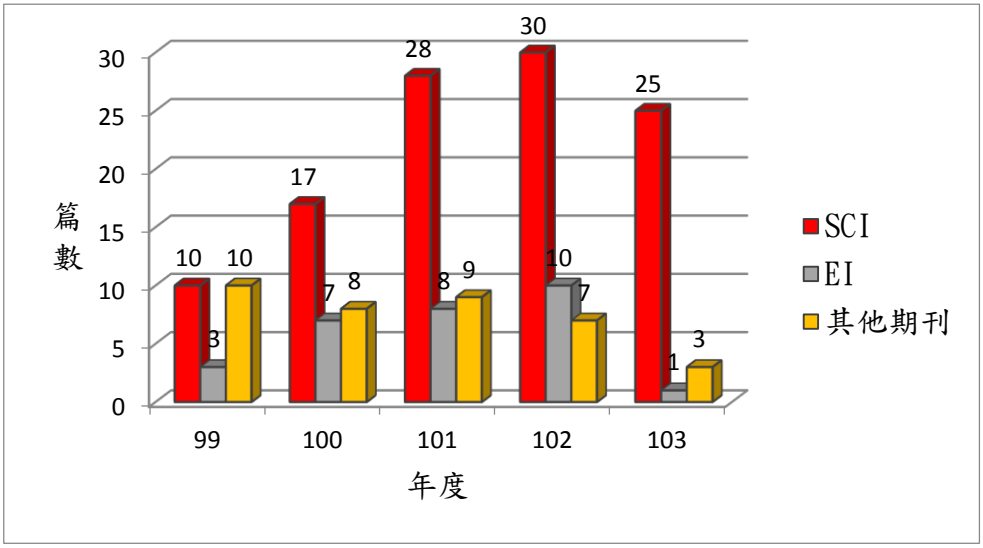


圖 6.3.1　99-103 年度資工系學術論文統計圖

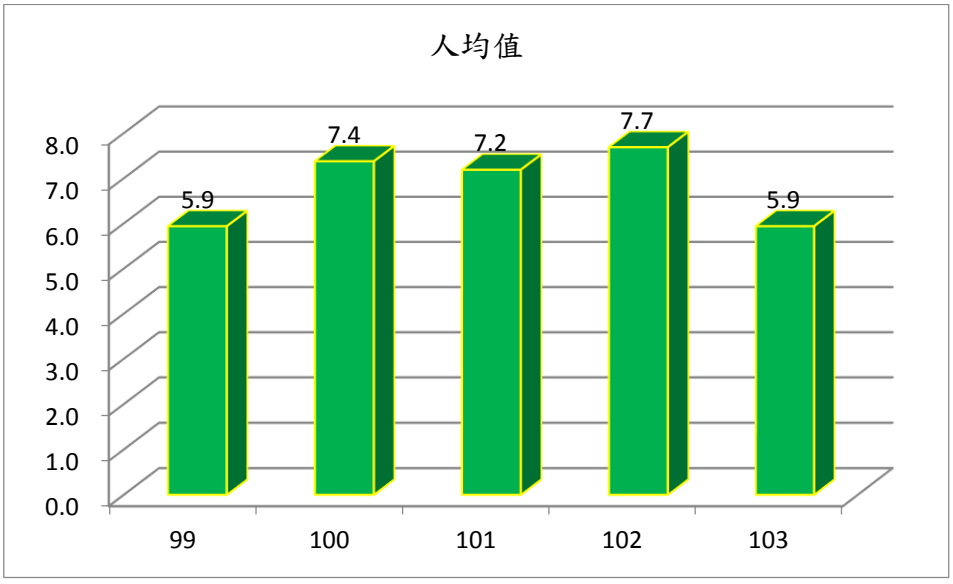


圖 6.3.2　99-103 年度資工系學術論文人均值統計圖

除學術論文的研究與發表外，本系教師亦積極參與各國內外各項知名學術研討會，藉由與國內外各領域之專家學者交流互動，互為汲取新知。在 99-103 年間本系教師每年約參加 40 場次以上學術活動，相關統計數字詳表 6.3.2 本系 99-103 年間參與國內外學術研討會統計表。

表 6.3.2　99-103 資工系年間參與國內外學術研討會統計表

年度	學術活動		總計
	國內學術研討會	國際學術研討會	
99	28	17	45
100	22	19	41
101	26	15	41
102	28	17	45
103	22	19	41

資料來源：本校教師評鑑及基本資料庫系統

5.4 獎項與榮譽

本系教師平均教學年資近 20 年，除獲有校內院、校傑出教學獎、傑出研究獎外，亦獲有校內外其他各項獎項，其中對於帶領學生組隊參加各公私立機關團體主辦之競賽，更是不遺餘力，獲獎連連，在 99-103 年度總計獲取 88 項各類獎項，其中更有學生團隊獲取單一獎項最高 50 萬元之獎金，成果豐碩，詳細資料如表 6.4.1。

表 6.4.1　99-103 年度資工系各獎項獲獎詳細列表

獲獎日期	教師姓名	獲獎名稱	頒獎機構
2010/3/1	陳彥霖	指導碩士班學生參與教育部 98 學年度大學校院網路通訊軟體與創意應用競賽榮獲 值得注目獎 －"智慧型夜間駕駛輔助與行車紀錄系統"	教育部
2010/6/1	陳偉凱	教學優良獎	本校電資學院
2010/6/1	楊士萱	國立台北科技大學電資學院實務專題競賽金手獎	國立台北科技大學
2010/6/15	楊士萱	國立台北科技大學電資學院傑出教學獎	國立台北科技大學
2010/6/30	劉傳銘	自由軟體計劃績優團隊	科技部
2010/7/1	陳偉凱	國科會「自由軟體暨嵌入式系統計劃」群體計劃績優團隊獎	科技部
2010/7/23	陳偉凱	最佳論文獎(An Interaction Coverage Analysis Tool for GUI Test Cases)	2010 年台灣物件導向技術及應用暨軟體工程研討會
2010/8/16	梁文耀	列名 2010 Marquis Who's Who in the World	Marquis Who's Who
2010/9/2	吳和庭	國科會工程處自由軟體研發專案績優團隊	科技部
2010/9/2	柯開維	自由軟體暨嵌入式系統計畫績優團隊	科技部

獲獎日期	教師姓名	獲獎名稱	頒獎機構
2010/9/2	楊士萱	97 年度國科會自由軟體暨嵌入式系統計畫績優團隊獎	科技部
2010/10/1	陳英一	2010 年經濟部技術處「學界關懷計畫」執行成果獲評選為 A+ 優選案例	經濟部技術處
2010/11/18	梁文耀	國立台北科技大學資工系大學部實務專題製作競賽優等 指導學生: 張育妮、楊夢儒	國立台北科技大學資工系
2010/11/19	陳偉凱	學生參加 Game Competition 獲 Merit Award。	ACE 2010 (International Conference on Advances in
2010/12/10	吳和庭	2010 年開放原始碼創新應用開發大賽	資策會
2010/12/31	謝東儒	Hami Apps 創意成金	中華電信
2011/1/1	楊士萱	2010 開放原始碼創新應用開發大賽（主辦單位：經濟部工業局、執行單位：財團法人資訊工業策進會），獲得學生組優等（獎金 10 萬與獎座乙座）作品名稱：手持式行動數位電視 DVB-H 接收系統	經濟部工業局 (99/12)
2011/1/1	楊士萱	2010 開放原始碼創新應用開發大賽（主辦單位：經濟部工業局、執行單位：財團法人資訊工業策進會），獲得學生組佳作（獎金 2.5 萬與獎座乙座），作品名稱：電視廣告偵測軟體	經濟部工業局 (99/12)
2011/3/1	陳彥霖	99 學年度大學校院建國百年開放軟體創作競賽榮獲行動終端應用組佳作獎	教育部
2011/5/18	陳英一	99 學年度大學校院網路通訊軟體與創意應用競賽，網際網路應用與服務組第二名	教育部
2011/5/24	陳偉凱	電資學院教師傑出服務獎	台北科大
2011/5/26	陳偉凱	第 5 屆電資學院金手獎競賽佳作	台北科大
2011/5/30	陳彥霖	中華智慧型運輸系統協會 100 年度智慧運輸論文獎	中華智慧型運輸系統協會
2011/9/1	吳和庭	國科會工程處自由軟體研發專案績優團隊	科技部
2011/9/1	楊士萱	98 年度國科會自由軟體暨嵌入式系統計畫績優團隊獎	科技部
2011/12/10	陳偉凱	指導學生王瀚宇、徐嘉陞同學撰寫並設計 Android 手機解謎遊戲「ConstantC」，參加經濟部工業局主辦「App Star 高手爭霸戰」，榮獲冠軍，獲得獎金 50 萬元。	經濟部工業局
2011/12/16	張厥煒	第一屆中華太谷盃嵌入式系統創意應用競賽 第二名	中華科技大學
2012/1/1	陳偉凱	指導學生參加遠傳 S 市集「2011 app 星光大賞」獲年度最佳遊戲獎、年度最佳創意獎及校園新秀特別獎(獎金：53 萬元)。	遠傳
2012/4/13	陳彥霖	第九屆育秀盃創意獎，榮獲工業設計類佳作獎	財團法人育秀教育基金會
2012/4/13	陳彥霖	第九屆育秀盃創意獎，榮獲工業設計類菁英獎	財團法人育秀教育基金會
2012/4/13	陳彥霖	第九屆育秀盃創意獎，榮獲工業設計類最佳組合獎	財團法人育秀教育基金會
2012/4/15	張厥煒	2012 微軟潛能創意盃 遊戲開發組-Phone 台灣區冠軍	台灣微軟公司
2012/4/15	陳彥霖	IEEE Senior Member	IEEE - Institute of Electrical and Electronics Eng
2012/4/15	劉傳銘	2012 微軟潛能創意盃(Imagine Cup)遊戲開發組-phone 榮獲第一名	微軟
2012/4/15	劉傳銘	2012 微軟潛能創意盃(Imagine Cup)遊戲開發組-phone 榮獲第三名	微軟
2012/4/22	王正豪	100 學年度大學校院網路通訊軟體與創意應用競賽網際應用與服務組 - 值得注目獎	教育部
2012/4/25	郭忠義	第十四次 ITSA 線上程式設計大賽績優團隊	教育部顧問室資訊軟體人才培育先導計畫

獲獎日期	教師姓名	獲獎名稱	頒獎機構
2012/4/27	王正豪	100 學年度大學校院網路通訊軟體與創意應用競賽 網際應用與服務組 第二名	教育部
2012/5/19	張厥煒	2012 開放軟體創作競賽 智慧感知與互動多媒體-學生組 金牌	教育部
2012/5/19	陳彥霖	教育部 2012 年開放軟體創作競賽榮獲 行動終端應用組值得注目獎	教育部
2012/7/6	陳偉凱	最佳論文獎(An Instructional Design that Improves Students' Source Code Quality by Reducing Bad Smells)	2012 台灣軟體工程研討會
2012/8/15	張厥煒	2012 數位生活科技研討會 佳作論文獎	2012 數位生活科技研討會
2012/8/31	柯開維	國科會嵌入式與自由軟体績優計畫獎	科技部
2012/8/31	陳偉凱	國科會「自由軟體暨嵌入式系統計劃」績優團隊計畫	科技部
2012/8/31	楊士萱	99 年度國科會「自由軟體暨嵌入式系統計畫」群體計畫績優團隊獎	科技部
2012/8/31	楊士萱	99 年度國科會「自由軟體暨嵌入式系統計畫」績優團隊獎	科技部
2012/9/1	吳和庭	國科會工程處自由軟體研發專案績優團隊	科技部
2012/9/19	張厥煒	2012 軟體創作達人暑期成長營 最佳團隊獎	教育部
2012/9/19	陳彥霖	101 年度智慧運輸論文獎 -"以電腦視覺為基礎的嵌入式智慧型夜間車輛偵測暨交通監控系統"	中華智慧型運輸系統協會
2012/9/20	陳彥霖	101 年度國家發明獎銀牌獎	經濟部智慧財產局
2012/11/6	陳彥霖	技術及知識應用型產學合作計畫 電資通訊領域」《海報展示傑出獎》	科技部
2012/11/24	張厥煒	2012 華碩 Xtion PRO 創意體感程式競賽 佳作獎	華碩電腦公司
2012/12/14	柯開維	第二屆中華太谷盃全國性嵌入式系統創意應用競賽第一名	國立台北科大，集博股份有限公司，亞美地科技股份有限
2012/12/14	陳彥霖	第二屆中華太谷盃嵌入式創意應用競賽，榮獲第一名	集博股份有限公司
2012/12/29	劉傳銘	101 第二次全國大專 ITSA 盃程式設計桂冠挑戰大賽挑戰組 佳作	教育部資訊人才培育計畫
2013/1/28	柯開維	教材編撰 優等獎	教育部
2013/3/17	張厥煒	微軟潛能創意盃(Imagine Cup) 世界公民組 (World Citizen) 台灣區亞軍	台灣微軟公司
2013/4/10	陳彥霖	中華民國系統學會-"第四屆傑出青年獎"	中華民國系統學會
2013/5/9	張厥煒	台北科大電資學院 第七屆 金手獎第一名	台北科大電資學院
2013/5/15	陳彥霖	國立臺北科技大學電資學院傑出研究獎	國立臺北科技大學電資學院
2013/5/18	劉傳銘	102 第一次全國大專 ITSA 盃程式設計桂冠挑戰大賽挑戰組 佳作	教育部資訊人才培育計畫
2013/5/26	劉傳銘	2013 南區大專院校程式設計競賽 進階組 佳作	國立中正大學資訊工程學系
2013/6/2	陳彥霖	擔任 2013 IEEE International Symposium on Consumer Electronics (ISCE 2013)之 Publication Chair	IEEE
2013/6/6	張厥煒	第六屆全國大專盃創業競賽 社會心關懷組 第一名	國立台北科技大學教資中心
2013/6/20	陳彥霖	第六屆全國大專盃創業競賽優選獎	第六屆全國大專盃創業競賽
2013/6/27	張厥煒	2013 數位生活科技研討會 佳作論文獎	國立雲林科技大學
2013/6/30	陳彥霖	2013 年機器人盃日本公開賽(RoboCup Japan Open 2013 Tokyo)榮獲亞軍	日本機器人協會
2013/7/5	鄭有進	最佳論文獎	社團法人台灣軟體工程學會

獲獎日期	教師姓名	獲獎名稱	頒獎機構
2013/7/5	謝金雲	2013 台灣軟體工程研討會最佳論文獎(以雲端平台特性為目標將 Web 應用程式遷移至雲端之重構方法：以 ezScrum 為例)	財團法人台灣軟體工程學會
2013/8/18	吳和庭	第一屆 IPPR 技術創新暨產業應用獎 佳作獎	中華民國影像處理與圖形識別學會
2013/8/18	陳彥霖	第一屆 IPPR 技術創新暨產業應用獎 佳作獎（智慧聯網電視關鍵技術）	中華民國影像處理與圖形識別學會
2013/8/18	陳彥霖	第一屆 IPPR 技術創新暨產業應用獎 佳作獎（以電腦視覺為基礎的智慧型夜間駕駛輔助及交通監控系統 ）	中華民國影像處理與圖形識別學會
2013/8/18	楊士萱	IPPR 技術創新暨產業應用獎佳作，作品名稱：智慧聯網電視關鍵技術	中華民國影像處理與圖形識別學會
2013/8/27	王正豪	第一屆 IPPR 技術創新暨產業應用獎 佳作獎	中華民國影像處理與圖形識別學會
2013/9/1	陳彥霖	第六屆上銀智慧機械手實作競賽佳作獎	上銀科技
2013/10/19	劉傳銘	102 年度全國大專電腦軟體設計競賽 佳作	教育部、國立中山大學
2013/11/1	劉傳銘	2013 年 4C 數位創作競賽【行動遊戲創作組】優選、台灣在地特色獎	經濟部工業局
2013/11/9	張厥煒	第 18 屆全國大專校院資訊應用服務創新競賽 資訊技術應用組 第一名	經濟部工業局、教育部資訊及科技教育司、中華民國資訊
2014/1/2	陳彥霖	教育部 102 年度資訊及科技教育司網路通訊人才培育先導型計畫，優良教材佳作獎	教育部
2014/4/19	陳彥霖	2014 大專校院軟體創作競賽榮獲佳作獎	教育部
2014/5/9	張厥煒	國立臺北科技大學電資學院金手獎第一名	國立臺北科技大學
2014/5/17	陳彥霖	德州儀器 (TI) DSP 及 MCU 應用競賽（Taiwan DSP-MCU Design Contest 2014）榮獲 DSP 創思應用實現組第三名	德州儀器
2014/5/17	劉傳銘	第三屆全國大專 ITSA 盃程式設計桂冠挑戰大賽挑戰組績優團隊	教育部資訊人才培育計畫
2014/6/1	陳彥霖	2014 年機器人盃日本公開賽(RoboCup Japan Open 2014 Tokyo)榮獲技術挑戰賽冠軍	日本機器人協會
2014/6/1	陳彥霖	2014 年機器人盃日本公開賽(RoboCup Japan Open 2014 Tokyo), 足球賽季軍	日本機器人學會
2014/6/5	張厥煒	2014 第七屆全國大專盃創業競賽 優選獎	國立臺北科技大學 教資中心
2014/6/5	陳彥霖	IEA-AIE 2014 電腦視覺技術競賽榮獲第三名	中華民國民生電子學會
2014/6/25	劉傳銘	第 31 次 ITSA 線上程式設計競賽績優團隊	教育部資訊人才培育計畫
2014/8/27	郭忠義	第 32 次 ITSA 線上程式設計大賽績優團隊	教育部資訊人才培育計畫
2014/9/2	郭忠義	科技部 101 年度開放軟體研發計畫，計畫名稱: 測試專案排程與監督服務之開發，榮獲績優團隊。	科技部
2014/9/2	陳偉凱	科技部 101 年度開放軟體研發專案計畫績優團隊獎	科技部
2014/9/24	陳彥霖	經濟部「2014 OpenData 創新應競賽」榮獲特優獎	經濟部
2014/11/1	陳彥霖	本校 103 年度全校傑出研究獎	國立臺北科技大學
2014/11/22	陳彥霖	「教育部 103 年度全國大專電腦軟體設計競賽」獲應用軟體設計組第三名	教育部
2014/12/1	陳彥霖	「103 年度科技部工程師 技術及知識應用型產學合作計畫 電資通訊領域」《產學成果傑出獎》	科技部工程師

5.5 其他成果展示

為縮短產學之間的落差，除相關產學合作案持續進行外，本系近年來陸續藉由技術移轉來加強企業間的合作關係。另在專利案件的申請亦逐步提高，藉此將部分學術型研究導向實務型研究，以符本校作為科技大學龍頭之辦學目標。除此之外，在專業服務方面，本系多位教師長期擔任各類期刊編審委員、各公私立機關組織案件審查委員及國家考試命題委員等，相關服務案每年約百餘件，相關統計數字如表 6.5.1 其他成果統計表。

表 6.5.1　99-103 年度資工系其他成果統計表

年度	技術移轉	專業服務	專利申請
99	7	118	5
100	15	81	3
101	10	107	4
102	7	108	1
103	13	103	9

資料來源：本校教師評鑑及基本資料庫系統

本系除積極參與各類學術活動外，亦主動爭取辦理各類學術活動與競賽活動，在 99-103 年度間共計主(協)辦了 15 場相關活動，詳細活動名稱如表 6.5.2。

表 6.5.2　99-103 年度資工系舉辦學術活動與競賽活動

活動名稱	活動種類	參與情形	開始日期	結束日期
2010 Joint Conference on Object-Oriented Technology and Applications and Software Engineering	學術研討會	主辦	2010/7/22	2010/7/23
2010 年台灣物件導向技術及應用暨軟體工程研討會	學術研討會	主辦	2010/7/22	2010/7/23
教育部網路通訊人才培育先導型計畫/寬頻匯流網路管理教材發表	進修研習	主辦	2012/1/16	2012/1/16
數位匯流教材發展聯合成果發表會/寬頻匯流網路管理	作品發表會	協辦	2012/3/20	2012/3/20
教育部資訊軟體人才培育計畫「行動終端應用跨校資源中心」「行動終端應用軟體創作專題競賽」	競賽活動	主辦	2012/6/22	2012/6/22

活動名稱	活動種類	參與情形	開始日期	結束日期
2012 年台灣軟體工程研討會	學術研討會	主辦	2012/7/6	2012/7/7
第二屆中華太古盃嵌入式創意應用競賽	競賽活動	主辦	2012/12/14	2012/12/14
教育部資訊軟體人才培育計畫「行動終端應用跨校資源中心」「行動終端應用軟體創作專題競賽」	競賽活動	主辦	2013/1/18	2013/1/18
UI/UX 行動終端使用者研討會	學術研討會	協辦	2013/8/5	2013/8/7
2013 行動終端使用者體驗研討會暨創新設計工作坊	進修研習	主辦	2013/8/5	2013/8/7
全國計算機會議 (NCS)-Workshop on Programming Languages and Software Engineering	學術研討會	協辦	2013/12/13	2013/12/14
miniPLoP@Taipei Tech, 2014	進修研習	主辦	2014/5/29	2014/5/29
2014 台灣軟體工程研討會	學術研討會	主辦	2014/6/29	2014/6/30
第廿二屆計算機圖學研討會	學術研討會	主辦	2014/7/10	2014/7/11
2014 消息理論及通訊秋季研討會暨科技部計畫成果發表會	作品發表會	主辦	2014/8/21	2014/8/22

陸、 光電工程系

6.1 系所簡介

本校十分重視光電領域的教學與研究，早在 1986 年即成立光電科技中心，設立光電科技學程，推動全校性光電科技 教學，並逐年設立多間研究實驗室，以推動研發光電科技。並於 1999 年 8 月在機電學院成立光電技術研究所，招收碩士班研究生，為技職體系首度成立的光電研究所，培育光電科技研發人才。2001 年 8 月在人文科學院成立光電科技系，設有二技部，培育光電科技實務人才。2002 年 8 月，光電科技系改隸於機電學院， 系所合一，共享師資與設備。2003 年 8 月，光電科技系改名為光電工程系。2004 年 8 月，光電技術研究所改名為光電工程系碩士班，同年教育部核定設立光電工程系博士班，使本系成為技職體系當時唯一具有大學部、碩士班、博士班完整學制的光電系所，同時培育光電科技領域的實務與研發之專業人才。2007 年 8 月電資學院成立，光電工程系改隸於電資學院。

本系所秉持充實光電理論基礎、研習光電應用技術、培育實用光電技術人才，以配合產業界需求為宗旨。目前本系專任教師計 20 名及 2 名專案教師，其研究專長涵蓋光通訊、平面顯示器、光學工程、光電材料與元件等光電重要領域：

一、光通訊

光通訊領域主要專注於光纖接取網路、半導體光電元件與光電訊號處理之研究。其中主題包括微波光纖通訊/無線通訊整合傳輸系統、可見光通訊系統、光纖微波傳輸系統、分波多工被動光纖網路、光纖有線電視系統、長波長單光子元件與應用、全光訊號處理、多重服務光接取網路。

二、顯示科技

本研究群主要研究液晶顯示器、雷射投影、以及有機發光元件等相關技術，探討關鍵零組件之光電與物理特性，改良現有顯示器的顯示品質以及開發新穎的顯示模式，也與現有的顯示產業合作，來研發有價值的專利與技術，另外也預測顯示產業的發展趨勢。

三、光學工程

「光學工程」學群是利用幾何光學、波動光學、近場光學、及量子光學等光學理

論來研究、開發各式先進光學系統，其中之技術包含生醫光電系統設計、奈米薄膜研製、光電材料量測、光資訊處理、與新穎雷射研發，本研究群積極提供台灣光電產業所需「光學技術」的諮詢服務。

四、光電材料與元件

本領域主要研究方向為研發新穎的三元及四元化合物、發光二極體(LED)、太陽能電池、積體光學元件、單光子偵測元件、光電材料薄膜及奈米結構，研究內容包含各種材料摻雜之研究、元件結構設計與構裝、及元件的製程與應用。

6.2 研發與產學合作計畫

科技部、政府部門計畫

本系對於學術研究亦極為重視，累積之研究成果，自民國 98 年至 102 年統計如下：

表 7.2-1 光電系歷年研究計畫件數

年度	99 年	100 年	101 年	102 年	103 年
件數	24	20	16	21	29

資料來源：本校教師評鑑及基本資料庫系統

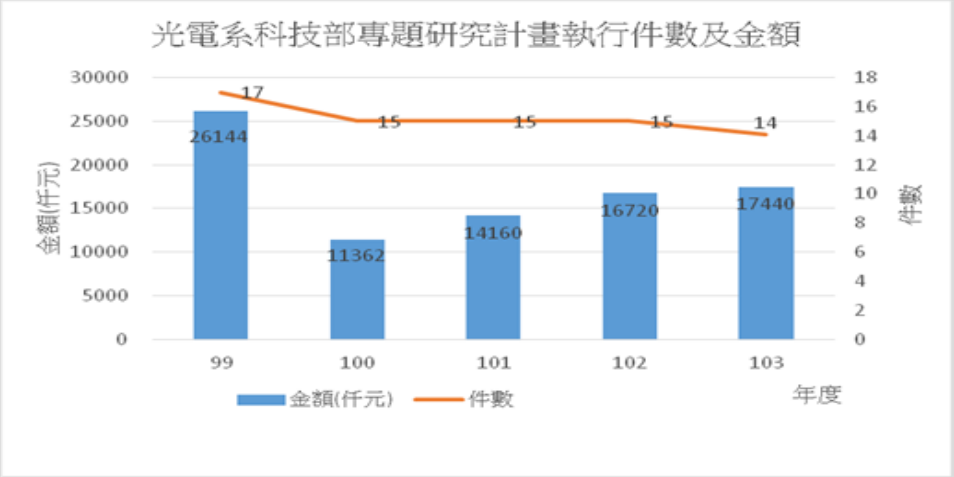


圖 7.2-1 光電系科技部專題研究計畫執行件數及金額

圖 7.2-1 為本系 98 年至 102 年執行科技部專題研究計畫件數與金額統計表，由表中顯示本系近年執行件數維持穩定發展。又從表 7.2-2，可知光電系 20 位專任教師，其平均之研究成果如該表所示，逐步成長及發展。

另本系之產學合作計畫，亦有穩定發展，民國 103 年更達到平均每位教師有 0.38

件產學合作計畫，平均每人金額 150.48 仟元。

表 7.2-2 光電系歷年研發成果人均值

	SCI 論文	專利	技轉		國科會計畫		產學合作計畫	
人均值	篇數	件數	件數	金額（千元）	件數	金額（千元）	件數	金額（千元）
99 年（19 人）	2.4	0.26	0.16	8.23	0.68	1376	0.21	191
100 年（19 人）	2.7	0.4	0.1	33.7	0.75	598	0.25	116
101 年（20 人）	2.4	0.3	0.05	25	0.75	708	0.05	50
102 年（20 人）	2.1	0.55	0.15	30.7	0.75	821	0.15	96.5
103 年（21 人）	2.62	0.33	0.24	80.5	0.67	830.48	0.38	150.48

專利及技術轉移

由表 7.2-2 可知，本系專利平均每人擁有 0.5 個專利在案，民國 91 年迄今，本系教師計申請專利 103 件，美國有 22 件，台灣 73 件，其他 8 件。其中已核准者計 68 件，申請中 35 件。

技術轉移由表 7.2-2 可知，本系每年皆有技術移轉之研發成果，103 年更達到平均每人技轉金額 80.5 仟元。

6.3 論文與作品發表

本系對於教師之學術研究相當重視，鼓勵教師發表研究論文，民國 99 年至 103 年本系教師所發表 SCI 論文篇數統計如圖 7.2-2 顯示。

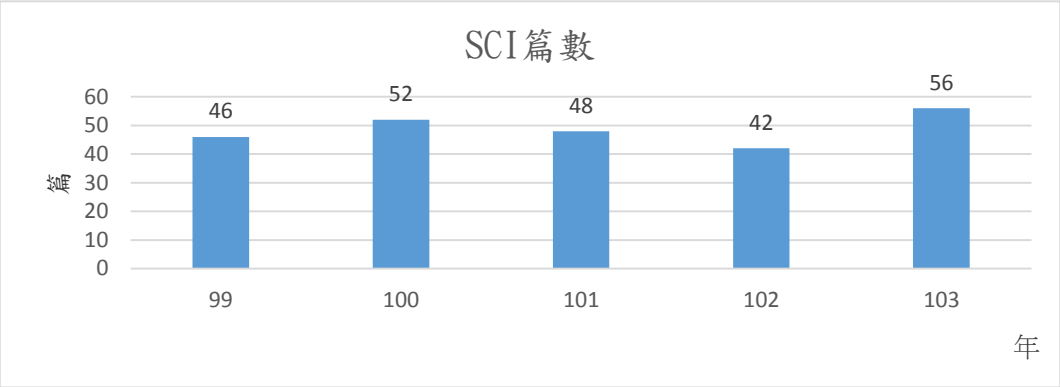


圖 7.2-2 光電系 SCI 論文篇數

本系 20 位專任教師每年所發表 SCI 文章約 50 篇左右，而執行研究計畫數約 20 個左右。尤其近年來研究論文品質提升許多，以光學期刊名列前茅的 Optics Letters 以及 Optics Express 而言，本系老師的發表量是逐年上升，由 99 年的 8 篇攀升到 101 年的 11 篇，本系任貽均老師研究群於 2011 年更於 nature communications 發表 Bo-inspired achromatic waveplate 文章，使得當期 nature publishing group 針對台灣研究機構發表的排名，本校(北科大)排名全國第四。

6.4 獎項與榮譽

本系教師在學術研究上之努力與表現，獲得許多學術上的獎勵，本系教師於 98 年至 104 年間所獲學術獎勵如下表 7.4-1 所示。另本系所聘國際講座教授吳詩聰教授，於 102 年榮獲美國發明家院士，而 Akhlesh Lakhtakia 教授亦於 102 年榮獲美國物理學會會士等傑出殊榮。

表 7.4-1 98 年至 104 年間本系教師獲得學術獎勵統計表

年度	教師	獲獎名稱	頒獎國別	頒獎機構
104	何文章	2015 International Conference on Applied System Innovation 之 2015 Best conference paper award	日本	2015 International Conference on Applied System Innovation
104	李穎玟	電資學院 104 年度傑出研究獎	台灣	本校電資學院
104	林家弘	電資學院 104 年度傑出研究獎	台灣	本校電資學院
103	林家弘	Dr. Shechtman 年輕學者研究獎	台灣	本校
103	呂海涵	SPIE Fellow	美國	Society of Photo-Optical Instrumentation Engineers (SPIE)
103	任貽均	SPIE Fellow	美國	Society of Photo-Optical Instrumentation Engineers

				(SPIE)
103	陳隆建	OSA Senior Member	美國	Optical Society of America（OSA）
102	呂海涵	傑出工程教授獎	台灣	中國工程師學會
102	徐巍峰	論文榮獲 Journal of Optics 期刊年度 highlight papers	美/英	Journal of Optics
101	彭朋群	Dr. Shechtman 年輕學者研究獎	台灣	本校
101	陳隆建	電資學院傑出研究獎	台灣	本校電資學院
101	彭朋群	電資學院傑出研究獎	台灣	本校電資學院
101	林家弘	電資學院 101 年度傑出研究獎	台灣	本校電資學院
101	彭朋群	電資學院 101 年度傑出研究獎	台灣	本校電資學院
101	林世聰	「2011 第三屆 i-ONE 國際儀器科技創新獎」入圍獎	台灣	儀科中心
101	林世聰	「2011 半導體與光電檢測暨精密機械與光機電專題競賽」金牌獎	台灣	台灣科技大學
101	陳建銘	2012 IIIC 第三屆國際創新發明大會』海報競賽金牌獎	台灣	中華發明創新學會
101	陳建銘	2012 IIIC 第三屆國際創新發明大會』海報競賽金牌獎	台灣	中華發明創新學會
101	陳建銘	2012 IIIC 第三屆國際創新發明大會論文甄選優等	台灣	中華發明創新學會
100	任貽均	特聘教授	台灣	本校
100	陳隆建	電資學院 100 年度傑出研究獎	台灣	本校電資學院
100	彭朋群	電資學院 100 年度傑出研究獎	台灣	本校電資學院
99	任貽均	指導博士班學生林孟頡參加 2010 SPIE Optics and Photonics 研討會榮獲 Best Presentation Award	美國	SPIE Optics and Photonics
99	陳隆建	電資學院 99 年度傑出研究獎	台灣	本校電資學院
98	呂海涵	IET Fellow (2009)	英國	The Institution of Engineering and Technology
98	任貽均	SPIE Senior member	美國	Society of Photo-Optical Instrumentation Engineers (SPIE)
98	任貽均	98 年校傑出研究獎	台灣	本校
98	陳隆建	電資學院 98 年度傑出研究獎	台灣	本校電資學院
98	彭朋群	電資學院 98 年傑出研究獎	台灣	本校電資學院

柒、 未來發展與策略

1、中程發展策略與方案

（1）教學

A. 推動「工程及科技教育認證」

「工程及科技教育認證」是國際間大學工程教育的新趨勢，通過認證學系之畢業生，憑此優勢擴大就業市場，並具備直接考取他國工程師執照與執業的資格。本院 103 年全院各系均順利通過「工程及科技教育認證」，未來持續推動工程認證，依各系所特色設定之教育目標進行教學，持續改善教育品質。

B. 建立「院級共同教學實驗室」

為提升基礎實習教學環境，本院擬針對全院大學部共同之基礎實習課程，如微算機與邏輯設計、電子電路、通訊與訊號處理等，建立「院級共同教學實驗室」，以求空間與設備等資源的有效運用。

C. 培養具有創造力的科技領袖

為培育出類拔萃的領導人才，除專業技能知識外，本院將持續注重並加強學生人文與通識素養，包括職場倫理與生活修養，培養同學終身學習的習慣，以便將來成為社會上的「好公民」，具備科技領袖的胸襟與視野。

D. 推動學生校外實習

大學部及研究所皆強力推動，期可以達到全部學生皆能前往校外實習，以達到學理與實務之結合。

（2）研究

A. 提升與擴充研究生的質與量

在整體學生人數大致不變的前提下，適當調整研究所與大學部學生人數，研究所人數逐年略加擴充，並希望進一步著重素質的提升。

B. 延攬國內外知名教授

藉由知名教授的加入，帶動本院教師研究風氣，成立跨系所領域之研究團隊，帶領年輕教師從事學術研究，提昇學術研究質量，爭取更多研究經費。

C. 舉辦本院教師年度研究成果發表會

以教師年度研究成果發表會等方式，透過研究成果的分享，促進院內教師間的溝通與了解，建立相互合作之基礎。本項成果發表會亦可與國際學校合作舉辦。

D. 發展典範科技大學

民國 101 年本校獲得教育部典範科技大學第一名,其中數位匯流技術、網路通訊技術、雲端技術、與 LED 皆為本院發展重點之一。本院將持續投入其他，如車載資通訊、微電網…等技術，成為科技大學之典範。

（3）產學及校友合作

A. 技術行銷及合作成果推廣，加強與校友連繫合作

透過校友服務組織，建立與校友長期互動管道，強化並回饋參與合作之校友。配合本校校友服務之行政體系建立校友入口網站，建立雙向溝通平台，積極行銷本院教師研發技術。並將合作之成果則透過文宣及推廣活動進行宣傳，創造擴散機會。

B. 透過校友體系，強化學生實習計畫

透過校友組織提供在校學生夜間或寒暑假實習計畫，以加強學生在校所學，使其能夠與未來就業技能相互結合。除了深化系所與校友之間的互動，也讓學生瞭解就業後的工作模式與職場需求。

（4）國際交流與合作

A. 提昇學生之英文能力

在校方對大學部畢業要求為全民英檢初級的基礎上，推動研究所英文能力提升，如增加英文課程、推動國際交流、訂定碩博士生畢業英文門檻等。

B. 逐步規劃國際學程與雙聯學制

本學院於 96 學年成立甘比亞電資專班，並於 98 學年成立「電資國際研究所學位學程」,主要招收東南亞、東歐等地學生，目前規劃的核心課程包含通訊、控制與訊號處理三類。雙聯學制部分，目前規劃 3+2 與 3.5+1.5 學程，是指學生在 3 或 3.5 年修讀本校大學部課程，在 2 或 1.5 年修讀國外碩士班課程，最後學生可取得本校學士學位與國外大學碩士學位。

2、長程發展策略與方案

（1） 教學

A. 推動全院課程整合

電資產業不斷推陳出新，唯有具備紮實之基礎知識與專業能力，方能因應產業的迅速變遷與需求。本院各系同質性高，將大一大二相近學系合併為群組的作法，訂定全院大一大二共同基礎課程，之後再依專長分流，以統合全院資源，並兼顧專業課程的廣度與深度。目前學院之電資學士班已經在試行這樣的學程。

B. 推動跨領域學程

高科技重要趨勢為跨領域技術整合，整合跨領域的訓練與研究。本院目前已有半導體科技、光電科技、與軟體工程等學程，未來將視需要新設或整併學程，提高學程選讀的吸引力，以培養本院及其它學院學生第二專長，提升其就業競爭力。

C. 擴大國際學程，提升師生視野

開授全英語授課國際學程，招收國外優秀學生至本院就讀，並鼓勵本院師生，與國外知名學府交流。

（2） 研究

A. 發展特色研究

東京工業大學有特殊的教研單位，例如理工研究學院底下設有獨立的「影像工程實驗室」與其他研究所並列，彰顯東工大在此課題的前瞻與卓越。我們亦可參考這樣的作法，突顯本院的特色研究領域。

B. 協助教師獲得國內外研究獎項或獲選為國際學會會士

成立諮詢與推薦機制，以協助本院優秀教師獲得國內外研究獎項或獲選為國際學會會士。

（3） 產學及校友合作

A. 建置技術交換平台

持續推廣產學合作，建置並維護研發人員與技術資料庫，匯集本院教師及研發團隊研究專長、研發成果、實驗室設備及技術服務能量等資料，提供產學合作全方位諮詢服務。

B. 媒合交流、推動產學社群

選定特定技術領域籌組產學社群，定期舉辦媒合交流會，提供研發團隊與產業界經驗交換、意見溝通的場合，藉以激發與創新理念與促成合作之機會。

C. 鼓勵創設公司，開發校外資源

以學校育成中心為平台，師生與產業合作，創設商業公司，落實研發技術，並擴大學校與學院研發資源。

（4） 國際交流與合作

除了校方的國際交換學生外，學院亦與國外學校相關系院洽談合作，交換學生及教師出國研究參訪。並以國際校際雙聯學制為目標，建立實質之學生交互修課與雙學位取得的制度，以提昇本院師生國際視野及外語能力。本學院亦將積極參與國際學校及研究機構之實質合作，並持續擴大國際研究生學程。

捌、 全院各項總合資料統計圖

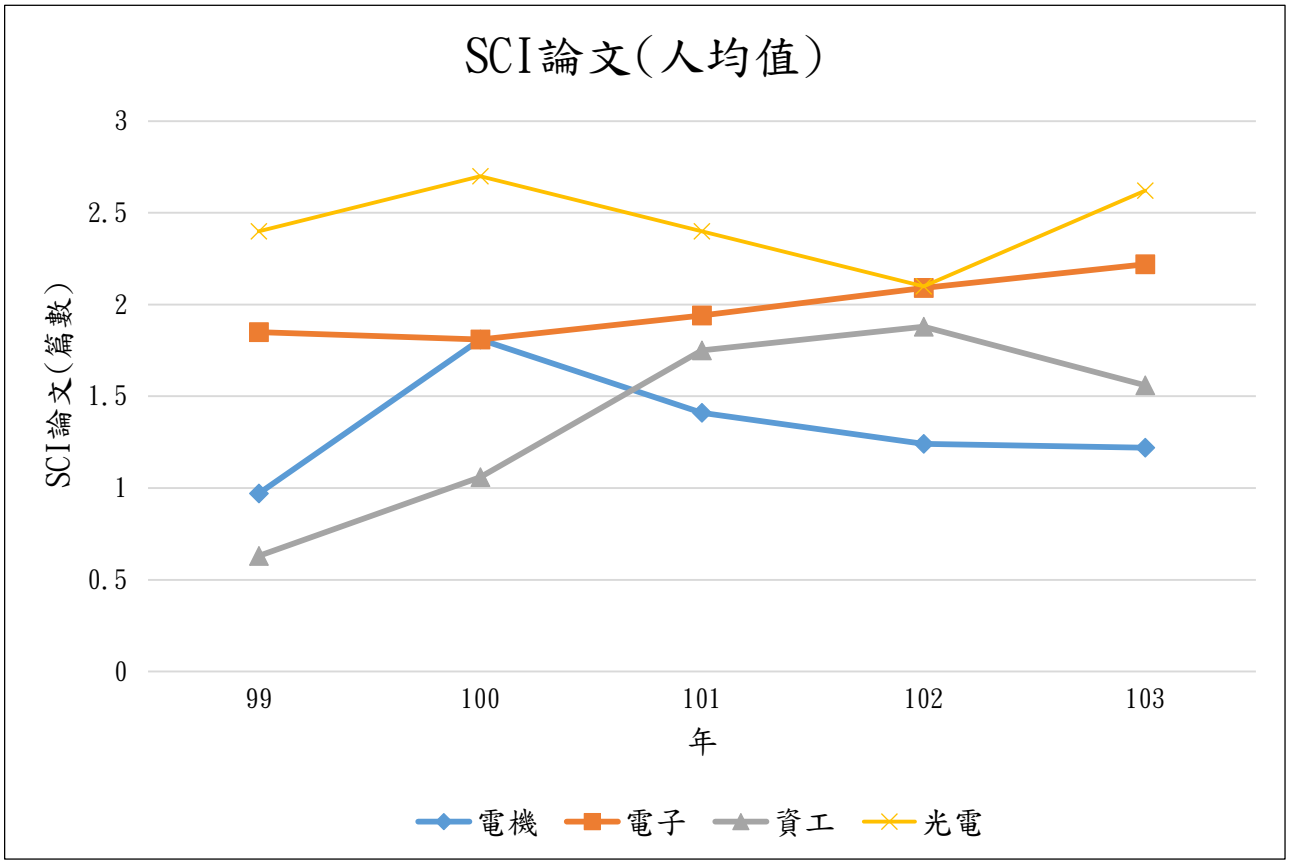


圖 1 99-103 年度 SCI 論文統計圖

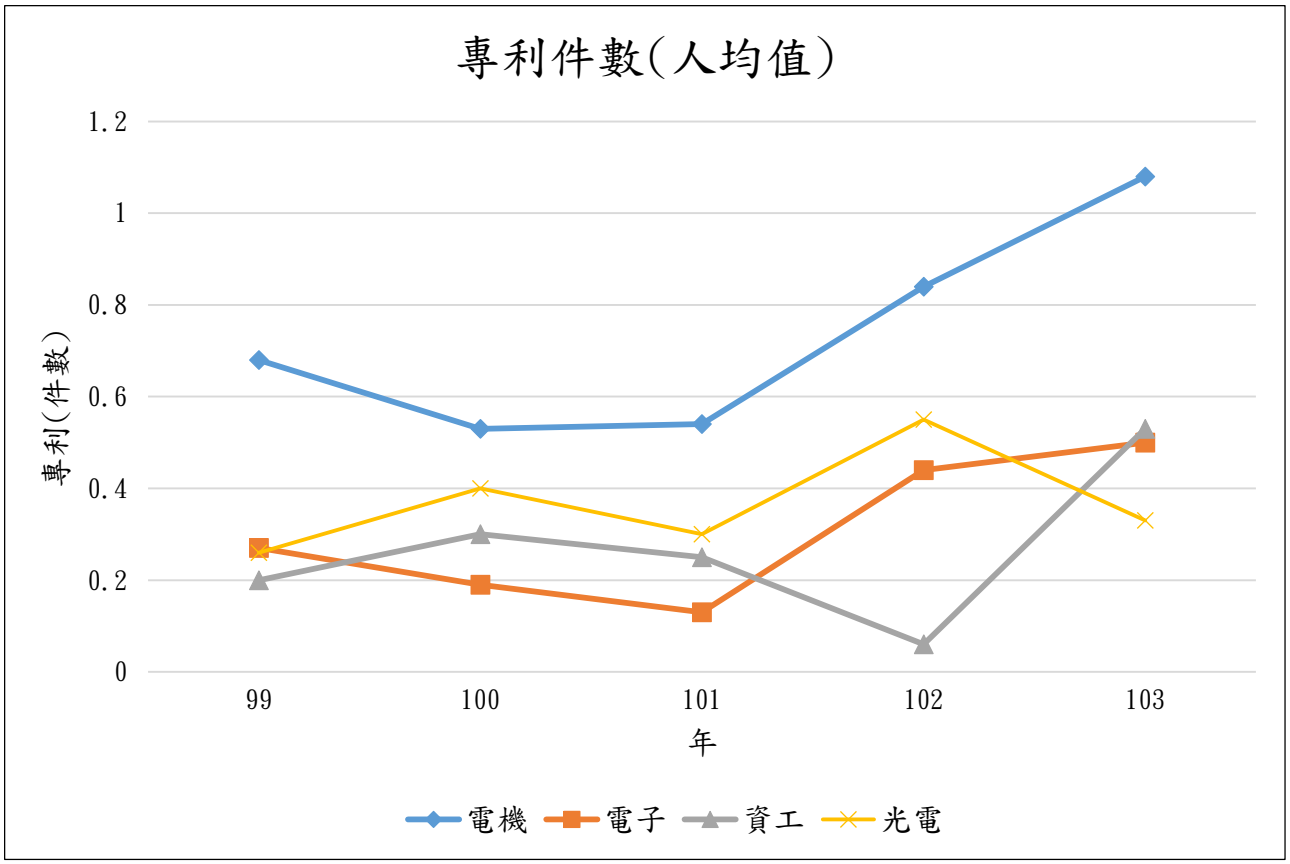


圖 2 99-103 年度專利平均件數統計圖

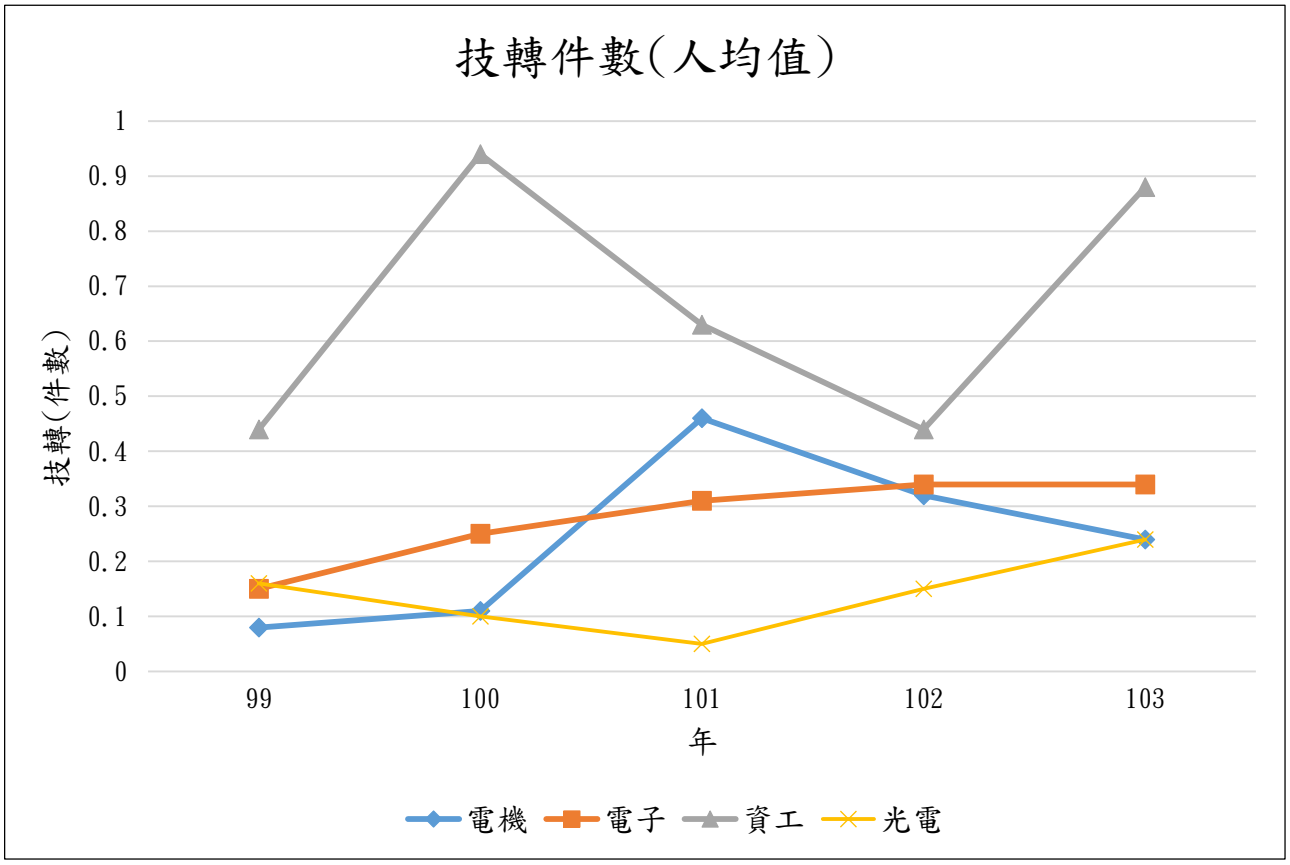


圖 3　99-103 年度技轉平均件數統計圖

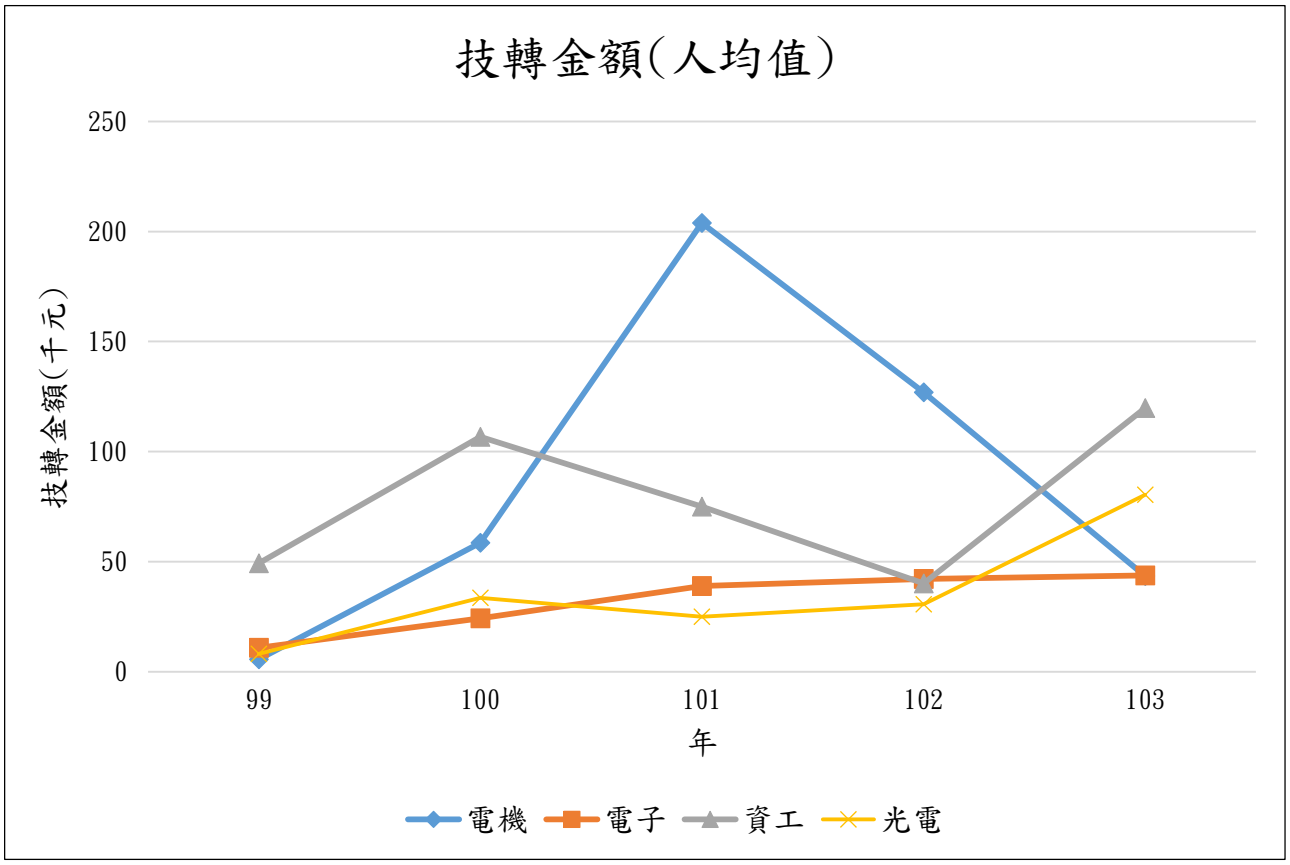


圖 4　99-103 年度技轉平均金額統計圖

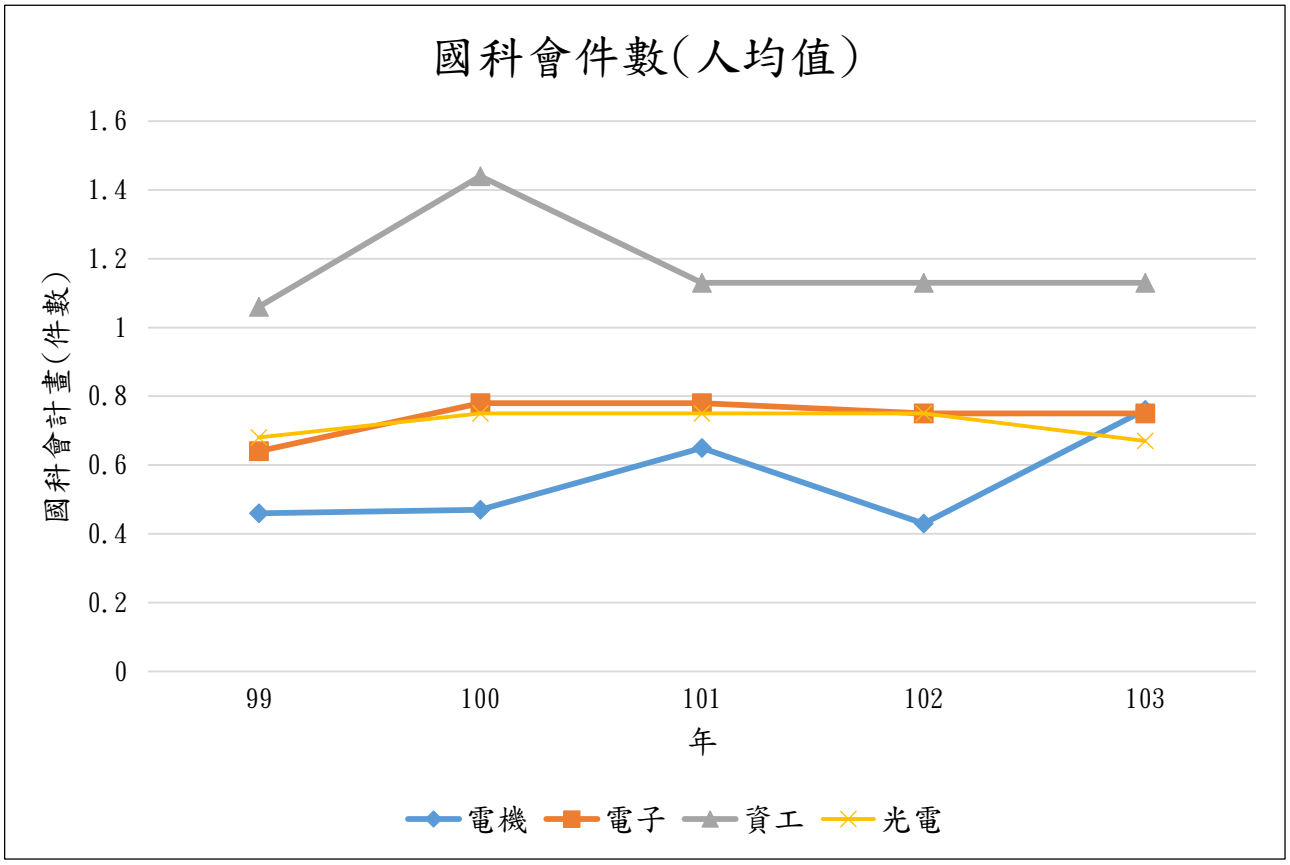


圖 5　99-103 年度國科會平均件數統計圖

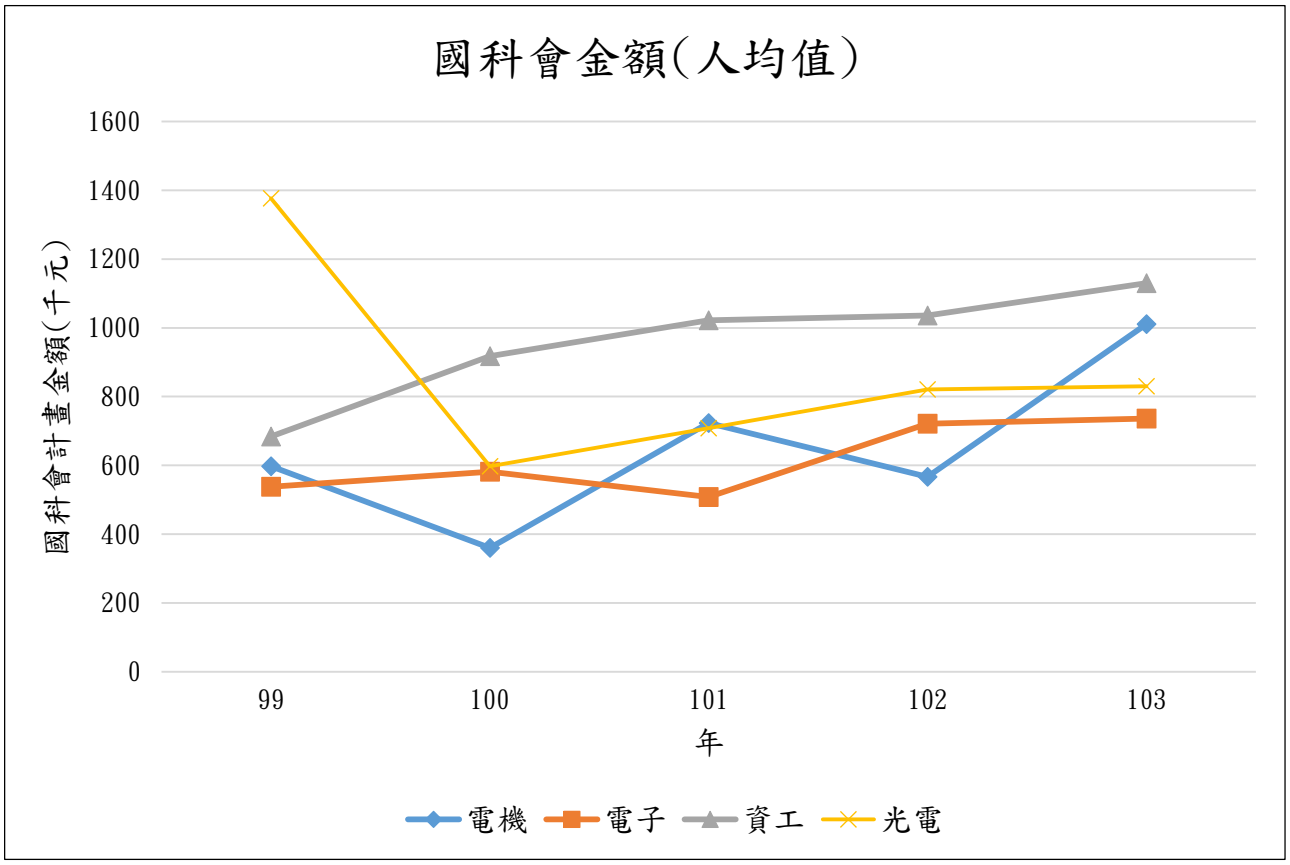


圖 6　99-103 年度國科會平均金額統計圖

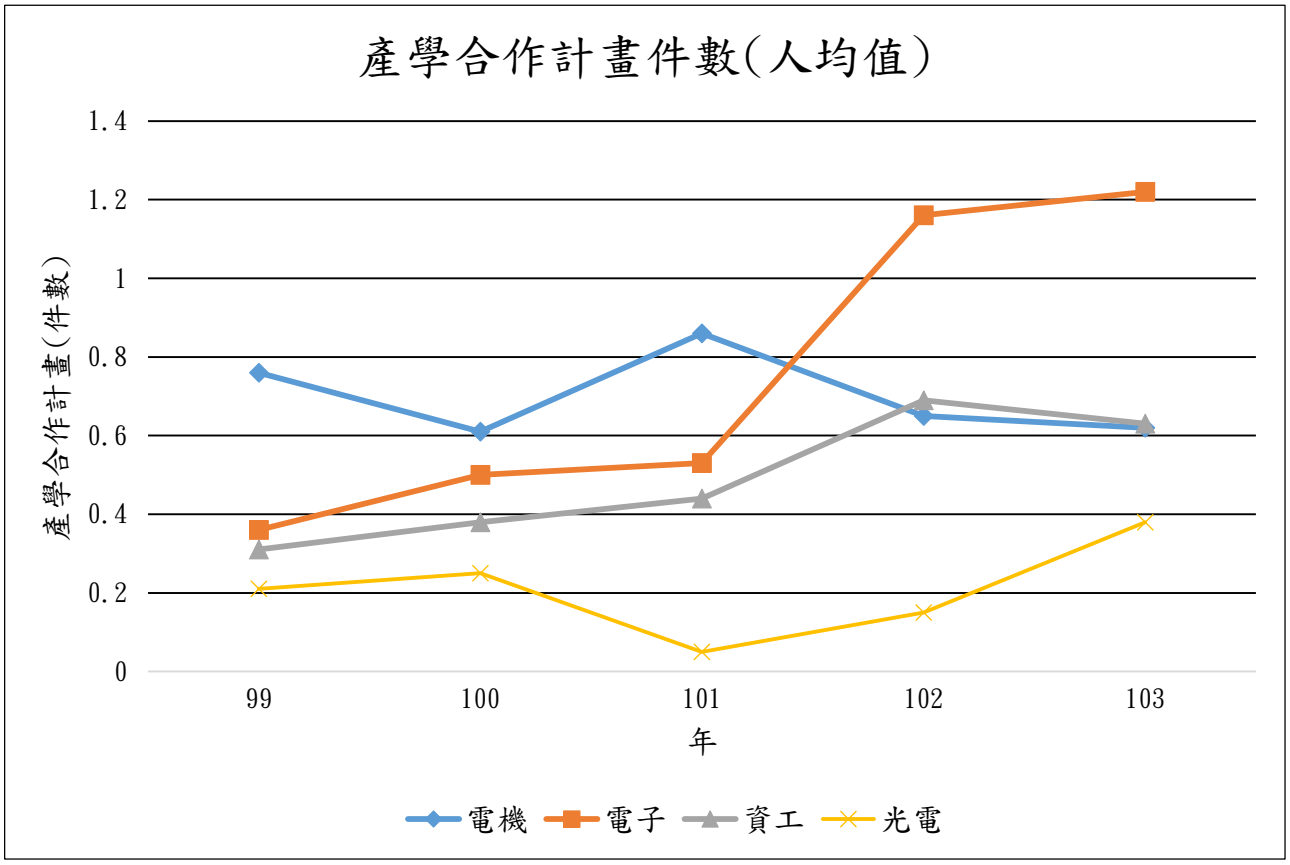


圖 7　99-103 年度產學合作計畫平均件數統計圖

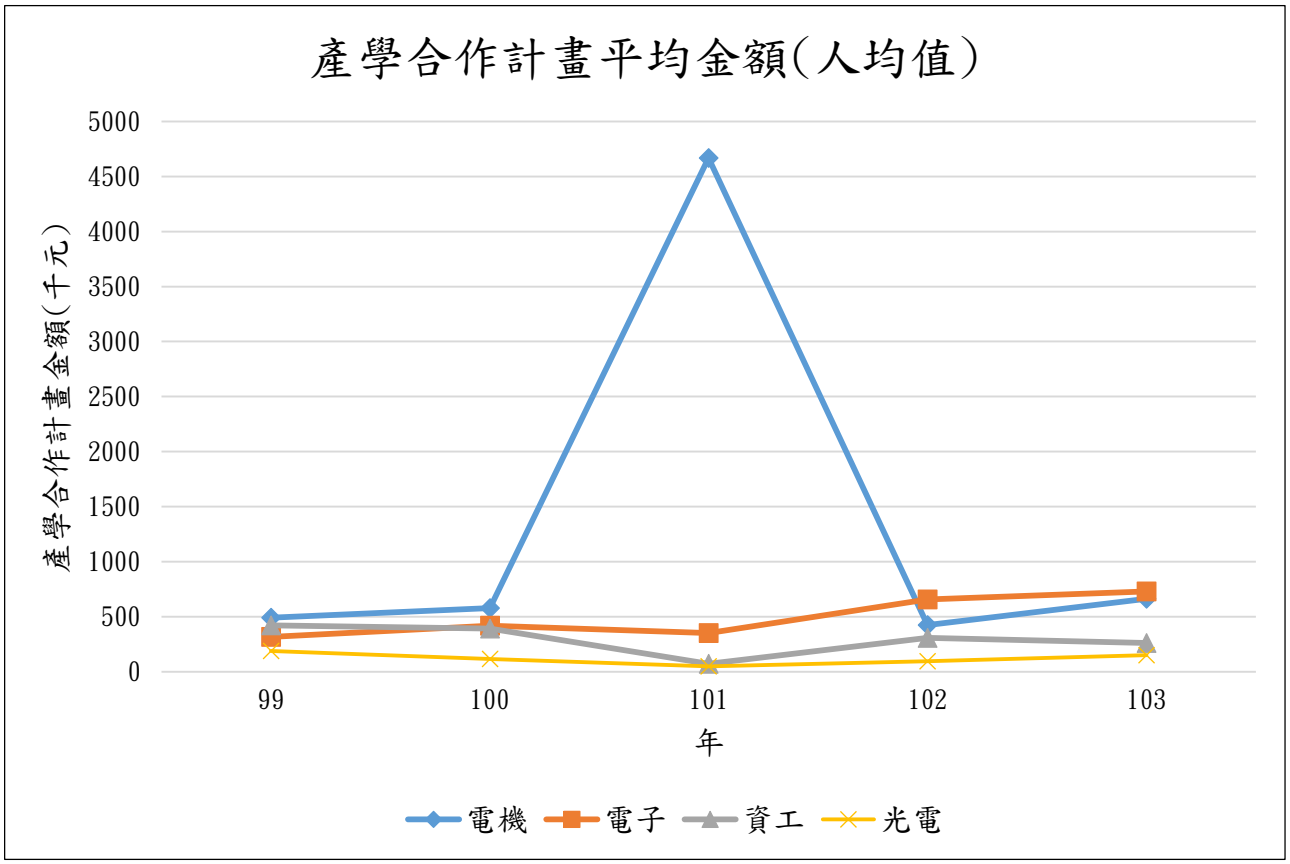


圖 8　99-103 年度產學合作計畫平均金額統計圖

玖、 各系所教師研發人才庫

9.1 電機工程系

姚立德 教授 *Leehter Yao*

實驗室名稱：智慧型控制實驗室 Intelligent Control Laboratory

聯絡電話：02-2771-2171 #2174

E-mail：ltyao@ntut.edu.tw

網址：http://140.124.41.229/cms/cmsimplexh/

研究聚焦領域：□H 健康科技■ I 智慧整合科技■ G 綠色科技□ H 人文與創新元素

專長領域：智慧型控制、三 C 整合、能源監控

近年重要論文及著述

(a)期刊論文

1. L. Yao and Hao-Ren Lu, "A two-way direct control of central air-conditioning load via Internet," IEEE Trans. Power Delivery, vol. 24, no. 1, pp. 240-248, Jan. 2009.
2. L. Yao and Chin-chin Lin, "Identification of nonlinear systems by the genetic programming based Volterra filter," IET Signal Processing, vol. 3, no. 2, pp. 93-105, 2009.
3. L. Yao, J.-K. Huang and Y.-H. Chen, "Write strategy learning for optical dye recording, " IEEE/ASME Trans. Mechatronics, vol. 24, no. 5, pp. 555-563, Oct. 2009.
4. R.-W. Chang and L. Yao, "Clustering of incomplete data based on ellipsoids with adaptive volumes, " ICIC Express Letters, vol. 3, no. 4, pp. 1037-1042, Dec. 2009.
5. K.-S. Weng and L. Yao, "Fuzzy modeling based on self learning of adaptive ellipsoids, " ICIC Express Letters, vol. 3, no. 4, pp. 1043-1048, Dec. 2009.
6. L. Yao and Chin-chin Lin, "On a genetic algorithm based gain scheduled fuzzy PID controller," Int. Journal of Innovative Computing, Information and Control, vol. 5, no. 10, pp. 3593-3602, Oct. 2009.
7. L. Yao and Yuan-Shiu Chen, "A type-2 fuzzy controller for automatic guided vehicle wall following control," ICIC Express Letters Part-B: Applications, vol. 1, no. 1, pp. 77-83, Sep. 2010.
8. L. Yao and Y.-S. Chen, "Type-2 fuzzy control of an automatic guided vehicle for wall following," Book Chapter in Fuzzy Controllers, Theory and Applications, edited by Lucian Grigorie, Chap. 13, pp. 243-252, Feb. 2011.
9. L. Yao, Yin-Chieh Chou, and Chin-Chin Lin, "Scheduling of direct load control using genetic programming," Int. Journal of Innovative Computing, Information and Control, vol. 7, no. 5, pp. 2515-2528, May 2011.
10. L. Yao and T.-Y. Pan, "Feature selection and classification of SELDI-TOF mass spectra

of hepatoma using gene weighted Genetic Algorithm," Int. Journal of Innovative Computing, Information and Control, vol. 8, no. 1, pp. 989-1000, Jan. 2012.
11. L. Yao and H.-K. Wen, "Design of observer based adaptive PID controller for nonlinear system, " Int. Journal of Innovative Computing, Information and Control, vol. 9, no. 2, pp. 667-677, Feb. 2013.
12. L. Yao and K.-S. Weng, "Combined probabilistic and possibilistic approach to a type-2 fuzzy clustering algorithm model," Applied Mechanics and Materials, vol. 284, pp. 3060-3069, 2013.
13. T. S. Tsai and L. Yao, "An Approach to Calculating Rainfall for Each Transmission Tower in Geographic Information System," Int. Proc. of Chemical, Biological and Environmental Engineering, vol. 52, pp. 45-49, Jul. 2013.
14. T. B. Lin and L. Yao, "A Real Time Lightning Locating Approach for the Transmission System in Geographic Information System," Int. Proc. of Chemical, Biological and Environmental Engineering, vol. 52, pp. 50-54, Jul. 2013.
15. "Learning decision regions based on adaptive ellipsoids", International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, pp. 41-73, 2014/2/1
16. "Precipitation estimation at the site of transmission tower using geographic information system", Advanced Materials Research, pp. 3869-3874, 2014/6/1
17. "Identification of high risk feature regions for transmission towers", Advanced Materials Research, pp. 4104-4109, 2014/6/1

(b)研討會論文

1. L. Yao, C.-K. Huang, and Y.-H. Chen, “Write strategy optimization for optical disc recording, ” in *Proc. IEEE Int. Conf. Consumer Electronics,* Las Vegas, NV, Jan. 10-14, 2009, pp. 1.3-2.1.
2. L. Yao, K.-S. Weng, and R.-W. Chang, “Fuzzy Classification of Incomplete Data with Adaptive Volume,” in *Proc. 2009 Asian Conf. Intelligent Information and Database,* Quang Binh, Vietnam, Apr. 1-3, 2009, pp. S4C.3.1- S4C.3.6.
3. L. Yao, K.-S. Weng, and R.-W. Chang, “A fuzzy classifier with directed initialization adaptive learning of norm inducing matrix,” in *Proc. 2009 Asian Conf. Intelligent Information and Database,* Quang Binh, Vietnam, Apr. 1-3, 2009, pp. S4C.4.1- S4C.4.6.
4. R.-W. Chang and L. Yao, “Clustering of incomplete data based on ellipsoids with adaptive volumes, ” in *Proc.* 2009 *Int. Symp. Intelligent Informatics,* QinHuangDao, China, Sep. 13-15, 2009, pp. 1037-1042.
5. K.-S. Weng and L. Yao, “Fuzzy modeling based on self learning of adaptive ellipsoids,” in *Proc.* 2009 *Int. Symp. Intelligent Informatics,* Qin Huang Dao, China, Sep. 13-15, 2009, pp. 1043-1048.

6. H. S. Yang, J. S. Chen and L. Yao, “A Navigation System Based on Real-Time Visual Localization and Mapping,”in *Proc. Int. Automatic Control Conf. Autonomous/ Intelligent Robot*s, Taipei, Taiwan, Nov. 27-29, 2009, pp. SuA10. 1-6.
7. C. C. Lin, S. S. Xue, and L. Yao, “Position Calculating and Path Tracking of Three Dimensional Location System based on Different Wave Velocities, ” in *Proc.The 8th Int. Conf. Pervasive Intelligence and Computing*, Chengdu, China, Dec. 12-14, 2009, pp. 436-441.
8. W. J. Pan, C. C. Lin, and L. Yao, “Adaptive Fuzzy Control with Modulated Membership Function Applies to Path Tracking Based on Location System, ” in *Proc. The 8th International Conference on Pervasive Intelligence and Computing (PICOM 2009*), Chengdu, China, Dec. 12-14, 2009, pp. 215-220.
9. Y. C. Chou and L. Yao, “Automatic Diagnostic System of Electrical Equipment using Infrared Thermography,” in *Proc. 2009 Int. Conf. Soft Computing and Pattern Recognition*, Malacca, Malaysia, Dec. 4-7, 2009, pp. 155-160.
10. Y. S. Chen and L. Yao, “Robust Type-2 Fuzzy Control of an Automatic Guided Vehicle for Wall-Following, ” in *Proc. 2009 Int. Conf. Soft Computing and Pattern Recognition*, Malacca, Malaysia, Dec. 4-7, 2009, pp. 172-177.
11. L. Yao and W.-J. Pan, “Fuzzy Adaptive Controller with Modulated Membership Function for a MIMO Uncertain Nonlinear System,” in *Proc. Int. Conf. Innovative Computing, Information and Control*, Kaohsiung, Taiwan, Dec. 7-9, 2009, B10-09.1-6.
12. L. Yao and K. -L. Lim, “Design of Adaptive Fuzzy PID Controller for Nonlinear System,” in *Proc. Int. Conf. Innovative Computing, Information and Control*, Kaohsiung, Taiwan, Dec. 7-9, 2009, B12-09.1-6.
13. L. Yao and T.-Y. Pan, “Feature Selection and Classification of SELDI-TOF Mass Spectra of Hepatoma Using Gene-weighted Genetic Algorithm, ” in *Proc. 23 Annual Conf. of Biomedical Fuzzy Association*, Kitakyushu, Japan, Oct. 9-10, 2010, pp. 267-272.
14. L. Yao and H.-K. Wen, “An Observer based adaptive PID controller, ” in *Proc. Int. Conf. Modeling, Identification, and Control*, Shanghai, China, Jun. 26-29, 2011, pp. TueB03.5.1-6.
15. L. Yao and J.-N. Jiang, “Design of adaptive fuzzy controller with observer using modulated membership function, ” in *Proc. Int. Conf. Modeling, Identification, and Control*, Shanghai, China, Jun. 26-29, 2011, pp. TueB03.4.1-6.
16. C. Liu, L. Yao, T. Chen, T. Lin and W. Wang, “Fault diagnosis for power transformers based on hybrid fuzzy dissolved gas analysis,” in *Proc. 2011 Eighth Int. Conf. Fuzzy Systems and Knowledge Discovery*, Shanghai, China, Jul. 26-28, 2011, pp. 857-861.
17. Y.-C. Chou and L. Yao, “Adaptive Fuzzy Sliding-Mode Controller with Gaussian Modulated Membership Function on Tracking Trajectory,” in *Proc. 2012 IEEE/ASME*

Int. Conf. Advanced Intelligent Mechatronics, Kaohsiung, Taiwan, Jul. 11-14, 2012, pp. 1017-1022.

18. L. Yao and K.-S. Weng, "A type-2 fuzzy clustering algorithm, " in *Proc. The Fourth International Conf. Pervasive Patterns and Applications, Patterns 2012,* Nice, France, Jul. 22-27, 2012, pp. 45-50.
19. C.-H. Liu, L. Yao, T.-B. Lin and S.-Y. Wang, "Innovated fault diagnosis for power transformer using hybrid fuzzy dissolved gas analysis, " in *Proc. Int. Conf. Engineering and Technology Innovation, ICETI 2012,* Kaohsiung, Taiwan, Nov. 2-6, 2012, pp. C1038.1-4.
20. L. Yao and K.-S. Weng, "Combined probabilistic and possibilistic membership functions for a type-2 fuzzy clustering algorithm model," in *Proc. Int. Conf. Engineering and Technology Innovation, ICETI 2012,* Kaohsiung, Taiwan, Nov. 2-6, 2012, pp. N1020.1-4.
21. T. S. Tsai and L. Yao, "An approach to calculating rainfall for each transmission tower in geographic information system," in *Proc. Int. Conf. on Geological and Environmental Sciences (ICGES),* Hong Kong, vol. 52, pp. 45-49, Jul. 2013.
22. T. B. Lin and L. Yao, "A real Time lightning locating approach for the transmission system in geographic information system, " in *Proc. Int. Conf. on Geological and Environmental Sciences (ICGES),* Hong Kong, vol. 52, pp. 50-54, Jul. 2013.
23. 顏志丞、姚立德，陳志宏，配電網絡停電及故障檢測系統之研製，中華民國第二十九屆電力工程研討會，台灣台南，12 月 5-6 日，2008 年，pp.959-963。
24. 楊懷新、姚立德，即時影像定位和建立地圖，2009 中華民國系統科學與工程會議，台灣台北，6 月 25-26 日，2009 年，pp. A154-159。
25. 朱宴良、姚立德，基於影像之多部自動導航車隊形維持控制，2009 中華民國系統科學與工程會議，台灣台北，6 月 25-26 日，2009 年，pp. C1058-1063。
26. 劉基墩、姚立德，智慧型 3D 遙控器之設計，2009 中華民國系統科學與工程會議，台灣台北，6 月 25-26 日，2009 年，pp. C1076-1081。
27. 姚立德、林桐斌，變電設備維護管理系統之資產管理與設備維護，中華民國第三十屆電力工程研討會，台灣桃園，11 月 28-29 日，2009 年，pp. O008.1-5。
28. 朱建銘、姚立德，基於寬幅調變之適應性模糊滑動模式控制器應用於非完整約束輪型機器人之研究，中華民國第六屆智慧生活科技研討會，6 月 3 日，2011 年.
29. 陳泰利、黃僅仁、劉至瑄、姚立德，"變壓器油中氣體分析系統之設計及資料探勘技術於油中氣體分析之應用," 中華民國第三十二屆電力工程研討會論文集, 臺灣新北市, 12 月 2-3 日, 2011 年，pp. 12-16 。

30. 姚立德、徐維遠、陳治璿，“中央空調系統之最佳化卸載控制,”中華民國第三十二屆電力工程研討會論文集, 臺灣新北市, 12 月 2-3 日, 2011 年, pp. 7-11。
31. 邱志明、何恭宇、姚立德，“基於異波速測距之無線三維定位系統”，中華民國系統科學與工程研討會，臺灣南投，6 月 17-18 日，2011 年，pp. 0315.1-5。
32. 林志駿、何恭宇、姚立德，基於室內定位系統之自動導航車路徑追隨控制，中華民國系統科學與工程研討會，臺灣南投，6 月 17-18 日，2011 年，pp. 0125.1-5。
33. 陳億謙、姚立德，“主動噪音控制於配電變壓器噪音抑制之應用”，中華民國系統科學與工程研討會，臺灣南投，6 月 17-18 日，2011 年，pp. 0215.1-5。
34. 姚立德、周俊葦、張鈞凱，“行動通訊基地台空調節能系統之研製,”中華民國第二十屆模糊理論及其應用研討會論文集，臺灣臺中市, 11 月 16-18 日, 2012 年, pp. 32-37。
35. 蔡騰仕、姚立德、張榮吉、謝忠翰，“應用於輸電系統之估測降雨量空間內插法”，中華民國第三十三屆電力工程研討會論文集, 臺灣台北, 12 月 7-8 日, 2012 年, pp. 2196-2200。
36. 陳治璿、姚立德，“基於排隊系統模型之磷酸鋰鐵電動車充電需量管理策略”, 中華民國第三十三屆電力工程研討會論文集, 臺灣台北, 12 月 7-8 日, 2012 年, pp. 2283-2288。
37. 王文政、姚立德，“無線感測網路之時間同步策略”，中華民國系統科學與工程研討會論文集，台灣新北市, pp.562-566, 6 月 8-9 日, 2013 年。
38. 姚立德、洪子傑, ”多關節機器魚之運動姿態控制”, 中華民國系統科學與工程研討會論文集，台灣新北市, pp.458-463, 6 月 8-9 日, 2013 年。
39. 黃僅仁、陳治璿、姚立德，“電動車之充電最佳化排程設計”，中華民國系統科學與工程研討會論文集，台灣新北市, pp.525-529, 6 月 8-9 日, 2013 年。

(c)研發與產學合作計畫

1. 輸電設備巡檢及地理圖資環域分析系統之開發, 102.9-104.2
2. 台北科技大學校園節能系統之規劃與建置, 102.7-103.6
3. 適用停車場之電動車智慧型充電管理系統之研製, 102.8-103.7
4. 離心式空調之智慧型節能監控系統技術開發, 102.1-102.12
5. 固態氧化物燃料電池結合吸附製冷之複合系統整合開發, 102.1-102.12
6. 超小型無線傳感器研究, 101.1-101.12
7. 行動通訊基地台空調節能系統之研製(I), 101.1-101.12
8. 電力系統節能策略與減碳研究--總計畫 (3/3) (能源國家型計畫), 101.1-101.12

9. 電力系統節能策略與減碳研究—分項計畫二：具區域節能整合之空調負載節能減碳控制策略研究(3/3), 101.1-101.12
10. 輸電設備維護管理系統之研究, 100.9-102.2
11. 電力系統節能策略與減碳研究--總計畫 (2/3), 100.1-100.12
12. 電力系統節能策略與減碳研究—分項計畫二：具區域節能整合之空調負載節能減碳控制策略研究(2/3), 100.1-100.12
13. 獎助大專校院發展區域三 C 產學聯結績效計畫, 100.1-100.12
14. 智慧型微電網示範系統之規劃、分析、設計與建置-總計劃 (2/3), 100.1-100.12
15. 智慧型微電網示範系統之規劃、分析、設計與建置-分項計畫四：微型電網通訊/控制網路之研製及冷凍空調設備卸載控制之應用 (2/3), 100.1-100.12
16. 智慧型商用節能監控系統研發計畫, 99.7-100.4
17. 基於分類可信度之電力變壓器故障分類器設計, 99.8-102.7
18. 配電設備紅外線熱影像異常自動檢知系統(II), 99.7-100.6
19. 變電設備維護管理系統資料庫整合與專家系統之研究, 99.7-100.12
20. 獎助大專校院發展區域三 C 產學聯結績效計畫, 99.1-99.12
21. WebAccess 為基礎的企業總部節能方案, 99.4-99.11
22. 電力系統節能策略與減碳研究--總計畫 (1/3), 98.11-99.12
23. 電力系統節能策略與減碳研究—分項計畫二：具區域節能整合之空調負載節能減碳控制策略研究(1/3), 98.11-99.12
24. 智慧型微電網示範系統之規劃、分析、設計與建置-總計劃 (1/3), 98.11-99.12
25. 智慧型微電網示範系統之規劃、分析、設計與建置-分項計畫四：微型電網通訊/控制網路之研製及冷凍空調設備卸載控制之應用 (1/3), 98.11-99.12
26. 電力系統節能減碳研究-具區域節能整合之空調負載節能減碳控制策略研究, 98.8-99.7
27. 地下配電線路故障檢測系統之研製, 98.7-99.6
28. 變電設備維護管理系統與電業設備查驗之維護資料整合計畫, 97.8-99.1

(d)專利

1. 姚立德，接收無線電傳呼系統傳送之指令在電力系統中對負載進行管理之接收器結構，中華民國新型專利第 164194 號，中華民國專利公報公告編號 407815，pp. 5083-5090，民國 89 年 10 月 1 日-99 年 11 月 19 日。
2. 姚立德，電力系統中管理負載之方法及系統，中華民國發明專利第 123125 號，

公告編號 411649，中華民國專利公報，pp.2817-2824，民國 89 年 11 月 11 日-107 年 11 月 19 日。

3. 姚立德、李岳璋、林政煌，供電端對用電端傳送卸載資訊之方法及其裝置，中華民國發明專利第 136707 號，中華民國專利公報公告編號 443042，pp. 5029-5037，民國 90 年 6 月 23 日-108 年 11 月 18 日。
4. 姚立德、李岳璋、林政煌，電價資訊傳訊之方法及其裝置，中華民國發明專利第 137326 號，中華民國專利公報公告編號 448636，pp. 3695-3702，民國 90 年 8 月 1 日-108 年 11 月 18 日。
5. 姚立德、王安民、趙露明，光碟機長程尋軌控制系統及方法，中華民國發明專利第 151603 號，中華民國專利公報公告編號 479248，pp.2683-2690，91 年 3 月 11 日-109 年 12 月 18 日。
6. 姚立德、方志恆，硬度計算衍生之壓痕自動檢測方法，中華民國發明專利第 159290 號，中華民國專利公報公告編號 490551，pp. 1877-1882，91 年 6 月 11 日-110 年 8 月 18 日。
7. 姚立德、黃琮葆、甯校龍，藉無線電傳呼系統傳播指令之遠距離資料擷取方法及其裝置，中華民國發明專利第 169827 號，中華民國專利公報公告編號 516285，pp. 5261-5274，92 年 1 月 1 日-110 年 9 月 12 日。
8. 姚立德、顏榮良等，具有空調裝置控制器之一種控制系統及其對空調溫度之調控方法，中華民國發明專利第 173893 號，中華民國專利公報公告編號 524959，pp. 1839-1849，92 年 3 月 21 日-111 年 4 月 17 日。
9. 姚立德、顏榮良等，運用需量控制器的一種電力管理方法及電力管理系統，中華民國發明專利第 190145 號，中華民國專利公報公告編號 5621659，pp. 5729-5738，92 年 11 月 11 日-111 年 4 月 24 日。
10. 姚立德、張文奇等，用電端動態雙向負載控制方法及其系統，中華民國發明專利第 I237169 號，中華民國專利公報公告編號 I237169，pp. 2447-2453，94 年 8 月 1 日-113 年 9 月 16 日。
11. 姚立德、王志暐，可啟閉油開關與路燈開關之控制裝置，新型專利第 M268178 號，中華民國專利公報證書號數 M268718，pp.11433-11437，94 年 6 月 21 日-113 年 12 月 23 日。
12. 姚立德、林青海，廣域路燈監控系統及其方法，中華民國發明專利第 253028 號，中華民國專利公報公告編號 253028，pp. 2459-2476，2006 年 4 月 11 日-2024 年 3 月 23 日。

13. 姚立德、林青海，絕緣電阻廣域自動量測系統及其方法，中華民國發明專利第I264546號，中華民國專利公報公開編號I264546，pp.1977-1981，2006年10月21日-113年3月23日。
14. 姚立德、王志暐，可供放置無線射頻辨識標籤之罩框結構，中華民國新型專利第M312430號，中華民國專利公報證書號數M312430號，pp.5379-5382，2006年9月18日至2025年4月18日。
15. 姚立德、王志暐、沈成鑫，人(手)孔蓋之維護巡檢管理方法，中華民國發明專利第I263723號，中華民國專利公報證書號數I263723號，pp.5379-5382，2006年10月11日至2025年1月17日。
16. 姚立德、張文奇等，具回報功能之電力供應狀態改變檢測裝置，中華民國發明專利第I280719號，中華民國專利公報公開編號I280719，pp.1977-1981，2007年5月1日-2024年9月16日。
17. 姚立德、盧浩仁，無振鈴閘道裝置，中華民國發明專利第I271093號，中華民國專利公報證書號數I271093，pp. 6663-6669，2007年1月11日至2025年2月22日。
18. 姚立德、黃博昭，自動搜尋光碟機控制參數之方法及系統，中華民國發明專利第I270757號，中華民國專利公報證書號數I270757，pp.3395-3402，2007年1月11日至2025年4月18日。
19. 姚立德、潘皇毓等，區域電力供應狀態改變檢測方法及系統，中華民國發明專利第I270757號，中華民國專利公報證書號數I256187，pp.4405-4414，2007年6月1日至2024年9月16日。
20. 姚立德、盧浩仁等，電力卸載系統之最佳化方法，中華民國發明專利第I272465號，中華民國專利公報證書號數I272465，pp.3397-3403，2007年2月1日至2025年12月14日。
21. 姚立德、張居福，方便維護巡檢之人孔蓋結構，中華民國發明專利第I350331號，中華民國專利公報證書號數I350331，pp.3397-3403，2011年10月11日至2029年12月14日。
22. 姚立德、陳志宏、盧浩仁，停電自動偵測系統及方法，中華民國發明專利第I354238號，中華民國專利公報證書號數I354238，pp.3495-3501，2011年12月11日至2027年11月21日。
23. 姚立德、郭垣熙，電力線路的故障監控方法及其系統，中華民國發明專利第I358544號，中華民國專利公報證書號數I358544，pp.3495-3501，2012年2月21日至2028年1月29日。

24. 鄭鴻斌、姚立德等，冷卻空間之溫控降載系統及方法，中華民國發明專利第 I405938 號，中華民國專利公報證書號數 I358544，pp.3495-3501，2013 年 8 月 21 日至 2031 年 4 月 7 日。
25. 姚立德、邱志明、何恭宇，定位測距方法及系統、距離量測方法，中華民國發明專利第 I432761 號，中華民國專利公報證書號數 I432761，pp.4718-4730，2014 年 4 月 1 日至 2031 年 3 月 21 日。
26. 鄭鴻斌、吳宗叡、陳發賢、姚立德，製冷設備的監控系統及方法，中華民國發明專利第 I432686 號，中華民國專利公報證書號數 I432686，pp.3962-3966，2014 年 4 月 1 日至 2031 年 8 月 2 日。
27. 姚立德、周俊葦，空調系統及其控制方法，發明專利申請中，申請案號 101120266。

賴炎生　教授　*Yen-Shin Lai*

研究室名稱：數位信號處理器專題研究室

聯絡電話：02-2771-2171 #2136

E-mail：yslai@ntut.edu.tw

網址：http://www.ee.ntut.edu.tw/teacher/html/20131203YSLaiDeptWebCVChinese.pdf

研究聚焦領域：□H 健康科技□ I 智慧整合科技■ G 綠色科技□ H 人文與創新元素

專長領域：變頻器控制、轉換器控制及馬達驅動器控制

近年重要論文及著述

(a)期刊論文

1. "Switching control technique of phase-shift controlled full bridge converter to improve efficiency under light load and standby conditions without additional auxiliary components", IEEE Trans. on Power Electronics, 1001-1012, 2010/4/1
2. "A biological swarm chasing algorithm for tracking the PV maximum power point", IEEE Trans. on Energy Conversion, 484-493, 2010/6/1
3. "Effective EMI filter design method for three-phase inverter based upon software noise separation", IEEE Trans. on Power Electronics, 2797-2806, 2010/11/1
4. "Novel digital-controlled transition current mode control and duty compensation techniques for interleaved power factor corrector", IEEE Trans. on Power Electronics, 3085 - 3094, 2010/12/1
5. "Dead-time elimination technique for three-phase inverter control by PWM", J. of Electrical Monthly, 88-98, 2010/1/1
6. "Design and implementation of fully digital-controlled inverter using MCU", J. of Power Electronics, 25-31, 2010/3/1
7. "Detection methods for phase-shift full-bridge converter to reduce the standby power consumption", J. of Power Electronics, 35-41, 2010/5/1
8. "Design and implementation of digital-controlled power factor corrector", J. of Power Electronics, 59-67, 2010/9/1
9. "Design and implementation of BLDCM drives without shaft sensor", J. of Power Electronics, 21-27, 2010/11/1
10. "Novel voltage trajectory control for field weakening operation of induction motor drives", IEEE Trans. on Industry Applications, 122-127, 2011/1/1
11. “以 MCU 實現之全數位化變頻器的研製”，電力電子雙月刊，頁 25-31，2010/02
12. “減少全數位式控制相移全橋轉換器之待機功率的偵測方法”，電力電子雙月刊，頁 35-41，2010/03

13. “數位式功率因素修正器的研製”，電力電子雙月刊，頁 59-67，2010/05
14. “無轉軸感測器之直流無刷壓縮機驅動器的研製”，電力電子雙月刊，頁 21-27，2010/06
15. “應用於脈波寬度調變控制之三相變頻器的盲時消除技術”，電機月刊，頁 88-98，2010/01
16. "A unified approach to zero-crossing point detection of back-EMF for brushless DC motor drives without current and hall sensors", IEEE Trans. on Power Electronics, pp. 1704-117, 2011/6/1(SCI)
17. "Pulse-width modulation technique for BLDCM drives to reduce commutation torque ripple without calculation of commutation time", IEEE Trans. on Industry Applications, pp. 1786-1793, 2011/8/1(SCI)
18. “數位控制交流/直流轉換器及直流/交流變頻器之回授電路設計”，電機月刊，頁 152-157，2011/01
19. “以微控器為基礎之無轉軸偵測永磁同步馬達驅動器的研製”，電機月刊，頁 86-94，2011/01
20. “直流/直流隔離型轉換器之光耦合器回授電路設計”，電機月刊，頁 172-175，2011/02
21. “應用於數位控制直流/交流轉換器之交流回授電路的設計”，電機月刊，頁 166-171，2011/03
22. “應用於數位控制變頻器轉換器之交流回授電路的設計”，電機月刊，頁 180-183，2011/04
23. “數位控制相移全橋轉換器之待機偵測電路的設計”，電機月刊，頁 162-169，2011/05
24. “利用耦合電感偵測數位控制相移全橋轉換器之待機狀態的電路設計”，電機月刊，頁 166-173，2011/07
25. “僅使用單一微控制器之正弦輸出全數位控制在線式不斷電系統的研製”，電機月刊，頁 102-114，2011/07
26. “數位控制無橋式功率因數修正器之電流回授電路的設計”，電機月刊，頁 180-185，2011/08
27. “應用於連續導通模式之數位功率因數修正器的電流感測電路設計”，電機月刊，頁 162-167，2011/09
28. “應用於全橋轉換器及變頻器驅動電路之多組輸出輔助電源的研製”，電機月刊，頁 168-175，2011/10

29. "Digital pulse-width modulation technique for a buck DC/DC converter to reduce switching frequency", IEEE Trans. on Industrial Electronics, 550-560, 2012/1/1
30. "New digital-controlled technique for battery charger with constant current and voltage control without current feedback", IEEE Trans. on Industrial Electronics, vol. 59, no. 3, pp., 2012/3/1
31. "A family of predictive digital-controlled PFC under boundary current mode control", IEEE Trans. on Industrial Informatics, 448-458, 2012/8/1
32. "Voltage control technique for the extension of DC-link voltage utilization of finite speed SPMSM drives, " IEEE", IEEE Trans. on Industrial Electronics, pp. 3392-3402, 2012/9/1
33. “連續導通模式之 3kW 之單相升壓型功率因數修正器的研製”，電力電子雙月刊，頁 11-17，2012/03
34. “數位化控制之交錯型功率因數修正器的研製”，電力電子雙月刊，頁 34-44，2012/03
35. “應用於再生能源市電併網之變頻器的研製”，電機月刊，頁 138-148，2012/01
36. “應用於廣泛輸入電壓範圍之數位式功率因數修正器的研製”，電機月刊，頁 138-145，2012/03
37. "Authors' reply to comments on predictive digital-controlled converter with peak current-mode control and leading-edge modulation", IEEE Trans. on Industrial Electronics, vol. 60, no. 1, pp. 235-238, 2013/1/1
38. "New hybrid pulse-width modulation technique to reduce current distortion and extend current reconstruction range for a three-phase inverter using only DC-link sensor", IEEE Trans. on Power Electronics, pp. 1331–1337, 2013/3/1
39. "Corrections to Switching control technique of phase-shift controlled full- bridge converter to improve efficiency under light load and standby conditions without additional auxiliary components", IEEE Trans. on Power Electronics, pp. 4120, 2013/8/1
40. "New random PWM technique for full-bridge DC/DC converter with harmonics intensity reduction and considering efficiency", IEEE Trans. on Power Electronics, pp. 5013-5023, 2013/11/1
41. "Novel random-switching PWM technique with constant sampling frequency and constant inductor average current for digitally controlled converter", IEEE Trans. on Industrial Electronics, pp. 3126-3135, 2013/8/1
42. “具有熱插拔及均流控制功能之新型變頻器並聯系統”，電力電子雙月刊，頁 62-71，2013/01
43. “應用於相移全橋轉換器之快速動態補償的數位控制器”，電力電子雙月刊，頁 12-19，2013/05
44. “具有功率分配之變頻器模組並聯系統的研製”，電機月刊，頁 70-85，2013/01

45. “直流無刷馬達之新型無感測器驅動技術”，車輛工業月刊，頁 56-68，2013/09
46. "Novel On-Line Parameter Tuning Method for Digital Boost PFC with Transition Current Mode, " accepted by IEEE Trans. on Industry Applications, 2719-2727, 2014/4/1
47. "Novel On-Line Maximum Duty Point Tracking Technique to Improve Two-Stage Server Power Efficiency and Investigation into its impact on Hold-up Time", IEEE Trans. on Industrial Electronics, 2252- 2263, 2014/5/1
48. "New Hybrid Control Technique to Improve Light Load Efficiency While Meeting the Hold-up Time Requirement for Two-Stage Server Power", IEEE Trans. on Power Electronics, 4763-4775, 2014/9/1
49. “內嵌式永磁同步馬達變頻驅動器的弱磁控制”，電機月刊，頁 84-94，2014/01
50. “感應馬達高速驅動器的弱磁控制技術”，機械工業月刊，頁 69-78，2014/07
51. "Novel Phase-Shift Control Technique for Full-Bridge Converter to Reduce Thermal Imbalance under Light-Load Condition, " IEEE Trans. on Industry Applications, 1651-1659, 2015/2/1
52. "New Integrated Control Technique for Two-Stage Server Power to Improve Efficiency under Light Load Condition, " accepted by IEEE Trans. on Industrial Electronics, 2015

(b)研討會論文

1. "Digitally-Controlled Power Factor Corrector with Interleave Transition Current Mode Control", IET PEMD, 2010., Brighton, 2010/4/19
2. "EMI filter design of three-phase inverter for motor drives using a software-based noise separation scheme", IPEC, June, 2010., Sappora, 2010/6/21
3. "Pulse-width modulation technique for BLDCM drives to reduce commutation torque ripple without calculation of commutation time", IEEE ECCE, 2010, Atlanta, 2010/9/12
4. "An unified approach to predictive transition current mode control for digital-controlled power factor corrector", IEEE ECCE, 2010, Atlanta, 2010/9/12
5. "Novel current limitation technique without current feedback for digital-controlled battery charger in UPS applications", IEEE ECCE, 2010, Atlanta, 2010/9/12
6. "Voltage control of interior permanent magnet synchronous motor drives to extend DC-link voltage utilization for flux weakening operation", IEEE IECON, 2010, Phoenix, 2010/11/7
7. "Practical considerations for the design and implementation of digital-controlled power converters", IEEE IECON, 2010, Phoenix, 2010/11/7
8. "Robust control of digital-controlled buck converter based upon two- degree-of-freedom controller", IEEE IECON, 2010, Phoenix, 2010/11/7

9. "Current sensing methods for standby power control of digital-controlled DC/DC converter", IEEE ECCE Asia, 2011, JiJu, 2011/5/30
10. "Novel integrated inverter/converter circuit and control technique of motor drives with dual mode control for EV/HEV applications", IEEE PEDS, Kitakyushu, 2013/4/22
11. "Novel on-line parameter tuning method for digital-controlled boost PFC with transition current mode", IEEE PEDS, Kitakyushu, 2013/4/22
12. "New AC/DC converter considering both inrush current limitation and start-up time", IEEE PEDS, Kitakyushu, 2013/4/22
13. "Design and implementation of digital-controlled bi-directional converter for scooter applications", IEEE PEDS, Kitakyushu, 2013/4/22
14. "Voltage Trajectory Control for Vector-Controlled Induction Motor Drives to Achieve Six-Step Operation", IEEE IECON, Austria, 2013/11/12
15. "Multi-source converter for energy harvest in an internal combustion engine vehicle and its power distribution control", IEEE ISIE, Istanbul, 2014/6/1
16. "Design of laboratory course for learning power converters at Taipei Tech", IEEE ISIE, Istanbul, 2014/6/1
17. "On-line DC-link voltage control of LLC resonant converter for server power applications", IEEE ECCE, Pittsburgh, PA, 2014/9/14
18. "New open loop control technique of boost converter to mitigate temperature impact for LED applications", IEEE IECON, Dallas, 2014/10/30
19. "Infinite speed drives control with MTPA and MTPV for interior permanent magnet synchronous motor", IEEE IECON, Dallas, 2014/10/31

(c)研發與產學合作計畫

1. RZ/T1 AC servo control and decoding algorithm solution development, 104/4-104/9
2. 4 kVA Multi-Inverter 設計, 104/1-104/4
3. 高瓦特數及高效率電源, 103/12-104/10
4. RX64M MTPA and FOC solution development, 103/7-104/1
5. 馬達轉子位置偵測方法研究, 103/4-103/11
6. 變頻控制伺服驅動器之頻寬改善及振動抑制技術發展 (103-2221-E-027-042-MY3), 103/8-106/7
7. 無限速度驅動之內嵌式永磁同步馬達變頻控制驅動的研製(100-2221-E-027-004-MY3), 100/8-103/7
8. 提昇臺灣在 IEEE Industrial Electronics Society 及 Industry Applications Society 的影響力, 101/1-101/12
9. 馬達轉子位置偵測方法研究, 102/4-103/11

10. Study of High-efficiency Power Supply for Next Generation (2nd stage), 102/10-103/9 Hitachi Information & Telecommunication Engineering, Ltd., Japa
11. RX62T MTPA development with MCRP07 Firmware, 102/10-103/3
12. Development of Self-commissioning Techniques for Permanent Synchronous Motor Drives, 102/8-103/7
13. 多元發電電力系統架構, 102/7-102/12
14. RX62T 3-level Inverter Motor Control Solution-Phase 2, 102/4-102/9
15. 數位式電源供應器, 102/3-103/3
16. Study of High-efficiency Power Supply for Next Generation, 101/10-102/9
17. RX62T 3-level Inverter Motor Control Solution, 101/10-102/3
18. Duplication of RX210 Motor Control Solution Board, 101/5-101/9
19. 無感測向量控制方法分析研究, 101/5-101/11
20. 無感測向量控制啟動方法研究, 101/4-101/11
21. 馬達/電感雙模式之驅動與升壓控制, 101/3-101/11
22. 永磁同步馬達向量控制參數鑑別技術, 101/3-101/11
23. Investigation of Digital-controlled Power Converters, 100/12-101/11
24. Self-commission of control parameter of the digital power study, 100/10-101/9
25. The Development of RX210 Motor Control Solution, 100/10-101/3
26. 永磁同步馬達向量控制與 AC-DC 轉換研究(I), 100/3-100/11
27. The Development of RX62T Motor Control with PFC and Realization of R32C/118 Compressor Solution, 99/10-100/9
28. Development of Digital-Controlled IC for High Efficiency Power Converters, 99/10-100/9
29. Study of High-efficiency Power Supply for Next Generation, 99/8-100/9
30. Digital-Controlled AC/DC Converter for Server Applications, 99/7-99/9
31. 無線通訊基地台備援電力系統之直流-交流轉換器技術開發, 99/8-100/2
32. The development of the RX62T/RX621 for Motor Control Application, 99/4-99/9
33. 應用於集合式住宅燃料電池熱電系統之直流交流轉器技術研發 (II), 99/1-99/12
34. STUDY OF DIGITAL CONTROL POWER SUPPLY(IV), 98/4-99/3
35. ON Line UPS Design Reference Implementation (Phase II), 98/9-99/3

36. R32C/118 Integrated Solution for Small Compressor and E-motorcycle Technology Research in Taiwan for the Future, 98/10-99/3
37. Integration for Application Notes & Motor Control Software and Two Phase Modulation Implementation, 98/10-99/3

(d)專利

1. "Power converting system and control method thereof, " US Patent, 20140177281, June. 26, 2014.
2. "Power factor correction device and method with off time prediction for critical mode operation", US Patent, 8564992, Oct. 22, 2013.
3. "Zero-crossing detection circuit and commutation device using the zero-crossing detection circuit ", US Patent, 8487571, Jul. 16, 2013.
4. "Control system of three phase induction motor driver an field weakening control method thereof, " US Patent, 8395336, Mar. 12, 2013.
5. “Shift full bridge power converting system and control method thereof, " US Patent, 8295068, Oct. 23, 2012.
6. "Driving control device and method for power converting system", US Patent, 8080986, Dec. 20, 2011.
7. 橋式轉換器／變頻器的電流極性偵測裝置及方法，發明專利號 201020556，中華民國專利公報公告編號 201020556，民國 99 年 6 月 1 日
8. 交流馬達驅動器的弱磁控制方法及裝置，發明專利號 201015843，中華民國專利公報公告編號 201015843，民國 99 年 4 月 16 日
9. 功率因數修正器的輸入電壓估測方法及裝置，發明專利號 201015840，中華民國專利公報公告編號 201015840，民國 99 年 4 月 16 日

余合興　教授　*Hooshin-H Yee*

研究室名稱：光電與光纖通訊研究室 Photonics and Optical Fiber Communications Lab.

聯絡電話：02-2771-2171 #2165

E-mail：hhyee@ntut.edu.tw

網址： http://www.cc.ntut.edu.tw/~hhyee/index.html

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：半導體材料及元件、量子井雷射二極體、光纖通訊系統量測、光纖通訊主動性元件研製

近年重要論文及著述

(a)期刊論文

1. Q. C. Huang, P. C. Peng, S. F. Fu, W. Y. Yang, J. H. Huang, and H. H. Yee, “Double Sideband With Optical Carrier Suppression Scheme for Broadcasting Transmission, ” IEEE Photonics Technology Letters, vol.26, pp.1172-1175, 2014.
2. "A stable Multiwavelength SOA-based Fiber Ring Laser with Ultra-Narrow Wavelength Spacing", pp1-5, no.1, vol.22, Laser-physics, 2012

(b)研討會論文

1. "Realization and Characterization of a High-Performance SOA-based Multi-wavelength fiber Ring laser", p626-629, Proceedings of PIERS 2012 Kuala Lumpur, Malaysia March, 2012

林敏勝　教授　*Ming-Sheng Lin*

研究室名稱：科學計算與網路應用研究室

聯絡電話：02-2771-2171 #2158

E-mail：mslin@ntut.edu.tw

網址：http://mslin.ee.ntut.edu.tw/dokuwiki/doku.php

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：圖形理論、社群網路、網路可靠度分析、遠距教學

近年重要論文及著述

(a)期刊論文

1. "Educational Affordances of a Ubiquitous Learning Environment in a Natural Science Course", Journal of Educational Technology and Society, 206-219, 2012/6/1
2. "Computing K-terminal reliability of d-trapezoid graphs", Information Processing Letters, 734-738, 2013/9/1
3. "Counting Independent Sets and its Variation in Cocomparability Graphs", Applied Mathematical Sciences, 2525-2531, 2014/5/1
4. "Counting maximal independent sets in directed path graphs", Information Processing Letters, 568-572, 2014/10/1
5. "Counting Independent Sets and its Variation in Cocomparability Graphs", Applied Mathematical Sciences, 2525-2531, 2014/5/1
6. "Computing 2-Terminal Reliability of Probe Interval Graphs", Applied Mathematical Sciences, 419-427, 2015/1/1
7. "Counting independent sets in a tolerance graph", Discrete Applied Mathematics, 174-184, 2015/1/1
8. "A polynomial-time algorithm for computing K-terminal residual reliability of d-trapezoid graphs", Information Processing Letters, 371-376, 2015/2/1

(b)研討會論文

1. "社群網路中訊息影響之研究", TANET, 宜蘭, 2011/10/24
2. "The effects of ubiquitious games on junior students' achievement in English learning", ICICA 2012, Hong Kong, 2012/2/17
3. "Educational Affordances of Ubiquitous Learning", Edutainment 2011, Taipei, 2011/9/7
4. "Using text mining to retrieve educational affordances from documents", ICIKM 2012, Kuala Lumpur, 2012/7/24
5. "The influence factors for improving ubiquitous outdoor learning", ICIKM 2012, Kuala Lumpur, Malaysia, 2012/7/24

6. "Polynomial-Time Algorithm for Computing K-Terminal Reliability of d-Trapezoid Graphs", 第三十屆組合數學與計算理論研討會, 花蓮, 2013/4/26
7. "Counting Independent Sets in a Co-comparability Graph", 第三十屆組合數學與計算理論研討會, 花蓮, 2013/4/26
8. "Computing Residual Connectedness Reliability for d-Trapezoid Graphs", NCS2013, 台中, 2013/12/13
9. "An O(n^2)-time algorithm for computing the K-terminal reliability of rooted directed path graphs", 第三十一屆組合數學與計算理論研討會, 台北, 2014/4/25

(c)研發與產學合作計畫

1. 鏈型圖與二分排列圖中配對計數問題之研究, 100/8-101/7
2. 梯形圖中節點覆蓋計數問題之研究, 98/8-99/7

練光祐　教授　*Kuang-Yow Lian*

研究室名稱：系統分析與控制研究室 System Analysis and Control Laboratory

聯絡電話：02-2771-2171 #2171

E-mail：kylian@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~t101318054/frontpage.html

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：嵌入式系統、智慧家庭技術、智慧型控制、非線性系統分析設計與應用

近年重要論文及著述

(a)期刊論文

1. "Sensorless Linear Induction Motor Speed Tracking Using Fuzzy Observers", IEL Electr. Power Appl., 325-334, 2011/4/1
2. "Power source management for direct methanol fuel cells without using concentration sensors", 臺北科技大學學報, 15-26, 2010/12/1
3. "Current-Sensorless Flyback Converters Using Integral T-S Fuzzy Approach", International Journal of Fuzzy Systems, 66-74, 2013/3/1
4. "Intelligent Multi-Sensor Control System based on Innovative Technology Integration via ZigBee and Wi-Fi Networks", Journal of Network and Computer Applications, 756-767, 2013/3/1
5. "Sensor-Less Adaptive Fuel Concentration Control for Direct Methanol Fuel Cells under Varying Load", Journal of Power Sources, 239-245, 2013/2/1
6. "Fuzzy Virtual Reference Model Sensorless Tracking Control for Linear Induction Motors", IEEE Transactions on System, Man, and Cybernetics-Part B, 970-981, 2013/3/1
7. "Mobile Monitoring and Embedded Control System for Factory Environment", Sensors, 17281-17315, 2013/12/1
8. "Simple Integral Fuzzy Control for Converters with Highly Nonlinear Dynamics", Journal of Marine Science and Technology, 557-565, 2014/10/1
9. "Smart Home Safety Handwriting Pattern Recognition with Innovative Technology", Computers and Electrical Engineering, 1123-1142, 2014/5/1
10. "Partitioning Technique for Relaxed Stability Criteria of Discrete-Time Systems with Interval Time-Varying Delay", Discrete Dynamics in Nature and Society, 6, 2014/6/1

(b)研討會論文

1. "Sensorless linear induction motor control using fuzzy observers for speed tracking", 2010 IEEE International Conference on Robotics and Automation, Anchorage, AK, 2010/5/3

2. "A Fuzzy Decision Maker for Portfolio Problems", IEEE SMC 2010, Istanbul, 2010/10/11
3. "Sensorless T-S Fuzzy Controller for Wind Power Generating Systems", SICE 2010, Taipei, 2010/8/19
4. "Output Regulation Using Integral Fuzzy Predictive Control with Piecewise Lyapunov Functions", IEEE International Conference on Fuzzy Systems, Taipei, 2011/6/27
5. "Output Regulation for an Unmanned Helicopter via Fuzzy Integral Control", Asian Control Conference, Kaohsiung, 2011/5/15
6. "Method of 3-Step Switching for Tri-Ped Robot Using Piezo Actuator", IEEE International Conference on Mechatronics and Automation, Chengdu, 2012/8/5

(c)研發與產學合作計畫

1. 時間延遲系統：從穩定理論到遠端控制應用，－總計畫兼子計畫一：時間延遲系統之穩定條件放寬及其在即時對位之應用, 102/8-103/7
2. 下世代多功能智慧型安養照護系統, 101/8-102/7
3. 時間延遲系統：從穩定理論到遠端控制應用-總計畫兼子計畫一：時間延遲系統之穩定條件放寬及其在即時對位之應用, 101/8-102/7
4. 新世代智慧型全方位居家照護系統-子計畫二：行為感知偵測系統的研究與實現, 101/8-102/7
5. 新世代智慧型全方位居家照護系統-子計畫二：行為感知偵測系統的研究與實現, 100/8-101/7
6. 用系統工程方法設計強健生物 IC 電路-子計畫一:生物複雜網路系統之同步化研究, 100/8-101/7
7. 用系統工程方法設計強健生物 IC 電路-子計畫一:生物複雜網路系統之同步化研究, 99/8-100/7
8. 新世代智慧型全方位居家照護系統-子計畫二：行為感知偵測系統的研究與實現, 99/8-100/7
9. 用系統工程方法設計強健生物 IC 電路-子計畫一:生物複雜網路系統之同步化研究, 98/8-99/7

楊勝明　教授　*Sheng-Ming Yang*

研究室名稱：馬達技術研究室

聯絡電話：02-2771-2171 #2162

E-mail：smyang@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~smyang/

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 文與創新元素

專長領域：電機控制及設計、電力電子、機電整合

近年重要論文及著述

(a)期刊論文

1. "永磁同步自軸承馬達簡介", 電機月刊, 236 期, 108-115, 2010/8/1
2. "永磁交流同步機無轉軸位置感測器控制及其在迴轉式壓縮機之應用", 電機月刊, 241 期, 96-103, 2011/1/1
3. "Electromagnetic Actuator Implementation and Control for Resonance Vibration Reduction in Miniature Magnetically Levitated Rotating Machines", IEEE Transactions on Industrial Electronics, vol.58, no. 2, 611-617, 2011/2/1
4. "開關式磁阻馬達在家電產品的應用", 機械月刊, 431 期, 34-42, 2011/6/1
5. "四象限開關式磁阻馬達驅動器", 電機月刊, 248 期, 108-114, 2011/8/1
6. "使用高頻電壓注入偵測永磁交流馬達轉角之策略介紹", 電機月刊, 253 期, 118-124, 2012/1/1
7. "轉子位置及速度觀測器在伺服馬達控制系統的應用", 電機月刊, 260 期, 140-145, 2012/8/1
8. "使用前端整流器之開關式磁阻馬達煞車方法研究", 電力電子 Power Electronics, vol.10, no. 2, 3-11, 2012/3/1
9. "電動車關鍵技術-動力馬達與驅動系統", 電機月刊, 263 期, 170-178, 2012/11/1
10. "Design of a Thrust Actuator for Magnetic Bearings with Low Radial Attraction Force", IEEE Transactions on Magnetics, vol. 48, no. 11, 3587-3590, 2012/11/1
11. "外擾觀測器在伺服馬達控制系統的應用", 電機月刊, 272 期, 140-146, 2013/8/1
12. "使用開關式磁阻馬達驅動風扇時之振動及噪音探討", 電力電子 Power Electronics, vol.11, no.4, 3-9, 2013/7/1
13. "Controlled Dynamic Braking for Switched Reluctance Motor Drives with a Rectifier Front-End", IEEE Transactions on Industrial Electronics, vol. 60, no. 11, 4913-4919, 2013/11/1
14. "永磁交流伺服馬達參數鑑別與控制器調整", 電機月刊, 277 期, 96-105, 2014/1/1

15. "單相開關式磁阻馬達驅動系統介紹", 電機月刊, 284 期, 169-177, 2014/8/1
16. "The Detection of Resonance Frequency in Motion Control Systems", IEEE Transactions on Industry Applications, vol. 50, no. 5, 1-6, 2014/9/1
17. "磁通切換馬達之原理與應用", 電機月刊, 289 期, 94-106, 2015/1/1
18. "結合高頻電壓注入及反電動勢法之永磁交流馬達無轉角感測器控制", 電力電子 Power Electronics, vol.13, no.1 , 3-10, 2015/1/1

(b)研討會論文

1. "Implementation and Control of a PMSM Self-Bearing Motor Drive", IEEE ECCE 2010, Atlanta, GA, 2010/9/13
2. "永磁同步自軸承馬達徑向力控制改善及實驗驗證", 第九屆台灣電力電子研討會暨展覽會, 嘉義, 國立中正大學, 2010/9/3
3. "永磁交流同步機無轉軸位置感測器控制及其在迴轉式壓縮機之應用", 第九屆台灣電力電子研討會暨展覽會, 嘉義, 國立中正大學, 2010/9/3
4. "軸向磁力軸承最佳化設計與驗證", 第三十一屆電力工程研討會, 台南, 崑山科技大學, 2010/12/3
5. "開關式磁阻馬達高速煞車方法研究", 第三十一屆電力工程研討會, 台南, 崑山科技大學, 2010/12/3
6. "Investigation of a Braking Method for Switched Reluctance Motor Drives", the 8th International Mini-Workshop on Power Electronics and Motion Control, Busan, Korea, 2011/2/18
7. "基於馬達模式之永磁交流馬達無轉軸位置感測器控制及驗證", 第十屆台灣電力電子研討會暨展覽會, 中原大學, 2011/9/2
8. "以高頻電壓注入偵測永磁交流馬達轉角之策略探討", 第十屆台灣電力電子研討會暨展覽會, 中原大學, 2011/9/2
9. "表面磁鐵型永磁同步自軸承馬達控制策略改善及驗證", 第十屆台灣電力電子研討會暨展覽會, 中原大學, 2011/9/2
10. "Experimental Verification of Radial Force Control for a PMSM Self-Bearing Motor Drive", IECON 2011, 墨爾本, 2011/11/7
11. "Investigation of a Dynamic Braking Scheme for Switched Reluctance Motor Drives", IECON 2011, 墨爾本, 2011/11/7
12. "開關式磁阻馬達四象限控制", 第三十二屆電力工程研討會, 明志科技大學, 2011/12/2
13. "開關式磁阻馬達多相激磁煞車控制", 第三十二屆電力工程研討會, 明志科技大學, 2011/12/2

14. "Radial Force Control and Implementation of a PMSM Self-Bearing Motor Drive", the 9th International Mini-Workshop on Power Electronics and Motion Control, 台北, 2012/3/9
15. "Design of a Thrust Actuator for Magnetic Bearings with Low Radial Attraction Force", INTERMAG 2012, Vancouver, 2012/5/8
16. "永磁交流自軸承馬達無轉角感測器控制系統研", 第十一屆台灣電力電子研討會暨展覽會, 新竹清華大學, 2012/9/11
17. "應用於自軸承馬達之軸向磁力軸承研製", 第十一屆台灣電力電子研討會暨展覽會, 新竹清華大學, 2012/9/11
18. "使用開關式磁阻馬達於烘手機的驅動系統設計", 中華民國第三十三屆電力工程研討會, 台北, 2012/12/7
19. "開關式磁阻馬達無轉軸位置感測器控制於風扇驅動之應用", 中華民國第三十三屆電力工程研討會, 台北, 2012/12/7
20. "永磁交流自軸承馬達與軸向磁力軸承之系統整合研製", 中華民國第三十三屆電力工程研討會, 台北, 2012/12/7
21. "Observer-Based Automatic Control Loop Tuning for Servo Motor Drive", The 10th IEEE International Conference on Power Electronics and Drive Systems, 北九州, 2013/4/22
22. "Detection and Suppression of Mechanical Resonance in Motion Control Systems with Adaptive Resonance Frequency Tracker", ECCE 2013, Denver, 2013/9/15
23. "伺服馬達控制迴路自動調整的方法研究", 中華民國第三十四屆電力工程研討會, 國立勤益科技大學, 2013/12/6
24. "開關式磁阻馬達噪音及振動實測與分析", 中華民國第三十四屆電力工程研討會, 國立勤益科技大學, 2013/12/6
25. "永磁交流自軸承馬達系統整合及無轉角感測器控制", 中華民國第三十四屆電力工程研討會, 國立勤益科技大學, 2013/12/6
26. "單相開關式磁阻馬達之功率因數修正電路研製", 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4
27. "利用負載電流注入以提升馬達驅動器之功率因數方法研究", 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4
28. "Design of a Three-Phase Outer-Rotor Permanent Flux Switching Motor for Electric Wheelchair", 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4
29. "永磁交流自軸承馬達無轉角感測器控制", 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4

30. "自軸承馬達搭配軸向磁力軸承之三軸磁懸浮控制系統研製", 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4
31. "應用於輕型電動機車之外轉子直流激磁式磁通切換馬達設計", 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4
32. "Parameter Identification and Automatic Control Loop Tuning for PMAC Servo Motor Drives", IECON 2014, Dallas, TX, 2014/10/30
33. "自行車照明之軸向磁通永磁發電機研製", 中華民國第三十五屆電力工程研討會, 高雄, 2014/12/5
34. "單軸磁懸浮馬達之啟動控制研究", 中華民國第三十五屆電力工程研討會, 高雄, 2014/12/5

(c)研發與產學合作計畫

1. 電動車的高效能交流電機設計、驅動、控制及充電關鍵技術研發－子計畫四：直流激磁式磁通切換電動機的設計、控制及在電動車的應用研究(2/2), 104/8-105/7
2. 高速線性伺服馬達控制系統之控制迴路自動調整, 103/11-104/10
3. 電動車的高效能交流電機設計、驅動、控制及充電關鍵技術研發－子計畫四：直流激磁式磁通切換電動機的設計、控制及在電動車的應用研究(1/2), 103/8-104/7
4. 電動車的高效能交流電機設計、驅動、控制及充電關鍵技術研發－子計畫二：直流激磁式磁通切換電動機的設計、控制及在電動車的應用研究, 102/8-103/7
5. 永磁同步電機驅動系統之相關節能及驅控性能增進技術開發-子計畫三：內藏型永磁同步電機之自軸承控制、系統整合及控制性能增進研究, 101/8-102/7
6. 用於烘手機之高轉速開關式磁阻馬達驅動系統發, 100/11-101/10
7. 永磁同步電機驅動系統之相關節能及驅控性能增進技術開發-子計畫三：內藏型永磁同步電機之自軸承控制、系統整合及控制性能增進研究, 100/8-101/7
8. 永磁同步電機驅動系統之相關節能及驅控性能增進技術開發-子計畫三：內藏型永磁同步電機之自軸承控制、系統整合及控制性能增進研究, 99/8-100/7
9. 永磁交流電動機之設計、製作、驅動、控制、應用及關鍵性技術開發－子計畫三: 永磁同步電動機之徑向力分析、控制及自軸承應用研究(2/2), 98/8-99/7
10. 開關式磁阻馬達低速性能改善, 102/9-103/2
11. 智慧型致動器研究, 101/3-101/11
12. 新伺服驅動器之負載慣量與共振頻率自動調適, 101/2-101/9
13. 直流無刷風扇馬達效能及效率改善提昇計畫, 100/4-101/4
14. 電壓控制型開關式磁阻馬達驅動系統設計, 99/8-100/1
15. 高轉速切換式磁阻馬達系統設計, 99/6-99/11

黃有評　教授　*Yo-Ping Huang*

研究室名稱：寰宇計算研究室 Ubiquitous Computing Laboratory

聯絡電話：02-2771-2171 #2152

E-mail：yphuang@ntut.edu.tw

網址：http://iseco.idv.tw/yphuang/

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：健康照護系統設計、智慧型系統、巨量資料探勘、手持裝置應用系統設計

近年重要論文及著述

(a)期刊論文

1. "Experiences with RFID-based interactive learning in museums", Int. J. of Autonomous and Adaptive Communications Systems, pp.59-74, 2010/1/1
2. "User interface design for public kiosks: an evaluation of the Taiwan High Speed Rail ticket vending machine", Journal of Information Science and Engineering, 2010/1/1
3. "Studies or leisure? A cross-cultural comparison of Taiwanese and Norwegian engineering students' preferences for university life", Int. Journal of Engineering Education, pp.227-235, 2010/1/1
4. "Near eyes-free Chauffeur computer interaction with chording and visual text mnemonics", J. of Universal Computer Science, pp.1311-1326, 2010/5/1
5. "Cultural factors influencing eastern and western engineering students' choice of university", European Journal of Engineering Education, pp.147-160, 2010/5/1
6. "Toward harmonious east-west educational partnerships: a study of cultural differences between Taiwanese and Norwegian engineering students", Asia Pacific Education Review, pp.585-595, 2010/7/1
7. "Ubiquitous information transfer across different platforms by QR codes", J. of Mobile Multimedia, pp.3-14, 2010/3/1
8. "An adaptive knowledge evolution strategy for finding near-optimal solutions of specific problems", Expert Systems with Applications, pp.3806-3818, 2011/4/1
9. "RFID-based guide gives museum visitors more freedom", IEEE IT Pro, pp.25-29, 2011/3/1
10. "Video super-resolution by motion compensated iterative back-projection approach", Journal of Information Science and Engineering, pp.1107-1122, 2011/5/1
11. "Improving classifications of medical data based on fuzzy ART2 decision trees", Int. Journal of Fuzzy Systems, pp.444-453, 2012/9/1
12. "Novel query-by-humming/singing method with fuzzy inference system", Journal of Convergence, 1-7, 2013/1/1

13. "Hybrid intelligent methods for arrhythmia detection and geriatric depression diagnosis", Applied Soft Computing, 38-46, 2014/1/1
14. "Associating absent frequent itemsets with infrequent items to identify abnormal transactions", Applied Intelligence, 290-302, 2014/12/1
15. "An intelligent approach to discovering common symptoms among depressed patients", Soft Computing, 1-9, 2014/8/1
16. "A GA-based fuzzy recommender system for region-based image retrieval", Int. Journal of Fuzzy Systems, 1-13, 2014/9/1

(b)研討會論文

1. "A fuzzy ART2 model for finding association rules in medical data", in Proc. of FUZZ-IEEE, Barcelona, 2010/7/18
2. "Mining users browsing behavior for product promotion in a multi-touch display system", in Proc. of Int. Conf. on Society and Information Technologies (ICSIT2010), Orlando, 2010/4/6
3. "An interactive RFID-based multi-touch product display system", in Proc. of Int. Multi-Conf. on Complexity, Informatics and Cybernectics (IMCIC2010), Orlando, 2010/4/6
4. "牆面觸控展示系統使用行為之探勘", in Proc. of 2010 National Symp. on System Science and Engineering, 台北市, 2010/7/1
5. "Water quality monitoring with ubiquitous computing", in Proc. of Symposia and Workshops on Ubiquitous, Automatic and Trusted Computing, in conjunction with The UIC2010 and ATC2010 Conf., Xian, China, Xian, 2010/10/26
6. "Discovering fuzzy association rules from patient's daily text messages to diagnose melancholia", in Proc. of IEEE SMC, Istanbul, Turkey, Istanbul, 2010/10/10
7. "Fuzzy environment mapping for robot navigation based on grid computing", in Proc. of IEEE SMC, Istanbul, Turkey, Istanbul, 2010/10/10
8. "The design of grey temperature sensory modules for environmental monitoring", in Proc. of The 15th National Conference on Grey System Theory and Applications, Changhwa, Taiwan, Changhwa, 2010/12/18
9. "以模糊控制改善樂高機器人行走之平滑性", in Proc. 18th National Conf. on Fuzzy Theory and its Applications, Hualian, Taiwan, Hualian, 2010/12/3
10. "Using fuzzy data mining to diagnose patients' degrees of melancholia", in Proc. SPIE Symp. on Defense & Security, Orlando, FL, USA, Orlando, 2011/4/25
11. "Systematic design of environmental monitoring interface by Bayesian classification", in Proc. of Int. Conf. on System Science and Engineering, Macao, China, Macao, 2011/6/8
12. "Mining association rules from responded questionnaire of sanitary education guidance", in Proc. of 7th Int. Conf. on Data Mining, Las Vegas, NE, U.S.A., Las Vegas, 2011/7/18

13. "Discovering abiotic interactions between bird habitat and water quality through ubiquitous computing", in Proc. of Symposia and Workshops on Ubiquitous, Automatic and Trusted Computing, in conjunction with The UIC2011 and ATC2010 Conf., Banff, Canada, Banff, 2011/9/2
14. "An efficient strategy to detect outlier transactions for knowledge mining", in Proc. of IEEE SMC, Anchorage, Alaska, U.S.A., Anchorage, 2011/10/9
15. "智慧型手機平台上偵測使用者跌倒模式之模糊系統", in Proc. of 2011 National Symp. on System Science and Engineering, Nantou, Taiwan, 南投, 2011/6/17
16. "Query-by-humming/singing of MIDI and audio files by fuzzy inference system", in Proc. of The 3rd FTRA Int. Conf. on Mobile, Ubiquitous, and Intelligent Computing (MUSIC 2012), Vancouver, 2012/6/26
17. "Discovering association rules from responded questionnaire for diagnosing geriatric depression", in Proc. of 2012 ICME Int. Conf. on Complex Medical Engineering (CME 2012), Kobe, 2012/7/1
18. "Ubiquitous computing and evaluation of water quality by grey relational analysis", in Proc. of Symposia and Workshops on Ubiquitous, Automatic and Trusted Computing, in conjunction with The UIC2012 and ATC2012 Conf., Fukouka, 2012/9/4
19. "Association rules based algorithm for identifying outlier transactions in data stream", in Proc. of IEEE SMC, Seoul, 2012/10/14
20. "以灰色模糊分群方法探勘鳥類物種與棲息地水質間非生物關聯性", in Proc. of 2012 National Symp. on System Science and Engineering, Keelung, 2012/6/16
21. "A robust fuzzy clustering method with outliers influence free", in Proc. of Int. Conf. on Fuzzy Theory and its Application, Taichung, Taiwan, Taichung, 2012/11/16
22. "A fuzzy approach to discriminating heartbeat types and detecting arrhythmia", in Proc. of Int. Conf. on Fuzzy Theory and its Application, Taichung, Taiwan, Taichung, 2012/11/16
23. "Design and implementation of cognitive examination systems on Tablet PC", in Proc. of 2013 IEEE ICME Int. Conf. on Complex Medical Engineering (CME 2013), Beijing, 2013/5/25
24. "Smart phone-based fuzzy modeling to examine facial skin quality", in Proc. of IEEE Int. Conf. on System Science and Engineering, Budapest, 2013/7/4
25. "Ejecting outliers to enhance robustness of fuzzy cluster ensemble", in Proc. of IEEE SMC, Manchester, 2013/10/13
26. "An interface for reducing errors in intravenous drug", in Proc. of Int. Conf. on Human-centric Computing (HumanCom2013), Taipei, 2013/8/23
27. "Using type-2 fuzzy models to detect fall incidents and abnormal gaits among elderly", in Proc. of IEEE SMC, Manchester, 2013/10/13

28. "A computer supported memory aid for copying prescription parameters into medical equipment based on linguistic phrases", in Proc. of IEEE SMC, Manchester, 2013/10/13
29. "以模糊方法推論使用者言詞間其情緒之向度和強度", in Proc. of 2013 National Symp. on System Science and Engineering, 新北市, 2013/6/8
30. "The design of visual navigation system with graceful deception for elderly health care", in Proc. of 2013 National Symp. on System Science and Engineering, 新北市, 2013/6/8
31. "An intelligent approach to mining depression data", Proc. of the 14th Int. Symp. on Advanced Intelligent Systems, Daejeon, 2013/11/13
32. "Embedding graceful deception system in visual navigation for elderly health care", Proc. of CACS Int. Automatic Control Conf., Taichung, 2013/12/2
33. "A fuzzy approach to assess the indication of dementia based on magnetic reasoning imaging", Proc. of Int. Conf. on Fuzzy Theory and its Application, Taipei, 2013/12/6
34. "Ubiquitous knowledge-based framework for personalized home healthcare systems", in Proc. of the 11th IEEE Int. Conf. on Networking, Sensing and Control, Miami, 2014/4/7
35. "Evaluating dementia risk from MRI by fuzzy inference model", in Proc. of the 11th IEEE Int. Conf. on Networking, Sensing and Control, Miami, 2014/4/7
36. "Adopting an ideal companion animal for elderly healthcare: the characteristics that matter", in Proc. of IEEE ICME Int. Conf. on Complex Medical Engineering (CME 2014), Taipei, 2014/6/26
37. "A positive subject tree-based model for early diagnosis of dementia", in Proc. of IEEE ICME Int. Conf. on Complex Medical Engineering (CME 2014), Taipei, 2014/6/26
38. "A fuzzy approach to evaluating the risk of dementia by analyzing the cortical thickness from MRI", in Proc. of IEEE Int. Conf. on System Science and Engineering, Shanhai, 2014/7/11
39. "An intelligent approach to identify elderly body information", in Proc. of IEEE Int. Conf. on Automation Science and Engineering (IEEE CASE 2014), Taipei, 2014/8/18
40. "身體資訊智慧型監測系統之設計", in Proc. of 2014 National Symp. on System Science and Engineering, 金門, 2014/6/21
41. "有效防護長期臥病在床者褥瘡護理與其安全之方法", in Proc. of 2014 National Symp. on System Science and Engineering, 金門, 2014/6/21
42. "Mining implicit outlier purchasing behaviors from fan group marketing data", in Proc. of the 15th Int. Symp. on Advanced Intelligent Systems, Kitakyushu, 2014/12/1
43. "An intelligent model to find associations among juvenile bangs, vision and scoliosis", in Proc. of Int. Conf. on Fuzzy Theory and its Application, Kaohsiung, 2014/11/26
44. "A fuzzy approach to identifying elderly gaits from smart cane", in Proc. of CACS Int. Automatic Control Conf., Kaohsiung, 2014/11/26

45. "Identifying elderly activity types by interval type-2 fuzzy models", in Proc. of IEEE SMC, San Diego, CA, 2014/10/5
46. “A fuzzy approach to identifying elderly gaits from smart cane,” in Proc. of CACS Int. Automatic Control Conf., Kaohsiung, Taiwan, 2014/11/26
47. “An intelligent model to find associations among juvenile bangs, vision and scoliosis,” in Proc. of Int. Conf. on Fuzzy Theory and its Application, Kaohsiung, Taiwan, 2014/11/26
48. “Mining implicit outlier purchasing behaviors from fan group marketing data,” in Proc. of the 15th Int. Symp. on Advanced Intelligent Systems, Kitakyushu, Japan, 2014/12/3.

(c)研發與產學合作計畫

1. 新世代銀髮族主動式關懷與照護系統, －子計畫二:以銀髮族腦部與身體資訊設計主動關懷健康照護模糊系統, 102/8-103/7
2. 下世代多功能智慧型安養照護系統, 101/8-102/7
3. 智慧型手機平台上銀髮族自我健康照護模糊系統之設計, 101/8-102/7
4. 在觸控顯示平台上展現畫作、雕刻圖案及鳥類照片精華部分之互動介面設計, 101/6-102/5
5. 有效探勘使用者日常行為舉止與對話跟憂鬱症關聯性之方法, 100/8-101/7
6. 新世代智慧型全方位居家照護系統-子計畫一：適用居家照護環境之寰宇資訊中心與使用者行為探勘模式之設計, 99/8-100/7
7. 以資料探勘技術分析海水溫度與鹽度時空關聯及其與水團間之相關性(3/3), 99/8-100/7
8. 以資料探勘技術分析海水溫度與鹽度時空關聯及其與水團間之相關性(2/3), 98/8-99/7
9. 新世代銀髮族主動式關懷與照護系統, －子計畫二:以銀髮族腦部與身體資訊設計主動關懷健康照護模糊系統, 102/8-103/7
10. 下世代多功能智慧型安養照護系統, 101/8-102/7
11. 智慧型手機平台上銀髮族自我健康照護模糊系統之設計, 101/8-102/7
12. 在觸控顯示平台上展現畫作、雕刻圖案及鳥類照片精華部分之互動介面設計, 101/6-102/5
13. 有效探勘使用者日常行為舉止與對話跟憂鬱症關聯性之方法, 100/8-101/7
14. 新世代智慧型全方位居家照護系統-子計畫一：適用居家照護環境之寰宇資訊中心與使用者行為探勘模式之設計, 99/8-100/7

15. 以資料探勘技術分析海水溫度與鹽度時空關聯及其與水團間之相關性(3/3), 99/8-100/7
16. 以資料探勘技術分析海水溫度與鹽度時空關聯及其與水團間之相關性(2/3), 98/8-99/7
17. 總計畫：低碳綠能與生態社區聯合技術發展中心—子計畫七：環境監測, 99/2-99/12
18. 多點觸控系統在衛生教育宣導及疾病預防之研究, 99/1-99/12
19. 總計畫：低碳綠能與生態社區聯合技術發展中心—子計畫七：環境監測, 99/2-99/12
20. 多點觸控系統在衛生教育宣導及疾病預防之研究, 99/1-99/12
21. 互動式大型牆面觸控與展示系統之研究, 98/1-98/12
22. 網路商店顧客行為之資料探勘與分析, 103/3-104/2
23. 可自動分析失智症程度之篩檢系統, 103/1-103/12
24. 智慧型失智症前期自動診斷系統之研究, 102/1-102/12
25. 老人憂鬱症自動診斷系統, 100/2-100/12
26. 以資料探勘技術分析病人情緒之研究, 99/1-99/12
27. 電子飛鏢比賽流程自動化與資料分析之設計, 98/10-99/7
28. 網路商店顧客行為之資料探勘與分析, 103/3-104/2
29. 可自動分析失智症程度之篩檢系統, 103/1-103/12
30. 智慧型失智症前期自動診斷系統之研究, 102/1-102/12
31. 老人憂鬱症自動診斷系統, 100/2-100/12
32. 以資料探勘技術分析病人情緒之研究, 99/1-99/12
33. 電子飛鏢比賽流程自動化與資料分析之設計, 98/10-99/7

曹大鵬　教授　*Ta-Peng Tsao*

研究室名稱：電力監控研究室 Power System Monitoring Laboratory

聯絡電話：02-2771-2171 #2153

E-mail：tptsao@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1051

研究聚焦領域：□ H 健康科技 ■ I 智慧整合科技 ■ G 綠色科技□ H 人文與創新元素

專長領域：電力系統模擬分析、電機機械監控與診斷、能源管理系統

近年重要論文及著述

(a)期刊論文

1. "Quantum genetic algorithm for dynamic economic dispatch with valve-point effects and including wind power system", International Journal of Electrical Power & Energy Systems, 9, 2011/2/1
2. Jia-Chu Lee, Whei-Min Lin, Gwo-Ching Liao, and Ta-Peng Tsao〝Hybrid Particle Swarm Optimization and Fuzzy Neural Neworks Approach for Short-Term Load Forecastingt〞IEEE-PES-GM 2010 July 25-28 Minneapolis, Minnesota, USA 978-1-4244-8357-0/10/© 2010

(b)研討會論文

1. "創新研發超導式裝置應用於熱泵系統改進與節能減碳研究分析", 2010 中華民國第 31 屆電力工程研討會, 台南, 2010/12/3
2. Whei-Min Lin, Chia-Chun Tsai, Chi-Hsiang Lin, and T. P. Tsao, “Alleviating Shaft Torsional Vibrations Caused by Electric Arc Furnaces for a Low Capacity Turbine Generator by using a Flywheel Coupler, ” 2010 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM 2010 in Macao), Dec, 7-10, 2010, Page 1771-1775
3. 李家居、林惠民、曹大鵬「創新研發超導式裝置應用於熱泵系統改進與節能減碳研究分析」中華民國第三十一屆電力工程研討會, 台灣, 台南 P54-59, 2010 年 12 月 3-4 日
4. 林惠民、李家居、吳榮慶、曹大鵬「以綠色能源模擬規劃自然生態公園之應用分析」中華民國第三十一屆電力工程研討會, 台灣, 台南 P 2174-2178, 2010 年 12 月 3-4 日
5. 林惠民、蔡家駿、林祺祥、曹大鵬，“電弧爐引起的汽輪發電機扭轉振動之研討”，中華民國第三十二屆電力工程研討會，P 2444-2448, 2011 年 12 月 2-3 日

6. 林惠民、李家居、吳榮慶、曹大鵬,「智慧型手機結合 GPS 尋車位裝置設計與節能減排策略應用」,中華民國第三十二屆電力工程研討會, 台灣, 新北市 P525-529, 2011 年 12 月 2-3 日
7. 林惠民、李家居、廖國清、曹大鵬,「冷凍貯藏型裝置應用智慧記憶模組研發分析」,中華民國第三十二屆電力工程研討會, 台灣, 新北市 P2261-2266, 2011 年 12 月 2-3 日
8. 李家居、莫清賢、曹大鵬,「以換能回收裝置實測熱能晶片與節能應用可行性研究分析」中華民國第三十三屆電力工程研討會, 台灣, 台北市 2012 年 12 月 7-8 日
9. 李家居、莫清賢、曹大鵬「水族槽裝置應用致冷功率晶片控溫調節模態之效能比較分析」中華民國第三十三屆電力工程研討會, 台灣, 台北市 2012 年 12 月 7-8 日
10. 歐庭嘉，林增輝，洪志明，曹大鵬，“微電網分散式電力潮流之研究”，中華民國第三十三屆電力工程研討會，台北科技大學，pp. 277-281，Dec.7-8，2012.
11. Ting-Chia Ou, Ta-Peng Tsao, Whei-Min Lin, Chih-Ming Hong, Kai-Hung Lu, and Chia-Sheng Tu, “A novel Power Flow Analysis for Microgrid Distribution System,” in Proc. 8th IEEE Conference on Industrial Electronics and Applications, Melbourne, Australia, June 2013, pp. 1550-1555.
12. Ting-Chia Ou, Ta-Peng Tsao, Chih-Ming Hong, and Chiung-Hsing Chen, “Hybrid Control System for Automatic Voltage Regulator in Smart Grid, ” in Proc. International Conference on Machine Learning and Cybernetics (ICMLC), Tianjin, China, July 2013, pp. 1103-1108.
13. 歐庭嘉、曹大鵬、張淯詠，”二進制粒子群演算法求解最佳化短期機組排程於智慧型電網之應用”,中華民國第三十四屆電力工程研討會,國立勤益科技大學,pp. 277-281，Dec.7-8，6th~7th Dec. 2013.
14. 曹大鵬、林意祥、呂建霖、歐庭嘉，” 量子基因演算法於智慧型電網之輸電最佳化無效功率調度”,中華民國第三十四屆電力工程研討會,國立勤益科技大學， 6th~7th Dec. 2013.
15. 歐庭嘉、曹大鵬、李柏彥、姜大駿，” 應用量子蟻拓演算法求解智慧電網之含碳交易機組排程”，中華民國第三十四屆電力工程研討會，國立勤益科技大學， 6th~7th Dec. 2013.
16. 曹大鵬、歐庭嘉、呂建霖、楊慶文，” 應用量子二進制粒子群演算法求解智慧電網復電策略”,中華民國第三十五屆電力工程研討會,正修科技大學， 5th~6th Dec. 2014.
17. 曹大鵬、余兆東、張騰文，” 應用非凌駕排序基因演算法於有效功率與無效功率調度最佳化”,中華民國第三十五屆電力工程研討會,正修科技大學， 5th~6th Dec. 2014.

18. 曹大鵬、姜大駿、張邱捷，” 混合平行基因演算法與支持向量機作短期負載預測”，中華民國第三十五屆電力工程研討會，正修科技大學， 5th~6th Dec. 2014.
19. "以綠色能源模擬規劃自然生態公園之應用分析", 2010 中華民國第 31 屆電力工程研討會, 台南, 2010/12/3

(c)研發與產學合作計畫

1. 新型多相復閉系統設計於提昇台電系統穩定度及可靠度與振動抑制之研究, 99/8-100/7,國科會
2. 能源監控管理設備系統建置研究 101/3-102/6, 企業產學計畫案

譚旦旭　教授　*Tan-Hsu Tan*

研究室名稱：無線通訊研究室 Wireless Communications Laboratory

聯絡電話：02-2771-2171 #2113

E-mail：thtan@ntut.edu.tw

網址：http://140.124.43.63

研究聚焦領域：■H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：行動無線通訊系統、行動遠距醫療系統、最佳化演算法

近年重要論文及著述

(a)期刊論文

1. "Applications of Fuzzy Logic for Adaptive Interference Canceller in CDMA Wireless Communication Systems", International Journal of Innovative Computing, Information and Control, 1749-1761, 2010/4/1
2. "Multi-user Detection in DS-CDMA Systems Using a Genetic Algorithm with Redundancy Saving Strategy", International Journal of Innovative Computing, Information and Control, 3347-3364, 2010/8/1
3. "International Journal of Innovative Computing, Information and Control", Expert Systems With Applications, 6482-6492, 2010/9/1
4. "Development of a Ubiquitous Emergency Medical Service System Based on Zigbee and 3.5G Wireless Communication Technologies", ICMB 2010, Lecture Notes in Computer Science (LNCS) 6165, 201–208, 2010/6/1
5. "Development of a Portable Linux-Based ECG Measurement and Monitoring System", Journal of Medical Systems, 559-569, 2011/8/1
6. "Educational Affordances of a Ubiquitous Learning Environment in a Natural Science Course", Journal of Educational Technology & Society, 206–219, 2012/4/1
7. "Developing an Intelligent e-Restaurant with a Menu Recommender for Customer-Centric Servic", IEEE Transactions on Systems, Man, and Cybernetics--Part C: Applications and Reviews, 775-787, 2012/9/1
8. "Clinical Verification of A Clinical Decision Support System for Ventilator Weaning", BioMedical Engineering Online, 2013/12/1
9. "Development and evaluation of an E-health system for caring for patients with bladder pain syndrome/interstitial cystitis", International Journal of Urology, S1:62-68, 2014/4/1

(b)研討會論文

1. "Development of a Ubiquitous Emergency Medical Service System Based on Zigbee and 3.5G Wireless Communication Technologies", 2010 International Conference on Medical Biometrics, Hong Kong, 2010/6/28

2. "Development of an Intelligent e-Restaurant with Menu Recommendation for Customer-Centric Service", International Workshop on Mobile Multimedia Processing, Istanbul, 2010/8/22
3. "Joint Channel Estimation and Multi-user Detection for MC-CDMA System Using Genetic Algorithm and Simulated Annealing", 2010 IEEE International Conference on Systems, Man, and Cybernetics, Istanbul, 2010/10/10
4. "Developing a Ubiquitous Emergency Medical Service System Based on Wireless Access and Geographic Information System", International Conference on Knowledge Based Industry-2011, Ulaanbaatar, 2011/7/6
5. "上行正交分頻多重存取系統載波頻率偏移之估計與補償", 2010 年民生電子研討會, Tainan, 2011/11/5
6. "Interference Cancellation Techniques for Carrier Frequency Offsets Compensation in Uplink OFDMA Systems", 2010 年民生電子研討會, Tainan, 2011/11/5
7. "干擾消除技術及混合式最佳化演算法於正交互補碼 MC-CDMA 系統多用戶偵測之應用研究", 2010 年民生電子研討會, Tainan, 2011/11/5
8. "Estimation of Carrier Frequency Offsets for Uplink OFDMA System Using A Hybrid Taguchi-Mutated-Particle Swarm Optimization Approach" to appear in 2012 IEEE International Conference on Systems, Man, and Cybernetics (SMC2012 Seoul, Korea.", 2012 IEEE International Conference on Systems, Man, and Cybernetics (SMC2012), Seoul, 2012/10/14
9. "Using Computer Games in a Computer Course to Improve Learning", 2012 IEEE International Conference on Teaching, Assessments and Learning for Engineering (TALE2012), Hong Kong, 2012/8/20
10. "Indoor Activity Monitoring System for Elderly Using RFID and FitBit Flex Wristband", IEEE-EMBS International Conference on Biomedical and Health Informatics, Valencia, 2014/6/1
11. "Mixing PSO and Tabu Search Technique and Its Application to Estimation of Carrier Frequency Offsets for Uplink OFDMA System", 2014 IEEE International Conference on Systems, Man, and Cybernetics, San Diego, 2014/10/5

(c)研發與產學合作計畫

1. 基於行為規劃之輕度失智症患者日常生活導引系統之發展與實現, 103/9-104/8
2. 獨居銀髮族日常活動型態監測系統之發展與實現, 102/9-103/8
3. Android-based 可攜式即時心電訊號擷取及心律異常偵測系統之實現, 102/8-103/7
4. 基因演算法於 OFDMA 系統聯合通道估計及多用戶偵測之應用研究, 101/8-102/7

5. 基於改良型粒子群演算法及干擾消除技術之正交分頻多重存取上傳系統之載波頻率偏移估計與補償, 100/8-101/7
6. 台蒙國際合作計畫－基於 ECG 之普及式緊急救護系統之發展與應用研, 99/8-101/
7. 應用粒子群演算法偵測正交分頻多重存取上傳系統之載波頻率偏移 99/8-100/7.
8. 應用 ZigBee、GPS、以及 WiMAX 技術建構緊急救護系統之研究(II) , 98/8-99/7.
9. PHS/WiMAX 雙模系統於遠距行動醫療之應用研究, 100/3-103/3
10. PHS 通訊系統定位技術之改善、共頻道干擾之評估以及 PHS/WiMAX 雙模行動醫療看護系統之製作(4/4), 99/3-100/3 .
11. PHS 通訊系統定位技術之改善、共頻道干擾之評估以及 PHS/WiMAX 雙模行動醫療看護系統之製作(3/4), 98/3-99/3.

(d)專書論文

1. "Development and Evaluation of a QR Code and Augmented Reality Supported Mobile English Learning System", Springer, 出版日期：2010/4/7, ISBN：9783642123481 (3642123481)

王永鐘　教授　*Yung-Chung Wang*

研究室名稱：網路通訊研究室 CyberNet Network Laboratory

聯絡電話：02-2771-2171 #2123

E-mail：ycwang@ee.ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=989

研究聚焦領域：■H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電腦網路、光纖網路、無線網路、排隊理論

近年重要論文及著述

(a)期刊論文

1. "Simpler throughput analysis of CDMA/Unslotted ALOHA radio networks with variable message length based on M/M/inf queueing model", Wireless Personal Communications, 153-162, 2010/4/1
2. "An Adaptive Routing Algorithm over Packet Switching Networks for Operation Monitoring of Power Transmission Systems", IEEE Transactions on Power Delivery, 882-890, 2010/4/1
3. "Loss pattern of DBMAP/DMSP/1/K queue and its application in wireless local communications", Applied Mathematical Modeling, 1782-1798, 2011/4/1
4. "A hybrid framework for fault detection, classification, and location—part I concept, structure, and methodology", IEEE Transactions on Power Delivery, 1988-1998, 2011/7/1
5. "A hybrid framework for fault detection, classification, and location—part II implementation and test results", IEEE Transactions on Power Delivery, 1999-2008, 2011/7/1
6. "Throughput of DS-CDMA/unslotted ALOHA radio networks with Markovian arrival processes", International Journal of Communication Systems, 369–379, 2013/3/1
7. "Throughput Analysis of DS CDMA/Unslotted ALOHA Wireless Networks with Fixed Packet Length in Rayleigh Fading Finite-State Markov Channel Model", Wireless Personal Communications, 3091-3104, 2013/8/1
8. "Elucidating the Short Term Loss Behavior of Markovian-Modulated Batch-Service Queueing Model with Discrete-Time Batch Markovian Arrival Process", Mathematical Problems in Engineering, 2014/3/1
9. "Performance Evaluation of Mobility Anchor Point with Guard Load Reservation in Hierarchical Mobile IPv6", Journal of electronic science and technology, 2014/9/1
10. "Throughput of Coded DS CDMA/Unslotted ALOHA Networks with Variable Length Data Traffic and Two User Classes in Rayleigh Fading FSMC Model" KSII Transaction

on Internet and Information Systems, 2014/12/1

(b)研討會論文

1. "Sojourn-time Analysis on Congestion in DBMAP/DMSP/1/K Queue", The 5rd Asia-Pacific Symposium on Queuing Theory and Network Applications, Beijing, 2010/7/24
2. "Performance Evaluation of FL-net over Ethernet for Networked Control System", ICSAI, Yantai, 2012/5/19
3. "Fault Tolerance of Multihoming in FL-net for Nuclear Instrument and Control Environment", IETICT 2013, Beijing, 2013/4/27
4. "Request-based dynamic bandwidth allocation of gigabit passive optical network", International Symposium on Photonics and Optoelectronics (SOPO 2013), Beijing, 2013/5/23

(c)研發與產學合作計畫

1. SNMP 與 Modbus UDP 模組功能研究與實作, 98/9-100/10
2. 無線感測器網路平台軟韌體核心技術開發與實地佈建:植物疫情動態監測網 1/3, 99/1-99/10
3. 無線感測器網路平台軟韌體核心技術開發與實地佈建：植物疫情動態監測網(2/3), 99/11-100/10
4. 高速無線感測器網路節點立體定位演算法與周邊元件設計與展示平台實現, 100/8-101/7
5. 高速無線感測器網路節點立體定位演算法與周邊元件設計與實現, 101/8-102/7
6. 101 年度教育部技職校院獎勵大學教學卓越計畫專屬網頁維運計畫, 101/4-102/3
7. ERP 雲端系統建置及行動裝置 Apps 研發, 102/2-103/1
8. 102-103 年度技職校院獎勵科技大學及技術學院教學卓越計畫管考平臺計畫, 102/4-103/12
9. 新北市政府教育局在地技職耘計畫「職」上雲端技職資訊揚才暨「校務行政系統」高中職端專設模組開發整合, 102/6-102/12
10. 新北市政府教育局 103 學年度高中職校務行政系統維護計畫, 103/8-104/7
11. 視訊會議桌面分享技術性能優化設計與實現, 104/8-105/7
12. 104 年度技檅校院獎勵科技大學及技術學院教學卓越計畫管考平臺計畫, 104/1-104/12
13. 輕量化虛擬平台與 SDN SCTP 負載平衡研究, 104/1-104/12
14. 105 學年度技專校院增調院所系科學位學程及招生名額審查作業, 104/3-105/3
15. 104 年大專校院學生會交流平臺管理及維護, 104/4-104/12

曾國雄　教授　*Kuo-Hsiung Tseng*

研究室名稱：能源管理研究室

聯絡電話：02-2771-2171 #2173

E-mail：khtseng@ee.ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~f10473/Lab-219/index.htm

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電力工程、能源監控與管理、奈米能源科技與應用

近年重要論文及著述

(a)期刊論文

1. "Sliver carbonate and stability in colloidal silver: a by-product of the electric spark discharge method", Journal of Alloys and Compounds, 438-440, 2010/3/1
2. "Structural Planning and Implementation of a Microprocessor-based Human–machine Interface in a Steam-explosion Process Application", Computer Standards & Interfaces, 232-248, 2011/3/1
3. "Production of Silver Ions from Colloidal Silver by Nanoparticle Iontophoresis System", Journal of Nanoscience and Nanotechnolog, 1991-1995, 2010/5/1
4. "Study of the Inspection of Power Demand Equipment and Life Time of Usage", Journal of Mechanical and Electrical Work-Field Technique, 117-124, 2010/8/1
5. "Pulsed Spark-Discharge Assisted Synthesis of Colloidal Gold Nanoparticles in Ethanol", Journal of Nanoparticle Research, 2963-2972, 2011/7/1
6. "Continuous Synthesis of Colloidal Silver Nanoparticles by Electrochemical Discharge in Aqueous Solutions", Journal of Nanoparticle Research, 1865-1872, 2011/5/1
7. "Mitigating 161-kV Electromagnetic Potential Transformers' Ferroresonance with Damping Reactors in a Gas Insulated Switchgear", Journal of IET Generation Transmission & Distribution, 479–488, 2011/4/1
8. "A Novel Structural Modeling and Analysis of VLSI Interconnect with an RLC Tree Network System using a BG/SEBD Approach", Science in China Series F- Information Sciences, Published online, 1968-1985, 2011/6/1
9. "大樓機電及消防安全設備對防火安全之評估", 機電現場技術, 81-92, 2011/6/1
10. "Production of Silver Ions from Colloidal Silver by Nanoparticle Iontophoresis System", Journal of Nanoscience and Nanotechnology, 1991-1995, 2011/3/1
11. "A Novel Concept for Simplified Model of a Three- Phase AC-DC Converter Using PFC-Controlled Property", IEICE Transactions on Fundamentals of Electronics Communications and Computer Sciences, 1937-1947, 2011/10/1

12. "GPS Application in Current Phase Comparison of Differential Protection Relay of Power Transmission Line", Electric Power Components and Systems, 1621-1631, 2011/11/1
13. "Control Release of Bactericidal Ion by An Electronically Driven System", Journal of Nanoscience and Nanotechnology, 10750-10754, 2011/12/1
14. "Lighting Color Differences of LED Roadway Lamps and Regular Roadway Lamps", Advanced Materials Research, pp.4003-4007, 2012/1/1
15. "A Study of Biomass Material Pretreatment by Microwave-based Heating", Advanced Materials Research, pp. 2991-2995, 2012/1/1
16. "常見室內裝修與消防安全設備界面影響", 機電現場技術, pp.22-30, 2012/6/1
17. "綜觀可再生能源及其發電技術", 電機能源論壇, pp.26-35, 2012/7/1
18. "Optimization of Microwave-Based Heating of Cellulosic Biomass Using Taguchi Method", Materials, pp.3404-3419, 2013/8/1
19. "Preparation of Metallic Aluminum Compound Particles by Submerged Arc Discharge Method in Aqueous Media", Metallurgical and Materials Transactions B, pp.91-97, 2013/2/1
20. "Development and Evaluation of a Wide Range Impulse Current Generator for Surge Arrester Testing", IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, pp.713-720, 2013/3/1
21. "Rapid and Efficient Synthesis of Silver Nanofluid Using Electrical Discharge Machining", Journal of Nanomaterials, pp.1-6, 2013/3/1
22. "直流電弧爐諧波電流與電壓閃爍改善之研究", 電機能源論壇, pp.56-63, 2013/3/1
23. "氣封絕緣開關電磁斷路器建模分析與改善", 電機能源論壇, pp.21-27, 2013/3/1
24. "住宅大樓小型斷路器用電安全之研究", 電機能源論壇, 6, 2014/5/1
25. "Analysis and Improvement of Modeling of Electromagnetic Actuator for Medium Voltage Gas Insulated Switchgear", Electric Power Components and Systems, 1576-1586, 2014/9/1
26. "A Study of Antibioactivity of Nanosilver Colloid and Silver Ion Solution", Advances in Materials Science and Engineering, 1-6, 2014/9/1
27. "Analysis and Improvement of Modeling of Electromagnetic Actuator for Medium Voltage Gas Insulated Switchgear", Advances in Materials Science and Engineering, 1576-1586, 2014/9/1
28. "高壓供電計費電表組錯誤接線診斷之研究", 電機能源論壇, 50-26, 2015/1/1

(b)研討會論文

1. "Control Release of Bactericidal Ion by an Electronically Driven System", 2010 IEEE International NanoElectronics Conference, Hong Kong, 2010/1/3

2. "Modeling and Analysis of π-Type Circuit Power Cable Using Bond Graphs/SEBD Subsystems-Interconnected Approach", 2010 National Symposium on System Science and Engineering, Taipei, 2010/7/1
3. "Microwave Heating Modeling in Biomass Material Using System Identification", 2010 National Symposium on System Science and Engineering, Taipei, 2010/7/1
4. "以 OPLC 法對動力馬達之人機介面與控制之規劃與建置", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
5. "用電設備檢測與使用壽命之研究", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
6. "電力調度 SCADA 模組化設計與建置之研究", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
7. "斷路器用電磁驅動器模型之建立與驗證", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
8. "以轉子電流實現新型雙饋型感應發電機之控制", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
9. "以鍵結圖法進行功率因數校正電路之模擬研究", 2011 第十屆台灣電力電子研討會, 桃園, 2011/9/2
10. "Modeling and Analysis of Belt Conveyor Using Bond Graph Approach", 2011 6th IEEE Conference on Industrial Electronics and Application, Beijing, 2011/6/21
11. "Preparation of Metal Nano-Fluid via Electrical Discharge Machining", 2011 6th IEEE Conference on Industrial Electronics and Application, Beijing, 2011/6/21
12. "應用全球定位系統對輸配電線路差動電驛電流對相之量測", 中華民國第三十二屆電力工程研討會, 桃園, 2011/12/2
13. "以鍵結圖法進行實際開關與理想開關電路之模擬研究", 中華民國第三十二屆電力工程研討會, 桃園, 2011/12/2
14. "以鍵結圖建模分析中壓斷路器電磁驅動器機構作動之特性", 中華民國第三十二屆電力工程研討會, 桃園, 2011/12/2
15. "電路模擬在三相功率因數校正電路建模與研究", 中華民國第三十二屆電力工程研討會, 桃園, 2011/12/2
16. "Measurement and Analysis of GPS Application in Current Phase", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7
17. "Ferroresonance Analysis, Suppression Methods and Thermal Capacity of 161 kV Electromagnetic Potential Transformer", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7

18. "醫療儀器電力諧波分析與改善之研究", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7
19. "智慧家庭 SIP 控制主機系統設計與開發", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7
20. "應用創新的鍵結圖模型建立時變開關元件之建模-以電源轉換器為例", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7
21. "The Analysis of Regenerative Breaking Power for Taipei Rapid Transit Systems Electrical Multiple Units", Proceedings of the 2012 International Conference on Mching and Cybernetics, Xian, 2012/7/15
22. "Human Machine Interface Applications in Thermal Power Plants", Proceedings of 2012 International Congress on Engineering and Information(ICEAI), Shanghai, 2012/8/16
23. "中壓氣封絕緣開關設備之多功能記錄器的應用整合探討", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7
24. "CIEDE2000 應用於對色燈箱光源差異性之比較及研究", 100 年度台灣照明學會年會論文集, 台北, 2012/2/17
25. "Preparation of Alumina Nanoparticles by Electrical Discharge Machining", 2014 9th IEEE Conference on Industrial Electronics and Applications, 杭州, 2014/6/9
26. "Nano Silver Colloid Prepared by Electrical Spark Discharge and its Antibioactivity Study", 2014 ICME International Conference on Complex Medical Engineering, Taipei, 台北, 2014/6/26
27. "A Case Study of Mechatronics Human Machine Interface Technology Development Research for Diesel Generator Engine Power Plant", 2014 9th IEEE Conference on Industrial Electronics and Applications, 杭州, 2014/6/9
28. "Nano Silver Colloid Prepared by Electrical Spark Discharge and its Antibioactivity Study", 2014 ICME International Conference on Complex Medical Engineering Taipei, 台北, 2014/6/26
29. "Preparation of Alumina Nanoparticles by Electrical Discharge Machining", 2014 9th IEEE Conference on Industrial Electronics and Applications, 杭州, 2014/6/9
30. "Smart Home System Design And Implementation", The 35th Symposium on Electrical Power Engineering, Kaohsiung, 2014/12/5
31. "Base on Average Circuit Method Applied to the DC-DC Converter Topology Analysis", The 2014 13th Taiwan Power Electronics Conference & Exhibition, Taipei, 2014/9/4

(c)研發與產學合作計畫

1. 太陽能光電發電系統與熱水儲能系統整合之研究, 103/1-103/12
2. 臺北市新設 LED 路燈量測與照明成效評估(II), 103/1-103/12

3. 臺北市新設 LED 路燈量測與照明成效評估(I), 102/9-102/12
4. 熱治療中假體電導係數與區域溫度分佈之研究, 102/8-103/7
5. 核二廠 345KV 開關場 GDS 之 EMTP 模擬分析（II), 102/5-103/1
6. 商業空間光環境品質量測評估, 102/5-103/4
7. 核一電廠 345KV 設備更新與安裝等財物購置案-GDS 之 EMTP 模擬分析, 102/1-102/8
8. 熱治療中假體發熱紅外線光譜研究, 101/8-102/7
9. Citect 人機介面監控系統應用, 101/9-101/10
10. 臺北市 LED 道路燈具量測及照明成效研究, 101/3-102/2
11. 熱治療中假體之製作及量測, 100/8-101/7
12. 臺北市 LED 路燈量測及照明成效評估, 100/3-101/2
13. 臺北市學校設置太陽能光電發電系統績效評估, 100/1-100/5
14. 跨平台航務系統轉移工程開發與應用, 100/1-100/12
15. 核二廠 345kV 開關場整場之非常快速暫態過電壓分析與影響評估, 99/11-100/6
16. 應用 GPS 對輸配電線路差動保護電驛電流對相之研究, 99/10-100/9
17. 高壓樹脂型變壓器 1250kVA 故障評估, 99/8-99/10
18. LED 路燈標準及道路照明成效評估研究, 99/3-100/2

張陽郎　教授　*Yang-Lang Chang*

研究室名稱：圖形識別與電子設計自動化研究室

聯絡電話：02-2771-2171 #2156

E-mail：ylchang@ntut.edu.tw

網址：http://predal.ee.ntut.edu.tw/

研究聚焦領域：□H健康科技■ I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：圖形識別、高效能平行計算、影像處理、高光譜遙測影像、數位系統

近年重要論文及著述

(a)期刊論文

1. "A Simulated Annealing Feature Extraction Approach for Hyperspectral Images", Future Generation Computer Systems, 419–426, 2011/2/1
2. "Simulated annealing band selection approach for hyperspectral imagery", Journal of Applied Remote Sensing, , 2010/12/1
3. "High Performance Computing for Hyperspectral Remote Sensing", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 528-544, 2011/9/1
4. "Accelerating Regular LDPC Code Decoders on GPUs", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 653-659, 2011/9/1
5. "SAR Image Simulation with Application to Target Recognition", Progress In Electromagnetics Research, 35-57, 2011/7/1
6. "Vision-based Finger Detection, Tracking, and Event Identification Techniques for Multi-touch Sensing and Display Systems", Sensors, 6868-6892, 2011/7/1
7. "Group and Region Based Parallel Compression Method Using Signal Subspace Projection and Band Clustering for Hyperspectral Imagery", IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., 565-578, 2011/9/1
8. "A Parallel Simulated Annealing Approach to Band Selection for High-Dimensional Remote Sensing Images", IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., 579-590, 2011/9/1
9. "Parallel Tsunami Simulation and Visualization on Tiled DisplayWall Using OpenGL Shading Language", Journal of the Chinese Institute of Engineers, accepted, 2011/8/1
10. "Parallel Positive Boolean Function Approach to Classification of Remote Sensing Images", Journal of Applied Remote Sensing, 051505, 2011/12/1
11. "Digital Signal Processor-based 3D Wavelet Error-resilient Lossless Compression of High-resolution Spectrometer Data", Journal of Applied Remote Sensing, 051504, 2011/11/1
12. "High-Performance Computing and Visualization of Earthquake Simulations and

Ground-Motion Sensor Network Data", Journal of Applied Remote Sensing, 2012/4/1

13. "High-Performance Visual Analytics of Terrestrial LIDAR Data on Large Display Wall", Journal of Applied Remote Sensing, 2012/4/1
14. "GPU Acceleration of Tsunami Propagation Model", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 1014 - 1023, 2012/6/1
15. "Parallel Tsunami Simulation and Visualization on Tiled Display Wall Using OpenGL Shading Language", Journal of the Chinese Institute of Engineers, pp. 1–10, 2013/1/1
16. "Hyperspectral Image Classification Using Nearest Feature Line Embedding Approach", IEEE Transactions on Geoscience and Remote Sensing, pp. 278 - 287, 2014/1/1
17. "Hyperspectral band selection based on parallel particle swarm optimization and impurity function band prioritization schemes", Journal of Applied Remote Sensing, 2014/10/1
18. "Multisource Data Fusion and Fisher Criterion Based Nearest Feature Space Approach to Landslide Classification", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2014/11/1
19. "High-Performance Meshing Processing of Remote Sensing Data on Large Displays", Journal of Applied Remote Sensing, 2014/12/1
20. "Ensemble Empirical Mode Decomposition Parameters Optimization for Spectral Distance Measurement in Hyperspectral Remote Sensing Data", Remote Sensing, pp. 2069-2083, 2014/3/1

(b)研討會論文

1. "Parallel GPU Implementation of K-way Tree Classification based on Semi-Greedy Structure Applied to Multisource Remote Sensing Images", Progress In Electromagnetics Research Symposium 2010, The 27th PIERS, 西安, 2010/3/22
2. "A Group and Region Based Compression Method for Hyperspectral Imagery", IEEE International Geoscience and Remote Sensing Symposium IGARSS '10, Honolulu, Hawaii, 2010/7/25
3. "Parallel K-D Tree Classification Based on Semi-Matroid Structure for Remote Sensing Applications", SPIE, Satellite Data Compression, Communications, and Processing VI (8710), San Diego, CA, 2010/8/1
4. "High-Throughput GPU-Based LDPC Decoding", SPIE, Satellite Data Compression, Communications, and Processing VI (8710), San Diego, CA, 2010/8/1
5. "An Implementation of KML Automatic Update Scheme", 2010 Remote Sensing Symposium Across Taiwan Strait, Chungli, Taiwan, 2010/3/15
6. "Parallel Band Selection Based on Approximation Algorithm Applied to Multisource Remote Sensing Images", 2010 Remote Sensing Symposium Across Taiwan Strait, Chungli, Taiwan, 2010/3/15
7. "Band Selection for Hyperspectral Images Based on Impurity Function", in Proc. of IEEE

International Geoscience and Remote Sensing Symposium IGARSS '11, Vancouver, 2011/7/24

8. "Design of GPU-Based Platform for LDPC Decoder", in Proc. of IEEE International Geoscience and Remote Sensing Symposium IGARSS '11, Vancouver, 2011/7/24
9. "Satellite SAR System and Image Simulations by a GPU-based Algorithm", in Proc. of Progress In Electromagnetics Research Symposium, The 30th PIERS, Suzhou, 2011/9/12
10. "Volume Data Numerical Integration and Differentiation Using CUDA", 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing, Tainan, 2011/12/7
11. "Efficient GPU implementation of tsunami simulation", SPIE High-Performance Computing in Remote Sensing Conference (8183), 布拉格, 2011/9/19
12. "Accelerating the Kalman Filter on a GPU", 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing, Tainan, 2011/12/7
13. "Visual Analytics of Terrestrial LIDAR Data for Cliff Erosion Assessment on Large Displays", in Proc. of SPIE, Satellite Data Compression, Communications, and Processing VII (8157), San Diego, 2011/8/23
14. "Impurity Function Band Prioritization for Hyperspectral Imagery", 2011 Remote Sensing Symposium Across Taiwan Strait, , 哈爾濱, 2011/8/8
15. "Detecting landslide location and its application to landslide susceptibility mapping", 2011 Remote Sensing Symposium Across Taiwan Strait, 哈爾濱, 2011/8/8
16. "GPU-BASED ENSEMBLE EMPIRICAL MODE DECOMPOSITION APPROACH TO SPECTRUM DISCRIMINATION", IEEE 4th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS 2012),上海, 2012/6/4
17. "GPU Parallel Computing of Spherical Panorama Video Stitching", IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2012), Singapore, 2012/12/17
18. "Parallel and Distributed Processing of Remote Sensing Data on Large Displays", IEEE 4th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS 2012), Singapore, 2012/12/16
19. "Nearest feature line embedding approach to hyperspectral image classification", SPIE, Satellite Data Compression, Communications, and Processing VIII (8514), 12 - 13 August 201, , San Diego, 2012/8/12
20. "An Object Identification System for Assisting the Elder People", 2012 台日智慧橘綠(iGO)科技研討會, 苗栗, 2012/12/10
21. "Parallel Particle Swarm Optimization for Hyperspectral Band Selection", 2012 台日智慧橘綠(iGO)科技研討會, 苗栗, 2012/12/10

22. "Ensemble Empirical Mode Decomposition for Discrimination of High-Dimensional Data", 2012 台日智慧橘綠(iGO)科技研討會，苗栗, 2012/12/10
23. "航遙測圖資倉儲與雲端服務的建置"，第七屆海峽兩岸測繪發展研討會論文，香港, 2013/11/21
24. "MULTISOURCE DATA FUSION FOR IMAGE CLASSIFICATION USING FISHER CRITERION BASED NEAREST FEATURE SPACE APPROACH", IEEE International Geoscience and Remote Sensing Symposium 2013, Melbourne, 2013/7/21
25. "SIMULATION OF TSUNAMI IMPACT ON TAIWAN COASTAL AREA", IEEE International Geoscience and Remote Sensing Symposium 2013, Melbourne, 2013/7/21
26. "MULTISOURCE DATA FUSION FOR IMAGE CLASSIFICATION USING NEAREST FEATURE SPACE APPROACH"，第 12 屆離島資訊技術與應用研討會, 金門, 2013/5/24
27. "PARTICLE SWARM OPTIMIZATION APPLIED TO HYPERSPECTRAL BAND SELECTION"，第 12 屆離島資訊技術與應用研討會，金門, 2013/5/24
28. "Fisher criterion based nearest feature line approach to land cover classification using multi source data fusion", SPIE, Satellite Data Compression, Satellite Data Compression, Communications, and Processing IX, , San Diego, CA, 2013/8/26
29. "An efficient classification by signal subspace projection and partial filtering for hyperspectral images", SPIE, Satellite Data Compression, Satellite Data Compression, Communications, and Processing IX, San Diego, CA, , 2013/8/26
30. "Parallel processing of point cloud registration", SPIE, Satellite Data Compression, Satellite Data Compression, Communications, and Processing IX, San Diego, CA, 2013/8/26
31. "Particle Swarm Optimization-based Impurity Function Band Prioritization Using Weighted Majority Voting for Feature Extraction of High Dimensional Data Sets", IEEE International Workshop on Parallel and Distributed Computing in Geoscience and Remote Sensing (IEEE PDCGRS 2013), Seoul, 2013/12/15
32. "An efficient classification by signal subspace projection and partial filtering for hyperspectral images (Conference Proceedings) An efficient classification by signal subspace projection and partial filtering for hyperspectral images", SPIE 8871, Satellite Data Compression, Communications, and Processing IX, 887108, San Diego, 2014/1/10
33. "An adaptive filtering based on generalized sidelobe cancellation for target detection of hyperspectral images", SPIE 9124, Satellite Data Compression, Communications, and Processing X, 91240G, Baltimore, Maryland, 2014/5/22
34. "A Priori Study of Using Spatial Data Mining Technology with FORMOSAT-2 Imagery for Analyzing Potential Landslide-causing Factors", The 35th Asian Conference on REMOTE SENSING 2014, Nay Pyi Taw, 2014/10/27

(c)研發與產學合作計畫

1. 高效能 GPU 可視化海嘯模擬與遙測影像資料融合應用於台灣海岸震後災害評估, 102/8-103/7
2. 聯網電視關鍵技術之研發及其應用－子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(3/3), 102/5-103/7
3. 地震資料可視化之巨觀且聚焦技術研發, 101/8-102/7
4. 高效能全天候 SAR 遙測影像運用於崩塌地潛勢評估研究, 101/8-102/7
5. 聯網電視關鍵技術之研發及其應用—子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(2/3), 101/5-102/4
6. 聯網電視關鍵技術之研發及其應用—子計畫三：聯網電視之 Android 行動終端裝置的分散式整合運算模式與省電設計之研究(2/3), 101/5-102/4
7. 高效能遙測影像雲端計算技術應用於地質分析及災害管理之方法研究, 100/8-101/7
8. 時變地震資料可視化與聚焦傳遞函數最佳化, 100/8-101/7
9. 聯網電視關鍵技術之研發及其應用－子計畫三：聯網電視之 Android 行動終端裝置的分散式整合運算模式與省電設計之研究(1/3), 100/8-101/7
10. 聯網電視關鍵技術之研發及其應用－子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(1/3), 100/5-101/4
11. Android 上以系統即時資訊為基礎並採用機器學習之低功耗作業系統核心軟體設計之研究, 99/8-100/7
12. 用於視障之廚房條碼辨識讀出及遠端資料庫存取 1/2, 99/8-100/7
13. 建構多源遙測影像高效能運算整合平台應用於崩塌地之判識研究, 99/8-100/7
14. 一個支援教學評量的無線平台, 98/8-99/7
15. 可攜式裝置上具備軟硬體資訊回饋機制且考慮額外負擔之動態電壓頻率調整低功耗系統設計之研究, 98/8-99/7
16. 應用遙測影像資料於台灣崩塌地變遷及其敏感度分析之研究, 98/8-99/7
17. 高效能 GPU 可視化海嘯模擬與遙測影像資料融合應用於台灣海岸震後災害評估, 102/8-103/7
18. 聯網電視關鍵技術之研發及其應用－子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(3/3), 102/5-103/7
19. 地震資料可視化之巨觀且聚焦技術研發, 101/8-102/7

20. 高效能全天候 SAR 遙測影像運用於崩塌地潛勢評估研究, 101/8-102/7
21. 聯網電視關鍵技術之研發及其應用─子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(2/3), 101/5-102/4
22. 聯網電視關鍵技術之研發及其應用─子計畫三：聯網電視之 Android 行動終端裝置的分散式整合運算模式與省電設計之研究(2/3), 101/5-102/4
23. 高效能遙測影像雲端計算技術應用於地質分析及災害管理之方法研究, 100/8-101/7
24. 時變地震資料可視化與聚焦傳遞函數最佳化, 100/8-101/7
25. 聯網電視關鍵技術之研發及其應用－子計畫三：聯網電視之 Android 行動終端裝置的分散式整合運算模式與省電設計之研究(1/3), 100/8-101/7
26. 聯網電視關鍵技術之研發及其應用－子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(1/3), 100/5-101/4
27. Android 上以系統即時資訊為基礎並採用機器學習之低功耗作業系統核心軟體設計之研究, 99/8-100/7
28. 用於視障之廚房條碼辨識讀出及遠端資料庫存取 1/2, 99/8-100/7
29. 建構多源遙測影像高效能運算整合平台應用於崩塌地之判識研究, 99/8-100/7
30. 一個支援教學評量的無線平台, 98/8-99/7
31. 可攜式裝置上具備軟硬體資訊回饋機制且考慮額外負擔之動態電壓頻率調整低功耗系統設計之研究, 98/8-99/7
32. 應用遙測影像資料於台灣崩塌地變遷及其敏感度分析之研究, 98/8-99/7
33. 高頻譜影像目標偵測、分類和壓縮之平行演算法則研究, 97/8-98/7
34. 提昇技職校院學生通識教育及語文應用能力改善計畫(第三年), 98/8-99/7
35. 第一銀行工會「101 年度優良經理人評鑑」資料庫, 101/2-101/4
36. 經濟部科技研究發展專案學研聯合研究計畫-低耗能、輕型合成孔徑雷達開發之可行性研究, 98/8-99/7

其他表現

(a)獎項榮譽:

1. 102 學年度指導碩士班傅義翔同學，獲選 IEEE Geoscience & Remote Sensing Society, Taipei Chapter 台北支會 2013 年度最佳論文獎，論文題目 GPU-acceleration of Nearest Feature Space Classifier for Hyperspectral Images。
2. 101 學年度指導碩士班徐斌峰同學，獲選 IEEE Geoscience & Remote Sensing Society,

Taipei Chapter 台北支會 2012 年度最佳論文獎，論文題目 Band Selection for Hyperspectral Images Based on Impurity Function。

3. 100 學年度指導博士班黃敏彧同學，獲選 IEEE Geoscience & Remote Sensing Society, Taipei Chapter 台北支會 2011 年度最佳論文獎，論文題目基於 GPU 之 LDPC 架構的分析應用。
4. 擔任國際研討會議主席 Workshop Chair, 2013 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2013) in conjunction with IEEE 19th International Conference on Parallel and Distributed Systems (ICPADS 2013), December 15-18, 2013, Seoul, Korea。
5. 擔任國際研討會議主席 Workshop Chair, IEEE 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2011), in conjunction with ICPADS 2011 IEEE 17th International Conference on Parallel and Distributed Systems, pp. 1016 - 1020, December 7-9, 2011 , Tainan, Taiwan。
6. 擔任國際研討會議議程委員 Conference Program Committee, High-Performance Computing in Remote Sensing III, 23 September 2013, Dresden, Germany.
7. 擔任國際研討會議議程委員 Conference Program Committee, Satellite Data Compression, Communications, and Processing IX, 25 August 2013.San Diego, California, USA.
8. 擔任國際研討會議議程委員 Conference Program Committee, High-Performance Computing in Remote Sensing II, 24 September 2012, Edinburgh, United Kingdom.
9. 擔任國際研討會議議程委員 Conference Program Committee, Satellite Data Compression, Communications, and Processing VIII, 12 August 2012 San Diego, California.
10. 擔任國際研討會議議程委員 Conference Program Committee, High-Performance Computing in Remote Sensing, 19 September 2011, Prague, Czech Republic.
11. 擔任國際研討會議議程委員 Conference Program Committee, Satellite Data Compression, Communications, and Processing VII, 21 August 2011, San Diego, California.
12. 擔任國際研討會議 Session 主席 Conference Session Chair: Remote Sensing of Land Deformation and Floods, 2011 IEEE International Geoscience & Remote Sensing Symposium - IGARSS 2011, July 24-29, 2011, Vancouver, Canada。
13. 擔任 2012-2014 IEEE GRSS GRS29 Taipei Chapter 台北支會主席。
14. 擔任 2011 IEEE GRSS GRS29 Taipei Chapter 台北支會秘書長。

黃紹華　教授　*Show-Hwa Hwang*

研究室名稱：北科大網路電信研究中心

聯絡電話：02-2771-2171 #2178#123

E-mail：hsf@ntut.edu.tw

網址：http://www.iptnet.net/

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：數位訊號處理、語音訊號處理、網路電信系統

近年重要論文及著述

(a)期刊論文

1. "Vector Quantisation Based on a Quasi-Binary Search Algorithm", IET Proceeding on Image Processing, 8, 2010/7/1
2. "A Consistency Analysis on an Acoustic Module for Mandarin Text-to-Speech", Speech Communication, Elsvier, , 2012/8/1
3. "An Efficient Algebraic Codebook Search Method in G.729 Speech Codec", Information-An International Interdisciplinary Journal, , 2012/2/1
4. "An Improvement of the Triangular Inequality Elimination Algorithm for Vector Quantization", Applied Mathematics & Information Sciences, , 2012/1/1
5. "A Method for Improving TIE-based VQ Encoding Introducing RI Rules", IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences, pp, 2013/9/1

(b)研討會論文

1. "Symmetric NAT Traversal Method for Session Initial Protocol (SIP)", ICETI-2012, 高雄, 2012/11/2
2. "Performance Analysis and Improvement on SIP-Based VoIP Server", ICETI-2012, 高雄, 2012/11/2
3. "The Dynamic LMS for Line Echo Cancellation", ICETI-2012, 高雄, 2012/11/2
4. "An Improvement to Tree-Structured Vector Quantization", ICETI-2012, 高雄, 2012/11/2

(c)研發與產學合作計畫

1. 下世代 IP 電信關鍵技術研發與系統建置計畫〔III〕, 103/5-104/4
2. 下世代 IP 電信關鍵技術研發與系統建置計畫〔II〕, 102/6-103/5
3. NAT 穿越法於 RTSP 協定之研究與實作, 101/8-102/7
4. 下世代 IP 電信關鍵技術研發與系統建置計畫〔I〕, 101/5-102/4

5. 先進網路電信系統之研發與實作計畫〔III〕, 100/8-101/7
6. 先進網路電信系統之研發與實作計畫〔II〕, 99/8-100/7
7. 以 SIP 為基礎之 C2C 協定研究設計與 RTP 為基礎之 Video Steaming 實作試煉, 99/8-100/7
8. 下世代 IP 電信關鍵技術研發與系統建置計畫〔III〕, 103/5-104/4
9. 下世代 IP 電信關鍵技術研發與系統建置計畫〔II〕, 102/6-103/5
10. NAT 穿越法於 RTSP 協定之研究與實作, 101/8-102/7
11. 下世代 IP 電信關鍵技術研發與系統建置計畫〔I〕, 101/5-102/4
12. 先進網路電信系統之研發與實作計畫〔III〕, 100/8-101/7
13. 先進網路電信系統之研發與實作計畫〔II〕, 99/8-100/7
14. 以 SIP 為基礎之 C2C 協定研究設計與 RTP 為基礎之 Video Steaming 實作試煉, 99/8-100/7
15. 下世代 IP 電信關鍵技術研發與系統建置計畫(5/5), 105/5-106/4
16. 下世代 IP 電信關鍵技術研發與系統建置計畫(4/5), 104/5-105/4
17. 下世代 IP 電信關鍵技術研發與系統建置計畫(3/5), 103/5-104/4
18. 網路電話研究案Ⅱ, 103/4-104/10
19. 下世代 IP 電信關鍵技術研發與系統建置計畫(2/5), 102/5-103/4
20. 高速密碼文件計算整合中控系統, 102/2-102/12
21. 下世代 IP 電信關鍵技術研發與系統建置計畫(1/5), 101/5-102/4
22. 網路電話研究案, 101/5-102/8
23. 微軟 IRM 防護機制研究, 101/3-101/11
24. 先進網路電信系統之研發與實作 3 年計劃, 100/5-101/4
25. 3G 手機存取 IP Camera 之點對點穿越防火牆技術-II, 99/9-100/4
26. 先進網路電信系統之研發與實作(II), 99/5-100/4
27. 網路電話系統建置計畫, 99/4-102/3
28. 下世代 IP 電信關鍵技術研發與系統建置計畫(5/5), 105/5-106/4
29. 下世代 IP 電信關鍵技術研發與系統建置計畫(4/5), 104/5-105/4
30. 下世代 IP 電信關鍵技術研發與系統建置計畫(3/5), 103/5-104/4
31. 網路電話研究案Ⅱ, 103/4-104/10
32. 下世代 IP 電信關鍵技術研發與系統建置計畫(2/5), 102/5-103/4
33. 高速密碼文件計算整合中控系統, 102/2-102/12

34. 下世代 IP 電信關鍵技術研發與系統建置計畫(1/5), 101/5-102/4
35. 網路電話研究案, 101/5-102/8
36. 微軟 IRM 防護機制研究, 101/3-101/11
37. 先進網路電信系統之研發與實作 3 年計劃, 100/5-101/4
38. 3G 手機存取 IP Camera 之點對點穿越防火牆技術-II, 99/9-100/4
39. 先進網路電信系統之研發與實作(II), 99/5-100/4
40. 網路電話系統建置計畫, 99/4-102/3

宋國明　教授　*Guo-Ming Sung*

研究室名稱：類比與數位晶片設計研究室

聯絡電話：02-2771-2171 #2121

E-mail：gmsung@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1155

研究聚焦領域：□H健康科技■I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：混合訊號晶片設計、類比晶片設計、通訊晶片設計、馬達控制晶片設計、磁場感測晶片設計

近年重要論文及著述

(a)期刊論文

1. "A resistor-compensation technique for CMOS bandgap and current reference with simplified start-up circuit", IEICE Trans. Electron., 4, 2011/4/1
2. "Mixed-mode chip implementation of digital space SVPWM with simplified-CPU and 12-Bit 2.56 Ms/s switched-current delta-sigma ADC in motor drive", IEEE Transactions on Power Electronics, 15, 2012/2/1
3. "Two-dimensional folded CMOS hall device with interacting lateral magnetotransistor and magnetoresistor", Sensors and Actuators A: Physical, 6-15, 2012/10/1
4. "Mixed-signal transmitter chip with digital bridge and analogue front-end for XDSL in home networks", IET Networks, 1-8, 2012/10/1
5. "CMOS Bandgap Reference and Current Reference with Simplified Start-Up Circuit", International Journal of Energy Science, 247-254, 2012/12/1
6. "A third-order switched-current delta-sigma modulator mwith analog error cancellation logic and digital comb filter", IEICE Transaction on Electronics, 595-603, 2013/4/1
7. "2-D differential folded vertical hall device fabricated on a p-type substrate using CMOS technology", IEEE SENSORS JOURNAL, 2253-2262, 2013/6/1
8. "Design and implementation of a low-cost scalar multiplier-on-chip for elliptic curve cryptosystem", Applied Mechanics and Materials, 3395-3400, 2013/1/1
9. "預測型直接轉矩控制系統晶片", 電機能源論壇, 64-71, 2013/3/1
10. "A third-order switched-current delta-sigma modulator mwith analog error cancellation logic and digital comb filter", IEICE Transaction on Electronics, 595-603, 2013/4/1
11. "2-D differential folded vertical hall device fabricated on a p-type substrate using cmos technology", IEEE SENSORS JOURNAL, 2253-2262, 2013/6/1
12. "A 10-bit 1.8 V 45 mW 100 MHz CMOS transmitter chip for use in an XDSL modem in a home network", Analog Integr Circ Sig Process, 515-527, 2014/9/1

(b)研討會論文

1. "與溫度無關的帶差參考電壓及參考電流晶片設計", 2010 智慧型系統工程應用研討會, 台南新市, 2010/5/6
2. "A new architecture of broadband network system suitable for ADSL application", 2010 International Conference on Networking and Digital Society, 溫州, 2010/5/30
3. "具網路橋接器與數位發射機之交流感應馬達控制混合訊號晶片的研製", 國科會工程處電力學門 98 年度專題研究計畫成果發表會, 高雄, 2010/10/23
4. "A 8-bit 50-Msamples/s switched-current pipelined ADC withresidue generator and interlaced stage", 2011 ICICDT IEEE International Conference on IC Design and Technology, 高雄, 2011/5/2
5. "A white LED Backlight Driving IC with 3-Bit Dimming Controller", 3rd Asia Symposium on Quality Electronics Design, 吉隆坡, 2011/7/19
6. "A 3.1-10.6 GHz Frequency Tunable Ultra Wideband LNA", 3rd Asia Symposium on Quality Electronics Design, 吉隆坡, 2011/7/19
7. "A Switched-Current Third-Order Oversampling Modulator with Coupled Differential Replica FMC", IEEE ASID 2012, 台北, 2012/8/24
8. "A Two-stage Cascode Class F CMOS Power Amplifier for Bluetooth", IEEE ASID 2012, 台北, 2012/8/24
9. "Two-Dimensional Folded Hall Sensor Fabricated in Standard CMOS Technology", IEEE SENSORS 2012, 台北, 2012/10/30
10. "射頻能量擷取系統晶片研究", 中華民國第三十三屆電力工程研討會, 台北, 2012/12/7
11. "用於感應馬達之改良預測型直接轉矩控制系統專用晶片", 中華民國第三十三屆電力工程研討會, 台北, 2012/12/7
12. "馬達控制網路用之低功率位址分類晶片研究", 中華民國第三十三屆電力工程研討會, 台北, 2012/12
13. "A 2.4-GHz/5.25-GHz CMOS Variable Gain Low Noise Amplifier Using Gate Voltage Adjustment", 2013 IEEE 56th International Midwest Symposium on Circuits and Systems (MWSCAS), Columbus, Ohio, USA, 2013/8/4
14. "A 9-Bit 123-MS/s Swiched-Current Pipelined ADC with OP Feedback and Offset Current Cancellation", 2013 IEEE 56th International Midwest Symposium on Circuits and Systems (MWSCAS), Columbus, Ohio, USA, 2013/8/4
15. "Reduction of Torque and Flux Variations Using Fuzzy Direct Torque Control System in Motor Drive", IEEE International Conference on Systwm, Man, and Cybernetics (SMC2013), Manchester, UK, 2013/10/13

16. "感應馬達控制用之十位元 200-MS/s 切換電流式管線型類比數位轉換器設計", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
17. "感應馬達控制用之格式轉換介面 ATM 與 Ethernet 封包處理專用晶片", 中華民國第 34 屆電力工程研討會, 台中市, 2013/12/6
18. "具速度回授控制之預測型直接轉矩控制系統晶片", 中華民國第 34 屆電力工程研討會, 台中市, 2013/12/6
19. "智慧型手機印刷電路板之輻射散溢與耐受防治研究", 中華民國第 34 屆電力工程研討會, 台中市, 2013/12/6
20. "A CMOS Transmitter Chip for Use in an XDSL Modem in a Home Network", 第 25 屆超大型積體電路設計暨計算機輔助設計技術研討會, 台中, 2014/8/5
21. "Predictive Direct Torque Control ASIC with Speed Feedback Controller", 第 25 屆超大型積體電路設計暨計算機輔助設計技術研討會, 台中, 2014/8/5
22. "High Speed Deficit Round Robin ASIC in ATM/Ethernet Bridge", 2014 IEEE International Conference on Systems, Man, and Cybernetics, San Diego, 2014/10/5
23. "Predictive Direct Torque Control ASIC with Speed Feedback Controller in Motor Drive", IEEE International Conference on Systwm, Man, and Cybernetics (SMC2014), San Diego, CA, 2014/10/5
24. "具有超高速數位用戶迴路功能之交流感應馬達控制混波晶片設計與製作", 102 年度科技部電力學門專題研究計畫成果發表會報告, 苗栗市, 2014/11/1
25. "使用 MCU 改善 LED PWM 驅動模式之效率研究", 中華民國第三十五屆電力工程研討會, 高雄市, 2014/12/5
26. "具模糊控制之預測型直接轉矩系統晶片設計", 中華民國第三十五屆電力工程研討會, 高雄市, 2014/12/5
27. "具有差額循環排程之 ATM 與 Ethernet 封包處理晶片設計", 中華民國第三十五屆電力工程研討會, 高雄市, 2014/12/5

(c)研發與產學合作計畫

1. 具有超高速數位用戶迴路功能之交流感應馬達控制混波晶片設計與製作, 101/8-102/7
2. 具有 XDSL 發射與接收功能之交流感應馬達控制混波晶片設計與製作, 100/8-101/7
3. 具有數位發射器與類比數位轉換器之交流感應馬達控制混合訊號晶片之研製, 99/8-100/7
4. 具網路橋接器與數位發射機之交流感應馬達控制混合訊號晶片的研製, 98/8-99/7

5. 具有超高速數位用戶迴路功能之交流感應馬達控制混波晶片設計與製作, 101/8-102/7
6. 具有 XDSL 發射與接收功能之交流感應馬達控制混波晶片設計與製作, 100/8-101/7
7. 具有數位發射器與類比數位轉換器之交流感應馬達控制混合訊號晶片之研製, 99/8-100/7
8. 具網路橋接器與數位發射機之交流感應馬達控制混合訊號晶片的研製, 98/8-99/7
9. 具高速數位迴路數據機之交流馬達控制混波積體電路研製(2/3), 96/8-97/7
10. 切換電容式與切換電流式技術在液晶顯示面板上之省能研究與其晶片製作, 96/5-97/4
11. 103 年度產業園區廠商升級轉型再造計畫之學校協助產業園區專案計畫, 103/3-103/11
12. 磁場感測器及其應用- Phase II, 103/3-104/2
13. 電動三輪車驅動晶片, 103/2-104/2
14. 脈波產生器矽智財數位電路, 101/10-101/12
15. 磁場感測器及其應用－ Phase I, 101/10-102/12
16. 「智慧緊急照明裝置」產學合作計畫, 101/6-101/9
17. 103 年度產業園區廠商升級轉型再造計畫之學校協助產業園區專案計畫, 103/3-103/11
18. 磁場感測器及其應用- Phase II, 103/3-104/2
19. 電動三輪車驅動晶片, 103/2-104/2
20. 脈波產生器矽智財數位電路, 101/10-101/12
21. 磁場感測器及其應用－ Phase I, 101/10-102/12
22. 「智慧緊急照明裝置」產學合作計畫, 101/6-101/9

胡國英　教授　*Kuo-Ing Hwu*

研究室名稱：先進電力電子控制　Advanced Power Electronics Control

聯絡電話：02-2771-2171 #2159

E-mail：eaglehwu@ntut.edu.tw

網址：http://140.124.43.216/

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電力電子

近年重要論文及著述

(a)期刊論文

1. "Voltage-boosting converter based on charge pump and coupling inductor with passive voltage clamping", IEEE Transactions on Industrial Electronics, 1719-1727, 2010/5/1
2. "Performance enhancement of boost converter based on PID controller plus linear-to-nonlinear translator", IEEE Transactions on Power Electronics, 1351-1361, 2010/5/1
3. "A KY boost converter", IEEE Transactions on Power Electronics, 2699-2703, 2010/11/1
4. "A novel dimming technique for cold cathode fluorescent lamp", IEEE Transactions on Industry Applications, 2196-2201, 2010/12/1
5. "Inductor-coupled KY boost converter", IET Electronics Letters, 1624-1625, 2010/11/1
6. "Bidirectional operating of inverse KY converter", International Review of Electrical Engineering-IREE, 1898-1906, 2010/10/1
7. "Topology exchange between KY converter and its derivative based on duty cycle", International Review of Electrical Engineering-IREE, 2570-2577, 2010/12/1
8. "Soft switching of KY converter with input current spike suppressed", International Review of Electrical Engineering-IREE, 1948-1955, 2010/10/1
9. "Design and implementation of current sharing control for switching power supply", International Review of Electrical Engineering-IREE, 30-40, 2011/2/1
10. "Powering LED using high-efficiency SR flyback converter", IEEE Transactions on Industry Applications, 376-386, 2011/2/1
11. "LED dimming with efficiency considered", IET Electronics Letters, 457-459, 2011/3/1
12. "Step-up converter combining KY and buck-boost converters", IET Electronics Letters, 722-723, 2011/6/1
13. "Applying differential-mode transformer to current sharing with current ripple considered", IEEE Transactions on Industrial Electronics, 2755-2771, 2011/7/1
14. "Two types of dual-output converters", International Review of Eletrical Engineering-IREE, 475-484, 2011/4/1

15. "Applying one-comparator counter-based sampling to current sharing control of multichannel LED strings", IEEE Transactions on Industry Applications, 2413-2421, 2011/11/1
16. "Negative-output soft switched KY buck converter", International Review of Electrical Engineering-IREE, 1077-1085, 2011/6/1
17. "Two types of high step-up DC-DC converters based on charge pump and coupling inductor", International Review of Electrical Engineering-IREE, 1130-1139, 2011/6/1
18. "Multi-output isolated DC-DC converter with cross regulation taking into account load transient", International Review of Electrical Engineering-IREE, 1154-1160, 2011/6/1
19. "Two types of voltage-boosting converter based on PWM control strategy", International Review of Electrical Engineering-IREE, 2178-2187, 2011/10/1
20. "具有正負輸出之升壓型轉換器", 電力電子雙月刊, 3-9, 2011/11/1
21. "A novel buck-boost converter combining KY and buck converters", IEEE Transactions on Power Electronics, 2236-2241, 2012/5/1
22. "Fully-digitalized implementation of PFC rectifier in CCM without ADC", IEEE Transactions on Power Electronics, 4021-4029, 2012/9/1
23. "High step-up converter based on charge pump and boost converter", IEEE Transactions on Power Electronics, 2484-2494, 2012/5/1
24. "Resonant voltage divider with bidirectional operation and startup considered", IEEE Transactions on Power Electronics, 1996-2006, 2012/4/1
25. "Voltage-boosting converters with hybrid energy pumping", IET Power Electronics, 185-195, 2012/2/1
26. "Dimmable driver for light-emitting diode with total harmonic distortion improved", IET Power Elecronics, 59-67, 2012/1/1
27. "Current sharing control strategy based on phase link", IEEE Transactions on Industrial Electronics, 701-713, 2012/2/1
28. "A step-up converter based on charge pump and dual boost", International Review of Electrical Engineering-IREE, 4814-4821, 2012/7/1
29. "Development of EEFL lighting ballast based on isolated asymmetrical half-bridge LCC resonant inverter", International Review of Electrical Engineering-IREE, 5982-5992, 2012/12/1
30. "Inductor saturation detection with anti-saturation control strategy taken into account", International Review of Electrical Engineering-IREE, 6123-6128, 2012/12/1
31. "結合高升壓轉換器與複合式最大功率追蹤之光伏能量轉換系統", 電子月刊, 94-113, 2013/2/1
32. "A buck resonant voltage divider with bidirectional operation considered", IEEE Transactions on Industry Applications, 1566-1576, 2013/7/1

33. "High voltage-boosting converters based on bootstrap capacitors and boost inductors", IEEE Transactions on Industrial Electronics, 2178-2193, 2013/6/1
34. "Pulse-frequency-modulated digital control of power supply without analog-to-digital converter using positive-sloped ramp wave Injection", IEEE Transactions on Industrial Informatics, 739-748, 2013/5/1
35. "Photovoltaic energy conversion system constructed by high step-up converter with hybrid maximum power point tracking", International Journal of Photoenergy, 1-9, 2013/8/1
36. "Controllable and dimmable AC LED driver based on FPGA to achieve high PF and low THD", IEEE Transactions on Industrial Informatics, 1330-1342, 2013/8/1
37. "Light-emitting diode driver with low-frequency ripple suppressed and dimming efficiency improved", IET Power Electronics, 105-113, 2014/1/1
38. "High-voltage-boosting converter with charge pump capacitor and coupling inductor combined with buck-boost converter", IET Power Electronics, 177-188, 2014/1/1
39. "Voltage gain enhancement for a step-up converter constructed by KY and buck-boost converters", IEEE Transactions on Industrial Electronics, 1758-1768, 2014/4/1
40. "High step-up converter based on coupling inductor and bootstrap capacitors with active clamping", IEEE Transactions on Power Electronics, 2655-2660, 2014/6/1
41. "Gate driver with output having positive triple input voltage and negative double input voltage", International Journal of Engineering and Advanced Technology, 119-122, 2013/12/1
42. "Dimmable AC LED driver with efficiency improved based on switched LED module", IEEE Journal of Display Technology, 171-181, 2014/3/1
43. "A Dimmable LED Driver Based on Current Balancing Transformer with Magnetizing Energy Recycling Considered", IEEE Journal of Display Technology, 388-395, 2014/5/1
44. "Improvement in voltage conversion ratio for step up converter established by KY and buck-boost converters based on coupled inductor", IET Power Electronics, 1457-1465, 2014/6/1
45. "Isolated step-up converter based on flyback converter and charge pumps", IET Power Electronics, 2250-2257, 2014/9/1
46. "具有改善輸入電流零交越失真之功率因數修正器", 電機能源論壇, 46-65, 2015/1/1
47. "具漏感能量回收之新型高升壓轉換器", 電力電子雙月刊, 60-69, 2015/1/1
48. "Full-Digital AC-DC converter with PFC based on counting", IEEE Transactions on Industrial Informatics, 122-131, 2015/2/1
49. "Improvement on voltage gain for KY converter", IET Power Electronics, 361-370, 2015/3/1

50. "Ultrahigh step-down converter", IEEE Transactions on Power Electronics, 3262-3274, 2015/6/1

(b)研討會論文

1. "Dual-output buck-boost converter with positive and negative output voltages under single positive voltage source fed", IEEE IPEC 2010, Sapporo, 2010/6/21
2. "Output power enhancement of full-bridge class-D amplifier", IEEE IPEC 2010, Sapporo, 2010/6/21
3. "Dual-output boost converter with positive and negative output voltages under single positive voltage source fed", IEEE IPEC 2010, Sapporo, 2010/6/21
4. "High Step-Up Converter Based on Charge Pump and Boost Converter", IEEE IPEC 2010, Sapporo, 2010/6/21
5. "Applying multi-channel sampling to one-comparator counter-based sampling to enhance system robustness", IEEE ICIEA 2010, Taichung, 2010/6/15
6. "KY converter with zero voltage switching", IEEE ICIEA 2010, Taichung, 2010/6/15
7. "Two-stage-cascaded Li-battery charger with current ripple considered", IEEE ICIEA 2010, Taichung, 2010/6/15
8. "FPGA-based Li-battery-series charger with energy recycling considered", IEEE ICIEA 2010, Taichung, 2010/6/15
9. "Multi-output synchronously-rectified forward converter with load transient considered", IEEE APEC 2010, CA, 2010/2/21
10. "Bidirectional operation of resonant voltage divider", IEEE APEC 2010, CA, 2010/2/21
11. "Applying one-comparator counter-based sampling to current sharing control of multi-channel LED strings", IEEE APEC 2010, CA, 2010/2/21
12. "Resonant voltage divider with startup considered", IEEE APEC 2010, CA, 2010/2/21
13. "A buck resonant voltage divider with bidirectional operation considered", IEEE APEC 2011, Texas, 2011/3/6
14. "A high brightness light-emitting diode driver with power factor and total harmonic distortion improved", IEEE APEC 2011, Texas, 2011/3/6
15. "Fully-digitalized implementation of PFC rectifier inCCM without ADC", IEEE APEC 2011, Texas, 2011/3/6
16. "Simple current sharing control based on differential-mode transformer", IEEE APEC 2011, Texas, 2011/3/6
17. "Applying one-comparator counter-based PWM control strategy to DC-AC Converter with voltage reference feedforward control considered", IEEE APEC 2011, Texas, 2011/3/6
18. "Derivative three-level boost converter cascaded with KY converter", IEEE ICEMS 2010, Incheon, 2010/10/10

19. "應用 FPGA 於太陽能最大功率追蹤之電池充電與 LED 調光", 電力工程研討會, 台南, 2010/12/3
20. "應用 FPGA 於研製一兩相式三階昇壓型轉換器", 電力工程研討會, 台南, 2010/12/3
21. "三階降壓型轉換器之均壓及均流分析", 電力工程研討會, 台南, 2010/12/3
22. "應用 FPGA 於高亮度 LED 調光與效率改善", 電力工程研討會, 台南, 2010/12/3
23. "應用 FPGA 於 LED 情境燈控制與錯誤偵測", 電力工程研討會, 台南, 2010/12/3
24. "應用 FPGA 於具均流之兩相式降壓型轉換器", 台灣電力電子研討會, 嘉義, 2010/9/3
25. "應用 FPGA 於三電平升壓型轉換器串接 KY 轉換器", 台灣電力電子研討會, 台南, 2010/9/3
26. "Simple modeling of DC-DC converter", IEEE ICEICE, Wuhan, 2011/4/15
27. "High step-up converter based on coupling inductor and charge pump with active voltage clamping", IEEE ICEICE, Wuhan, 2011/4/15
28. "2nd-order voltage-boosting converter based on charge pump and coupling inductor with passive voltage clamping", IEEE ICEICE, Wuhan, 2011/4/15
29. "High step-up converter based on two charge pumps with one inductor inserted", IEEE ICEICE, Wuhan, 2011/4/15
30. "A LED dimming circuit with efficiency improved", PCIM, Shanghai, 2011/6/21
31. "A full-bridge class-D amplifier with output power considered", PCIM, Shanghai, 2011/6/21
32. "Applying oversampling to one-comparator counter-based sampling to enhance transient response and system robustness", PCIM, Shanghai, 2011/6/21
33. "Applying asymmetrical half-bridge LCC resonant inverter to EEFL lighting ballast", IEEE PEDS, Singapore, 2011/12/5
34. "Negative-output resonant voltage divider", IEEE PEDS, Singapore, 2011/12/5
35. "High-voltage boost converter", IEEE PEDS, Singapore, 2011/12/5
36. "A novel voltage-boosting converter based on charge pumps with one inductor inserted", IEEE PEDS, Singapore, 2011/12/5
37. "A simple step-up converter", IEEE PEDS, Singapore, 2011/12/5
38. "Dual-output boost converter", IEEE PEDS, Singapore, 2011/12/5
39. "LED 驅動系統之設計", 電力工程研討會, 新北市, 2011/12/2
40. "應用 FPGA 於太陽能最大功率追蹤", 電力工程研討會, 新北市, 2011/12/2
41. "具正負電壓雙輸出之升壓型轉換器", 電力工程研討會, 新北市, 2011/12/2
42. "高升壓轉換器之研製", 電力工程研討會, 新北市, 2011/12/2
43. "負電壓輸出之諧振轉換器", 電力工程研討會, 新北市, 2011/12/2

44. "偵測電感飽和與反飽和調控之策略", 台灣電力電子研討會, 中壢, 2011/9/2
45. "全數位化非接觸式直流-直流轉換器之研製", 台灣電力電子研討會, 中壢, 2011/9/2
46. "全數位化鉛酸電池充電器之設計", 台灣電力電子研討會, 中壢, 2011/9/2
47. "Applying FPGA-based digital control to novel KY boost converter", 電力工程研討會, 新北市, 2011/12/2
48. "A novel step-up converter", IEEE ISIE, 杭州, 2012/5/28
49. "A novel gate driver with output voltage having triple input voltage", IEEE ISIE, 杭州, 2012/5/28
50. "A LED current balancing driver with magnetizing inductance energy recycling considered", IEEE APEC, Orlando, 2012/2/5
51. "High voltage boosting converter", IEEE APEC, Orlando, 2012/2/5
52. "A novel gate driver with output having positive input voltage and negative double input voltage", IEEE APEC, Orlando, 2012/2/5
53. "A gate driver with output voltage equal to triple input voltage", IEEE ICSET, 加德滿都, 2012/9/24
54. "A novel inductor-coupled step-up-down converter", IEEE ICSET, 加德滿都, 2012/9/24
55. "High step-up converter based on coupling inductor and bootstrap capacitors with active clamping", IEEE ICSET, 加德滿都, 2012/9/24
56. "具脈波充電與數位監控之鉛酸電池串聯充電等化器", 台灣電力電子研討會, 新竹市, 2012/9/11
57. "具有改善太陽能最大功率追蹤之新型高升壓轉換器", 台灣電力電子研討會, 新竹市, 2012/9/11
58. "Controllable and Dimmable AC LED Driver Based on FPGA to Achieve High PF and Low THD", 電力工程研討會, 台北市, 2012/12/7
59. "具有改善調光效率之 LED 驅動器", 電力工程研討會, 台北市, 2012/12/7
60. "可應用於太陽能光伏轉換之高升壓電路", 電力工程研討會, 台北市, 2012/12/7
61. "結合高升壓轉換器與混合式最大功率追蹤之太陽能轉換系統", 電力工程研討會, 台北市, 2012/12/7
62. "Applying coupled inductor to step-up converter combining KY and buck-boost converters", IEEE PEDS, 北九州, 2013/4/22
63. "Inductor saturation detection with anti-saturation control strategy applied", IEEE PEDS, 北九州, 2013/4/22
64. "A novel high step-up converter", IEEE PEDS, 北九州, 2013/4/22

65. "A novel gate driver with output possessing triple input voltage and negative double input voltage", IEEE PEDS，北九州, 2013/4/22
66. "Applying coupled inductor to step-up converter constructed by KY and buck-boost converters", IEEE ISIE，台北, 2013/5/28
67. "High step-up converter based on multi-winding coupled inductor and charge pump capacitor", IEEE TENCON，陝西, 2013/10/22
68. "Voltage gain enhancement of KY converter", IEEE TENCON，陝西, 2013/10/22
69. "具有抑制低頻漣波及改善調光效率之 LED 驅動器"，電力工程研討會，台中市，2013/12/6
70. "具節能之高功率 LED 驅動器"，電力工程研討會，台中市, 2013/12/6
71. "結合電荷幫浦與耦合電感之高升壓轉換器"，電力工程研討會，台中市, 2013/12/6
72. "應用升壓轉換器於遮蔽效應下之太陽能光伏轉換系統"，電力工程研討會，台中市，2013/12/6
73. "以 DSP 為基礎之具低均流誤差之 LED 電流平衡驅動器"，電力工程研討會，台中市, 2013/12/6
74. "具均流之高功率 LED 驅動系統"，電力工程研討會，台中市, 2013/12/6
75. "Isolated voltage-boosting converter", IEEE IPEC-ECCE ASIA, Hiroshima, 2014/5/18
76. "Ultra high step-down converter", IEEE IPEC-ECCE ASIA, Hiroshima, 2014/5/18
77. "Load transient response improvement based on PID control", IEEE IPEC-ECCE ASIA, Hiroshima, 2014/5/18
78. "Improvement in efficiency of LED lighting system", IEEE IPEC-ECCE ASIA, Hiroshima, 2014/5/18
79. "具高升壓及漏感回收之 DC-DC 轉換器之研製"，台灣電力電子研討會，台北，2014/9/4
80. "Development of a high step-up DC-DC converter with low voltage spike"，電力工程研討會，高雄, 2014/12/5
81. "High voltage-boosting converter based on coupled inductor and charge pump capacitors with active clamp circuit"，電力工程研討會，高雄, 2014/12/5
82. "Analysis and design of type III compensator for KY converter based on PSIM"，電力工程研討會，高雄, 2014/12/5
83. "Analysis of control-to-output transfer function of KY boost converter"，電力工程研討會，高雄, 2014/12/5
84. "具簡易架構及漏感能量回收之 DC-DC 高升壓轉換器"，電力工程研討會，高雄，2014/12/5

85. "A high step-up single-switch DC-DC converter", 電力工程研討會, 高雄, 2014/12/5

(c)研發與產學合作計畫

1. 熱電轉換系統之研製(3/3), 105/8-106/7
2. 熱電轉換系統之研製(2/3), 104/8-105/7
3. 熱電轉換系統之研製(1/3), 103/8-104/7
4. 具節能及多通道輸入之直流-直流轉換器燒機測試平台之研製, 102/8-103/7
5. 具節能及多通道輸入之直流-直流轉換器燒機測試平台之研製, 101/8-102/7
6. 具低總諧波失真及高功率因數之交流 LED 照明驅動系統(2/2), 100/8-101/7
7. 具低總諧波失真及高功率因數之交流 LED 照明驅動系統(1/2), 99/8-100/7
8. 應用無 ADC 之 FPGA 控制於直流/直流轉換器之研製(III), 98/8-99/7

專書論文

1. "Non-isolated high-gain DC-DC converter using charge pump and coupling inductor," InTech Open Acess Publisher, 出版日期：2010/12/1, ISBN：978-953-307-401-6

周至如　教授　*Chih-Ju Chou*

研究室名稱：電力事故研究室　Electric Power Faults Research Laboratory

聯絡電話：02-2771-2171 #2137

E-mail：cjchou@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~cjchou/

研究聚焦領域：□H 健康科技□ I 智慧整合科技■ G 綠色科技□ H 人文與創新元素

專長領域：電力系統、接地系統、電力事故診斷與防治、電力品質、雷擊防護、電力電磁干擾防護、保護協調規劃、電力風險評估

近年重要論文及著述

(a)期刊論文

1. "高壓交流與高壓直流海纜傳輸對系統之衝擊研究", 台電工程月刊, 65-80, 2010/6/1
2. "離岸風場併入系統之衝擊研究", 台電工程月刊, 85-101, 2010/4/1
3. "鐵道系統並行建置對於捷運路網定線之影響研究", 中華技術季刊, 50-63, 2010/4/1
4. "電力變壓器延壽計畫及殘餘壽命評估", 台電工程月刊, 40-53, 2011/9/1
5. "Improving the protective coordination of overcurrent relays in subtransmission networks with a practical and effective approach", International Journal of Electrical Engineering, 83-94, 2011/4/1
6. "大規模風力併入台電系統後對於故障臨界清除時間的影響", 台電工程月刊, 73-82, 2012/4/1
7. "Comparative evaluation of the HVDC and HVAC links integrated in a large offshore wind farm--an actual case study in Taiwan", IEEE Transactions on Industry Application, 1639-1648, 2012/10/1
8. "Evaluation of switching surge risks on the low-voltage auxiliary system of frequent start-stop plant", IEEE Transactions on Power Delivery, 2054-2062, 2012/10/1
9. "Analysis and field test of switching transient for single-tune harmonic filters in a low voltage system", Storage Management Solution, 164-180, 2012/9/1
10. "Modeling electromechanical overcurrent relays using singular value decomposition", Journal of Applied Mathematics, 1-18, 2012/12/1
11. "Assessment of risks from ground fault transfer on closed-loop HV underground distribution systems with cables running in a common route", IEEE Transactions on Power Delivery, 1015-1023, 2013/4/1
12. "複合式超高壓變電所之接地故障及雷擊特性分析及其對用戶之影響評估", 電機

技師雙月刊, 78-91, 2013/6/1

13. "Lubrication leakage alarm of wind power gearbox based on k-nearst neighbor and back propagation neural network", Information Technology Journal, 3152-3157, 2013/12/1
14. "Optimal planning of soft starter for large drain motor based on simulated", IEEJ TRANSACTIONS ON ELECTRICAL AND ELECTRONIC ENGINEERING, 136-143, 2014/3/1
15. "Survey of reservoir grounding system defects considering the performance of lightning protection and improved design based on soil drilling data and the particle swarm optimization technique", IEEJ Transactions on Electrical And Electronic Engineering, 605-613, 2014/11/1

(b)研討會論文

1. "捷運系統月台門之轉移電壓特性分析及其影響評估", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
2. "捷運牽引動力變電站之接地故障及諧波特性分析", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
3. "含自備電源系統之大型科技廠高低壓配電系統開關突波特性", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
4. "含自備電源系統及諧波負載之大型科技廠低壓配電系統接地故障特性", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
5. "水庫發電及供電系統之雷擊及開關突波特性分析及其影響評估", 中華民國第三十一屆電力工程研討會, 台南, 2010/12/3
6. "以長距離海纜併接之大型離岸風力發電系統故障特性及其對風機跳機之影響", 2010 台灣風能學術研討會, 澎湖, 2010/12/17
7. "風力機塔架及接地系統雷擊特性分析及其影響評估", 2010 建構綠能科技與智慧節能產學園區研討會, 台北縣, 2010/11/24
8. "低壓微電網供電系統故障特性分析及保護協調規劃", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2
9. "發電廠屋外式開關場氣封絕緣隔離開關操作時之開關突波特性分析及影響評估", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2
10. "科學園區內超高壓變電所接地故障特性分析及其影響評估", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2
11. "大型科技廠低壓匯流排併聯太陽光電系統最佳併聯容量規劃", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2

12. "超高層大樓之變壓器最佳節能調度及其影響與效益評估", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2
13. "高壓直流傳輸應用於離按風場", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2
14. "三相四線式低壓微電網供電系統之饋線故障分析及過電流保護檢討", 2011 建構綠能科技與智慧節能產學園區研討會, 台灣新北市, 2011/11/16
15. "在模態座標下以狀態空間模型模擬過電流電驛特性曲線", 中華民國第三十二屆電力工程研討會, 台灣新北市, 2011/12/2
16. "Comparative evaluation of the HVDC and HVAC links integrated in a large offshore wind farm - an actual case study in Taiwan, ", IEEE Industry Applications Society Annual Meeting, Orlando, Florida, 2011/10/9
17. "Study on voltage stability of island grid supplied by large grid with long submarine cables considering different load patterns", International Conference and Utility Exhibition on Power and Energy Systems, Pattaya, Thailand, 2011/9/28
18. "低壓微電網系統故障分析及最佳保護協調規劃", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
19. "桃園國際機場聯外捷運系統之供電系統分析", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
20. "科學園區內超高壓變電所雷擊特性及其對用戶之影響評估", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
21. "馬祖地區發電燃料成本統計分析及運轉策略研究", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
22. "智慧家庭 SIP 控制主機系統設計與開發", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
23. "大型電廠接地故障對其附設太陽光電發電系統之影響", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
24. "Utilizing Quadrilateral Distance Relay in Protection of Submarine Cables Linking Offshore Wind Farm to Taiwan Grid", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
25. "基因演算法應用於多風向之最佳化風場內風機排列", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
26. "不同風機類型對測距電驛保護影響", 先進電力工程技術論文研討會, 台北市, 2012/11/8

27. "Influence of uncontrolable factors in offshore wind farm on protection of quadrilateral distance relay -an actual case study", 先進電力工程技術論文研討會, 台北市, 2012/11/8
28. "中壓氣封絕緣開關設備之多功能記錄器的應用整合探討", 中華民國第三十三屆電力工程研討會, 台北市, 2012/12/7
29. "Modeling fragment coming down curves using pulse response sequence algorithm", 2012 International Conference on Machine Learning and Cybernetics, Xi'an, 2012/7/15
30. "Human machine interface applications in thermal power plants", 2012 International Conference on Electrical Engineering and Computer Science, Shanghai, 2012/8/15
31. "複合式樓宇智慧家庭系統的應用整合探討", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
32. "三相四線式獨立型低壓微電網系統故障分析及保護協調最佳化", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
33. "科學園區特高壓供電系統及用戶變站之接地最佳整合", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
34. "科學園區高壓用戶變電站與力公司之接地最佳整合研究", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
35. "架空輸電線路裝設線路避雷器之雷擊特性分析", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
36. "彰化離岸前導風場開關暫態分析", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
37. "A case study of mechatronics human machine interface technology development research for diesel generator engine power plant", IEEE 9th Conference on Industrial Electronics and Application (ICIEA), 2014-06-09
38. "智慧家庭系統規劃設計與實施", 中華民國第三十五屆電力工程研討會,2014-12-05
39. "發電機失磁保護協調之研究", 中民國第三十五屆電力工程研討會, 2014-12-05
40. "大型電廠屋外式氣封絕緣開關場之雷擊與接地故障特性分析及其影響評估", 中華民國第三十五屆電力工程研討會, 2014-12-05
41. "特高壓輸電系統含有架空線路及地下電纜時之雷擊及接地故障特性研究", 中華民國第三十五屆電力工程研討, 2014-12-05
42. "大型離岸風場長距離海底電纜之測距電驛保護區域規劃", 中華民國第三十五屆電力工程研討會, 2014-12-05
43. "離岸風場併接特高壓系統之開關突波分析", 中華民國第三十五屆電力工程研討會, 2014-12-05

(c)研發與產學合作計畫

1. 科學園區輸電網路接地系統之強化及最佳整合研究(2/2), 104/8-105/7
2. 科學園區輸電網路接地系統之強化及最佳整合研究(1/2), 103/8-104/7
3. 輸電鐵塔及塔基安全監測即時預報系統之研究, 102/7-104/6
4. 科學園區用戶變電站與電力公司供電系統之接地最佳整合研究, 102/8-103/7
5. 科學園區用戶變電站與電力公司供電系統之接地最佳整合研究, 101/8-102/7
6. 科學園區內設置超高壓變電所之潛在風險及其改善對策研究(II), 100/8-101/7
7. 智慧型微電網示範系統之規劃、分析、設計與建置（II)（國家型科技計畫）, 100/1-100/12
8. 科學園區內設置超高壓變電所之潛在風險及其改善對策研究, 99/8-100/7
9. 智慧型微電網示範系統之規劃、分析、設計、與建置（國家型科技計畫）, 99/1-99/12
10. 特高壓供電之大型科技廠內系統接地特性及其影響與改善對策研究（III）, 98/8-99/7
11. 科學園區用戶變電站與電力公司供電系統之接地最佳整合研究, 102/8-103/7
12. 科學園區用戶變電站與電力公司供電系統之接地最佳整合研究, 101/8-102/7
13. 科學園區內設置超高壓變電所之潛在風險及其改善對策研究(II), 100/8-101/7
14. 智慧型微電網示範系統之規劃、分析、設計與建置（II)（國家型科技計畫）, 100/1-100/12
15. 科學園區內設置超高壓變電所之潛在風險及其改善對策研究, 99/8-100/7
16. 智慧型微電網示範系統之規劃、分析、設計、與建置（國家型科技計畫）, 99/1-99/12
17. 特高壓供電之大型科技廠內系統接地特性及其影響與改善對策研究（III）, 98/8-99/7
18. 核二廠 345KV 開關場 GDS 之 EMTP 模擬分析（II), 102/5-103/1
19. 高雄輕軌牽引動力變電站負載潮流分析研究, 102/1-102/12
20. 核一電廠 345KV 設備更新與安裝等財物購置案---GDS 之 EMTP 模擬分析報告, 102/1-102/8
21. 密封型桿上變壓器設備動作特性之研究, 100/11-102/11
22. 用戶用電設備檢驗作業方法分析研究-資料分析探討協辦研究, 100/5-101/4
23. 核二廠 345KV 開關場 GDS 之 EMTP 模擬分析, 99/11-100/6
24. 電力變壓器延壽計畫及殘餘壽命評估（TPC-546-2102-9803) , 98/11-99/10
25. 核二廠 345KV 開關場 GDS 之 EMTP 模擬分析（II), 102/5-103/1

26. 高雄輕軌牽引動力變電站負載潮流分析研究, 102/1-102/12　企
27. 核一電廠 345KV 設備更新與安裝等財物購置案---GDS 之 EMTP 模擬分析報告, 102/1-102/8
28. 密封型桿上變壓器設備動作特性之研究, 100/11-102/11
29. 用戶用電設備檢驗作業方法分析研究-資料分析探討協辦研究, 100/5-101/4
30. 核二廠 345KV 開關場 GDS 之 EMTP 模擬分析, 99/11-100/6
31. 電力變壓器延壽計畫及殘餘壽命評估（TPC-546-2102-9803), 98/11-99/10

陳昭榮　副教授　*Chao-Rong Chen*

研究室名稱：智慧電網與綠色能源研究室 Smart Grid & Green Energy Laboratory

聯絡電話：02-2771-2171 #2112

E-mail：crchen@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1115

研究聚焦領域：□H健康科技■ I智慧整合科技■ G綠色科技□ H人文與創新元素

專長領域：智慧電網、電力系統、綠色能源、節能策略、家庭能源管理系統(HEMS)、智慧型控制、類神經網路

近年重要論文及著述

(a)期刊論文

1. Chao-Rong Chen, Chi-Juin Chang, “Half interval method applied in feeder terminal unit overcurrent detecting curve setting,” IEEE Trans. on Power Delivery, 2015 (SCI) (IEEE Early Access Articles)
2. Chao-Rong Chen, Cheng-Hung Lee, “Adaptive overcurrent relay coordination for off-peak loading in interconnected power system,” International Journal of Electrical Power and Energy Systems, vol. 63, Dec. 2014, pp. 140-144. (SCI).
3. Chao-Rong Chen, Chia-Hung Wu, Hsin-Tsrong Lee, “Determination of optimal drop height in free-fall shock test using regression analysis and back-propagation neural network,” Shock and Vibration, Aug. 2014. (SCI)
4. Chao-Rong Chen, Ming-Jen Lan, “Optimal demand response of smart home with pv generators,” International Journal of Photoenergy, July 2014. (SCI)
5. Chao-Rong Chen, Wen-Ta Tsai, Hua-Yi Chen, “System simulation and implementation of SIPS in Taiwan,” Mathematical Problems in Engineering, vol. 2014, June 2014, pp. 1-10. (SCI)
6. Yuan-Kang Wu, Ching-Yin Lee, Chao-Rong Chen, Kun-Wei Hsu, and Huang-Tien Tseng, “Optimization of the wind turbine layout and transmission system planning for a large-scale offshore wind farm by AI technology,” IEEE Transactions on Industry Applications, vol. 50, no. 3, pp. 2071-2080, May 2014. (SCI)
7. Chao-Rong Chen, Cheng-Hung Lee, Chi-Juin Chang, “Optimal overcurrent relay coordination in power distribution system using a new approach,” International Journal of Electrical Power & Energy Systems, vol. 45, no. 1, Feb. 2013, pp. 217-222. (SCI).
8. Chao-Rong Chen, Cheng-Hung Lee, “Evaluation of an 81R relay in a UFLS system,” Storage Management Solutions, no.1, Jan. 2013, pp.123-137. (EI).
9. Chao-Rong Chen, Chia-Hung Wu, Hsin-Tsrong Lee, "Analytical model and experimental evaluation of a long cylindrical polyurethane plastic elastomer for a shock test in a free-

fall shock machine", Storage Management Solutions, 2013/1.
10. Chao-Rong Chen, Chia-Hung Wu, Hsin-Tsrong Lee, “A design of optimum gray-predicted model to forecast g-peak value and duration time of different elastomers for shock test in a free fall shock machine,” Advances in Engineering Education, vol. 3, no. 4, pp. 213-227, Dec. 2012. (EI)
11. Chao-Rong Chen, Cheng Hung Lee, Chi-Juin Chang, “Overcurrent relay coordination optimization with partial differentiation approach for the validation of coordination violation,” Electric Power Components and Systems, vol. 39, no. 10, July 2011, pp. 933-947. (SCI).
12. Wen-Tsan Liu, Yuan-Kang Wu, Ching-Yin Lee, Chao-Rong Chen, "Effect of low-voltage-ride-through technologies on the first taiwan offshore wind farm planning", IEEE Trans. Sustainable Energy, vol. 2 , no. 1, pp.78-86, Jun. 2011.
13. 陳昭榮、周至如、李清吟等，電力變壓器延壽計畫及殘餘壽命評估，台電工程月刊，第 757 期 40-53 頁，2011 年 09 月。
14. 李清吟、陳昭榮、蔡孟伸等，高壓交流與高壓直流海纜傳輸對系統之衝擊研究。台電工程月刊，第 742 期 65-80 頁，2010 年 06 月。
15. 李清吟、陳昭榮、蔡孟伸，離岸風場併入系統之衝擊研究，台電工程月刊，第 740 期 85-101 頁，2010 年 04 月。
16. 劉志文、蒲冠志、楊金石、陳昭榮等，台電系統全黑啟動運轉能力評估，台電工程月刊，第 726 期 49-75 頁，2009 年 02 月。
17. "電力變壓器老化壽命損失估測", 電機能源論壇, 6, 2012/7/1

(b)研討會論文

1. Chao-Rong Chen, Ming-Jen Lan, Chi-Chen Huang, Ying-Yi Hong, Steven H. Low, “Demand Response Optimization for Smart Home Scheduling Using Genetic Algorithm,” 2013 IEEE International Conference on Systems, Man, and Cybernetics, Manchester, England, Oct. 2013.
2. Chao-Rong Chen, Yi-Cheng, Chang, Chi-Chen Huang, Ying-Yi Hong, Faa-Jeng Lin, “Short-Term Scheduling of Reactive Power Controllers Using a Hybrid Taguchi- Genetic Algorithm,” 2013 IEEE International Conference on Systems, Man, and Cybernetics, Manchester, England, Oct. 2013.
3. "Optimization of the wind turbine layout and transmission system planning for a large-scale offshore wind farm by AI technology", 2012 IEEE Industry Applications Society Annual Meeting (IAS), Las Vegas, 2012/10/7
4. Chao-Rong Chen, Wen-Ta Tsai, Hua-Yi Chen, Ching-Ying Lee, Chun-Ju Chen, Hong-Wei Lan, “Optimal Load Shedding Planning with Genetic Algorithm,” 2011 IEEE Industry Applications Society Annual Meeting, Orlando, Florida, USA, Oct. 2011.

5. Chao-Rong Chen, Wen-Ta Tsai, Ching-Yin Lee, Zhen-Fa Lin, “SPS Generator Tripping Planning Using Immune Algorithm,” 16th Intelligent System Applications to Power Systems, Hersonisos, Crete, Greece, Sep. 2011.
6. Yuan-Kang Wu, Ching-Yin, Lee, Chao-Rong Chen, and Shao-Hong Tsai, “Onshore Wind Farm Planning and System Simulation Analysis under Low- Carbon-Island Project at Penghu,” 16th Intelligent System Applications to Power Systems, Hersonisos, Crete, Greece, Sep. 2011.
7. Chao-Rong Chen, Wen-Ta Tsai, Ching-Yin Lee, “Blackout Prevention with Special Protection Systems for Isolated Power System. International Conference on Advanced Power System Automation and Protection (APAP) 2009, in Jeju, Korea, October 18~21, 2009, Jeju, Korea.
8. "離岸風場排列採用輻射型與星型之系統衝擊分析", 中華民國第三十一屆電力工程研討會, 臺南, 2010/12/3.
9. "彰化離岸風場採用型態 B 與型態 C 風機之系統衝擊與改善研究", 中華民國第三十一屆電力工程研討會, 臺南, 2010/12/3
10. "不同風場容量對電力系統之衝擊分析", 中華民國第三十一屆電力工程研討會, 臺南, 2010/12/3
11. "竹科 69kV 第二環路保護系統之分析研", 中華民國第三十一屆電力工程研討會, 臺南, 2010/12/3
12. "使用 DFIG 與 DDSG 風機評估澎湖風力最大占比", 2010 台灣風能學術研討會, 澎湖, 2010/12/17
13. "短期風力預測技術分析", 2010 台灣風能學術研討會, 澎湖, 2010/12/17
14. "台灣陸岸式和離岸式風力發電廠之場址規劃評估及財務分析探討", 2010 台灣風能學術研討會, 澎湖, 2010/12/17
15. "基因演算法應用於風場風力機最佳排列", 中華民國第 32 屆電力研討會, 新北市, 2011/12/2
16. "蟻群演算法應用於離岸式風場線路配置最佳化", 2011 台灣風能學術研討會, 臺南市, 2011/12/16
17. "再生能源併入綠島電網之衝擊研究", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7
18. "大型離岸風場考慮線損與尾流效應之佈最佳化研究", 中華民國第三十三屆電力工程研討會, 臺北, 2012/12/7

(c)研發與產學合作計畫

1. 台電系統低頻卸載系統最佳規劃之研究，主持人，96.3.16- 97.1.15，臺灣電力公司。

2. 電磁干擾對於捷運路網定線之影響研究，協同主持人，97.1.1- 97.12.31，台灣世曦工程顧問公司。
3. 大型風場系統衝擊檢討之研究，協同主持人，97.6.1- 98.11.30，臺灣電力公司。
4. 電力變壓器延壽計畫及殘餘壽命評估，主持人，98.11.1- 99.10.31，臺灣電力公司
5. 核二廠 345kV 開關場整場之非常快速暫態過電壓分析與影響評估，協同主持人，99.12.1 - 100.7.31，中興電工機械公司。
6. 智慧型電網中特殊保護系統之研究(1/2)，主持人， 99.8.1- 100.7.31，國科會。
7. 智慧型電網中特殊保護系統之研究(2/2)，主持人，100.8.1- 101.7.31，國科會。
8. 總統府低壓匯流排之事故診斷及檢驗，主持人，100.11.1- 101.1.15，總統府。
9. 密封型桿上變壓器有限元素模擬軟體之研究，主持人，100.11.16- 102.11.15，財團法人艾爾電氣研究發展教育基金會。
10. 能源國家型科技計畫 101 年度台美國際合作計畫－與美國加州理工學院 Caltech 能源科技研究合作 (1/3)，協同主持人，101.1.1- 101.12.31，國科會。
11. 包含再生能源之電力系統有效－無效功率最佳化調度，主持人，101.8.1- 102.7.31，國科會。
12. 能源國家型科技計畫 101 年度台美國際合作計畫－與美國加州理工學院 Caltech 能源科技研究合作 (2/3)，協同主持人，102.1.1- 102.12.31，國科會。
13. 高雄輕軌牽引動力變電站負載潮流分析研究，協同主持人，102.1.1- 102.12.31，台灣世曦工程顧問公司。
14. 核一電廠 345KV 設備更新與安裝等財物購置案---GDS 之 EMTP 模擬分析報告，協同主持人，102.1.1- 102.8.31，中興電工機械公司。
15. 核二廠 345KV 開關場 GDS 之 EMTP 模擬分析(II)，協同主持人，102.5.14-103.1.14，中興電工機械公司。
16. 能源國家型科技計畫 101 年度台美國際合作計畫－與美國加州理工學院 Caltech 能源科技研究合作 (3/3)，協同主持人，103.1.1- 103.12.31，國科會。
17. 自動需量反應中顧客排程用電最佳化，主持人，103.8.1- 104.7.31，國科會。
18. 利康交通股份有限公司電動計程車隊先導運行計畫之規劃輔導合作研究，協同主持人，104.5.1-104.12.31，利康交通公司。

古碧源　副教授　*Bih-Yuan Ku*

研究室名稱：軌道系統研究室/無人載具研究室 Rail System Laboratory

聯絡電話：02-2771-2171 #2192

E-mail：ku@ee.ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~byku/index.html

研究聚焦領域：□H健康科技■ I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：電力系統、遠距監控、無人水面載具、軌道機電系統（軌道供電系統分析、軌道車輛機電系統)

近年重要論文及著述

(a)期刊論文

1. "Grade Crossing Safety Using Real-Time Video and Numerical Warning Systems", IEEE Vehicular Technology Magazine, 75-81, 2010/9/1
2. "Converter Switching Surges - Railroad Vehicle Power Converter Impact Studies", IEEE Vehicular Technology Magazine, 57-66, 2012/9/1
3. "捷運直流軌道牽引供電系統模擬", 中興工程季刊, 106-110, 2012/7/1

(b)研討會論文

1. "Augmentation of Level Crossing Safety using Real-time Video and Numerical Warning System", 2010 Joint Rail Conference, Urbana, Illinois, 2010/4/27
2. "遠距即時影像應用於平交道安全防護之增強", 第三十一屆電力工程研討會, 台南市, 2010/12/2
3. "台鐵 700 型電聯車切換暫態電壓分析", 中華民國第三十二屆電力工程研討會, 新北市, 2011/12/2
4. "Train Power Converter Switching Surge Impact Studies", 2012 Joint Rail Conference, 費城 Philadelphia, 2012/4/17
5. "Quantitative measurement of pantograph loss-of-contact dynamics", 2013 Joint Rail Conference, Knoxville, 2013/4/15
6. "台鐵東幹線電氣化牽引變電站諧波濾波器之探討", 中華民國第三十四屆電力工程研討會, 台中市, 2013/12/6
7. "Load Power Quality Characteristics of Trains with Switch-Type Converters and the Impact to AC Electrified Traction Power Systems", 2014 Joint Rail Conference, Colorado Springs, 2014/4/2

(c)研發與產學合作計畫

1. 軌道運輸系統之監控技術開發-遠距影像監控技術應用於平交道安全防護之增強, 99/8-100/7
2. 軌道運輸系統之監控技術開發—子計畫三: 遠距影像監控技術應用於平交道安全防護之增強(2/3), 98/8-99/7
3. 桃園機場聯外捷運四期總顧問供電系統電腦模擬報告審核及驗證, 100/1-100/12
4. 花東線鐵路自強隧道導電軌離線率動態測試, 103/5-103/10
5. 淡海輕軌運輸系統計畫基本設計及第一期專案管理顧問委託技術服務, 103/5-104/11

呂振森　副教授　*Jenn-Sen Leu*

研究室名稱：216-1 無線通訊研究室

聯絡電話：02-2771-2171 #2129

E-mail：jsleu@ntut.edu.tw

網址： http://ar.ntut.edu.tw/lab/index.aspx?lab=1127

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：無線通訊、多使用者偵測技術

近年重要論文及著述

(a)研討會論文

1. 黃俊瑋、呂振森、張正春，"適應性資源配置演算法於正交分頻多工存取下鏈系統在比例速率限制下之效能改進"，2010 年全國電信研討會，桃園，長庚大學，2010 年 12 月 3-4 日。
2. 耿浩勛、呂振森、黃長輝，"載波頻率偏移估測法於正交分頻多重存取上鏈系統之效能分析"，2011 年全國電信研討會，花蓮福容大飯店，2011 年 11 月 18-19 日
3. 邱盈瑄、呂振森、胡恆鳴，"基於最小功率的適應性資源配置演算法於正交分頻多工存取系統下效能改進"，2012 年全國電信研討會，彰化，國立彰化師範大學，2012 年 11 月 16-17 日。
4. 何道明、呂振森、施佾廷，"載波頻率偏移估測法用於載波干涉-正交分頻多工之系統效能分析"，2013 年全國電信研討會，台南，台南台糖長榮酒店，2013 年 11 月 15-16 日。
5. 胡恆鳴、呂振森、劉佳業，"適應性區塊資源配置演算法應用在正交分頻多工下鏈系統"，2014 年全國電信研討會，台中，亞洲大學，2014 年 11 月 27-28 日。

王順源　副教授　*Shun-Yuan Wang*

研究室名稱：智慧型電機控制研究室 Intelligence Motor ControlLaboratory

聯絡電話：02-2771-2171 #2126

E-mail：sywang@ntut.edu.tw

網址：http://140.124.43.18/

研究聚焦領域：□H健康科技■ I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：電力電子應用技術、電機控制驅動系統設計、灰色系統、智慧型控制(模糊、類神經網路、小腦模型、灰色決策控制)

近年重要論文及著述

(a)期刊論文

1. "Adaptive supervisory Gaussian-cerebellar model articulation controller for direct torque control induction motor drive", IET, Electric Power Application, 295-306, 2011/3/1
2. "Loss Pattern of DBMAP/DMSP/1/K Queue and Its Application in Wireless Local Communications", Journal of Applied Mathematical Modelling, pp. 1782-1797, 2011/2/1
3. "Development of a Self-tuning TSK-fuzzy Speed Control Strategy for Switched Reluctance Motor", IEEE Transactions on Power Electronics, 2141-2152, 2012/4/1
4. "Adaptive Fuzzy Cerebellar Model Articulation Control for Switched Reluctance Motor Drive", IET Electrical Power Applications, 190-202, 2012/3/1
5. "Adaptive Speed Observer Based on TSK-Fuzzy Scheme for Vector Control Induction Motor Drives", Advanced Science Letters, 511-517, 2012/4/1
6. "Neural-network-estimator-based Twin Sliding Mode Controller Design for Vector Controlled Induction Motor Drives", Advances in information Sciences and Service Sciences, 53-62, 2012/10/1
7. "Characterizing Microwave Power in a MPCVD System Using Gaussian Mixture Modeling", Applied Mathematics & Information Sciences, 249S-256S, 2013/2/1
8. "Development of a Novel Self-tuned Adaptive Supervisory Cerebellar Model Articulation Controller for Induction Motor Drive", Asian Journal of Control, 1021-1035, 2013/7/1
9. "Takagi-Sugeno Fuzzy Estimator Design for Adaptive Vector Control Systems", Applied Mechanics and Materials, 2337-2340, 2013/2/1
10. "Design and Implementation of Adaptive Fuzzy Cerebellar Model Articulation Controller for Direct Torque Control System", Applied Mechanics and Materials, 1444-1447, 2013/2/1
11. "Driving Performance Advancement for SRM Using a Novel Adaptive Learning Control on Dominant Parameters", Applied Mechanics and Materials, 1525-1528, 2013/2/1

12. "Hybrid Fuzzy-Sliding Control with Fuzzy Self-tuning for Vector Controlled Drive Systems", Applied Mechanics and Materials, 96-99, 2013/8/1
13. "Self-Tuning Fuzzy Controller Design for a Switched Reluctance Motor Drive System", Applied Mechanics and Materials, 100-103, 2013/8/1
14. "Characterizing Microwave Power in a MPCVD System using Gaussian Mixture Modeling", Applied Mathematics & Information Sciences, 3005-3013, 2014/11/1
15. "Estimator-based fuzzy credit-assigned cerebellar model articulation controller design for vector-controlled induction motor drives", Journal of the Chinese Institute of Engineers, 332-345, 2014/3/1
16. "A Diagnostic System for Speed-Varying Motor Rotary Faults", Mathematical Problems in Engineering, 10 pages, 2014/5/1
17. "Online Speed Controller Scheme Using Adaptive Supervisory TSK-fuzzy CMAC for Vector Controlled Induction Motor Drive", Asian Journal of Control, 1-13, 2014/9/1
18. "Characterizing Microwave Power in a MPCVD System using Gaussian Mixture Modeling", Applied Mathematics & Information Sciences, 2014-11-01
19. "An Adaptive Supervisory Sliding Fuzzy Cerebellar Model Articulation Controller for Sensorless Vector-Controlled Induction Motor Drive Systems, " Sensors, vol. 15, pp. 7323-7348, 2015.
20. "Design of a Novel Adaptive TSK-fuzzy Speed Controller for Use in Direct Torque Control Induction Motor Drives, " Applied Soft Computing, March 05, 2015.

(b)研討會論文

1. "Multi-behavior interactive mobil robot implementation over mixed reality", International Conference on Service and Interactive Robotics, Taipei, 2009/8/6
2. "A HMI/GUI Control in a Steam-Pretreated Process for Agriculture Wastes Reuses", 2010 International Symposium on Computer, Communication, Control and Automation, 台南, 2010/3/5
3. "Adaptive Proportional-Integral Speed Controller for Direct Torque Control of Induction Motor Using Neural Networks", 2010 International Symposium on Computer, Communication, Control and Automation, 台南, 2010/3/5
4. "Design of Motor Rotary Fault Diagnosis System Using the Dynamic Structure Neural Networks and SPC Technique", Proceedings of The 31TH Symposium on Electrical Power Engineering, 台南, 2010/12/3
5. "Design of Switched Reluctance Motor Drive System Based on Adaptive Takagi-Sugeno-Kang Fuzzy Speed Controller", Proceedings of The 31TH Symposium on Electrical Power Engineering, 台南, 2010/12/3

6. "Design of Fuzzy Cerebellar Model Articulation Stator Resistance Estimator for Direct Torque Control", Proceedings of The 31TH Symposium on Electrical Power Engineering, 台南, 2010/12/3
7. "Design of Induction Motor FOC System using Adaptive T-S Fuzzy Estimator", Proceedings of The 31TH Symposium on Electrical Power Engineering, 台南, 2010/12/3
8. "A Novel Web-Enabled HMI/DAC Automation for Disaster Prevention and Alert Management", Proceedings of 2010 IEEE International Conference on Systems, Man and Cybernetics, Istanbul, 2010/10/10
9. "Design of adaptive TSK-fuzzy observer for vector control induction motor drives", International Conference on Electrical and Control Engineering (ICECE), 宜昌, 2011/9/16
10. "Design of Adaptive Tskagi-Sugeno-Kang Fuzzy Estimators for Induction Motor Vector Control System", Proceedings of The 32TH Symposium on Electrical Power Engineering, 新北市, 2011/12/2
11. "Design of Adaptive Speed and Resistance Estimators for Direct Torque Control System of Induction Motor", Proceedings of The 32TH Symposium on Electrical Power Engineering, 新北市, 2011/12/2
12. "Study and Implementation of Direct Torque Control Drive System for Switched Reluctance Motor", Proceedings of The 32TH Symposium on Electrical Power Engineering, 新北市, 2011/12/2
13. "Study of Arrester State Examination Using Artificial Neural Network", Proceedings of The 32TH Symposium on Electrical Power Engineering, 新北市, 2011/12/2
14. "Design and Implementation of Intelligent Motor Rotary Fault Diagnosis System Using the EWMA Chart Technique", Proceedings of The 32TH Symposium on Electrical Power Engineering, 新北市, 2011/12/2
15. "Self-tuning PI Controller based on Neural Network for Switched Reluctance Motor Drive", International Conference on Management Science and Intelligent Control, 蚌埠, 2011/8/24
16. "Design of Fuzzy Cerebellar Model Articulation Controller for High Performance Induction Motor Vector Control System", International Conference on Management Science and Intelligent Control, 蚌埠, 2011/8/24
17. "Design of Intelligent Motor Rotary Fault Diagnosis System with Speed Estimation", Proceedings of The 33TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7

18. "Interval Type-2 Takagi-Sugeno Fuzzy Controller Design for a Class of Nonlinear Singular Networked Control Systems", IEEE Proceedings: Proceedings of 2012 International Conference on Fuzzy Theory and Its Application, 台中市, 2012/11/16
19. "An Adaptive Takagi-Sugeno-Kang Fuzzy Speed Controller Design for the Direct Torque Control System of Induction Motors", IEEE Proceedings: Proceedings of 2012 International Conference on Fuzzy Theory and Its Application, 台中市, 2012/11/16
20. "Intel 系列微處理器 PENTIUM 4 架構規劃與界面(第八版)(翻譯)", 台灣培生教育出版公司台灣東華書局公司, 出版日期：2010/3/1, ISBN：978-986-154-950-7
21. "Implementation of Fuzzy Sliding Mode Controller with Fuzzy Supervisory System for Vector Control System", Proceedings of The 33TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
22. "Design of Fuzzy Sliding Mode Controller for Vector Control Systems", Proceedings of The 33TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
23. "Design of Self-tuning Fuzzy Controller for Switched Reluctance Motor Drive System", Proceedings of The 33TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
24. "Design of Fuzzy Controller for Direct Torque Control Systems", Proceedings of The 33TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
25. "Raman Spectral Analysis Based on Time-Frequency Analysis", 2012 IEEE International Conference on Systems, Man, and Cybernetics, 首爾, 2012/10/14
26. "Type-2 Takagi-Sugeno Fuzzy Controller Design for a Class of Singular Systems with state and input delays", The 2013 International Automatic Control Conference, 南投縣, 2013/12/2
27. "Design and Implementation of a Single-Stage High-Efficacy LED Driver with Dynamic Voltage Regulation", Proceedings of 2013 IEEE International Conference on Systems, Man and Cybernetics, Manchester, 2013/10/13
28. "Intelligent Motor Rotary Fault Diagnosis System Using the Taguchi Method", Proceedings of The 34TH Symposium on Electrical Power Engineering, 台中市, 2013/12/6
29. "Design of Loss Minimization Controller for Induction Motor", Proceedings of The 34TH Symposium on Electrical Power Engineering, 台中市, 2013/12/6
30. "Design of Fuzzy Controllers for Direct Torque Control Systems", IEEE Proceedings of 2014 International Symposium on Computer, Consumer and Control, 台中市, 2014/6/10

31. "A Motor Rotary Fault Diagnosis System Using Dynamic Structural Neural Network", IEEE Proceedings of 2014 International Symposium on Computer, Consumer and Control, 台中市, 2014/6/10
32. "Design of Adaptive Takagi-Sugeno-Kang Fuzzy Estimators for Induction Motor Direct Torque Control Systems", Proceedings of 2014 IEEE International Conference on Systems, Man and Cybernetics, San Diego, CA, 2014/10/3
33. "An Intelligent Motor Rotary Fault Diagnosis System Using Taguchi Method", Proceedings of 2014 IEEE International Conference on Systems, Man and Cybernetics, San Diego, CA, 2014/10/3
34. "Guaranteed Cost Control for Uncertain Singular Type-2 Takigi-Sugeno Fuzzy Time-Delay Systems", Proceedings of CACS 2014, Kaohsiung, Taiwan, 2014/9/26
35. "Design of Self-organizing Fuzzy Controller for Switched Reluctance Motor Drive System", Proceedings of The 35TH Symposium on Electrical Power Engineering, 高雄市, 2014/12/5
36. "Design and Implementation of Intelligent Motor Rotary Fault Diagnosis System Using the Immune Algorithm", Proceedings of The 35TH Symposium on Electrical Power Engineering, 高雄市, 2014/12/5

(c)研發與產學合作計畫

1. 適應性遞迴小腦模型控制於馬達驅動系統之研究, 103/11-104/11
2. 切換式磁阻馬達驅動系統之適應性對角線遞迴式小腦模型控制器設計, 103/8-104/7
3. 切換式磁阻馬達驅動系統之適應性強健模糊小腦模型控制器設計, 101/8-102/7
4. 能源監控管理設備系統建置研究, 101/3-102/6
5. 電動機驅動技術開發合作計畫, 99/1-99/11

簡福榮　副教授　*Fu-Rong Jean*

研究室名稱：語音與音訊處理研究室

聯絡電話：02-2771-2171 #2176

E-mail：frjean@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1091

研究聚焦領域：□H 健康科技■I 智慧整合科技□G 綠色科技□H 人文與創新元素

專長領域：語音訊號處理、語音與音訊編碼

近年重要論文及著述

(a)期刊論文

1. "Adaptation of hidden Markov models for recognizing speech of reduced frame rate", IEEE Transactions on Cybernetics, 2114-2121, 2013/12/1
2. "粒子群與禁忌搜尋演算法之整合及其於上行正交分頻多重存取系統載波頻率偏移估計之應用", International Journal of Science and Engineering, 213-216, 2014/3/1
3. "Model adaptation method for recognition of speech with missing frames", The Journal of the Acoustical Society of America, EL166-171, 2014/3/1
4. "使用模型適應法解碼可變音框率語音之分散式語音辨識", International Journal of Science and Engineering, 283-286, 2014/6/1

(b)研討會論文

1. "以混合式 SLM-PTS 法降低編碼正交分頻多工系統之峰均功率比", 2010 全國電信研討會, 新北市, 2010/12/3
2. "以干擾消除技術改善上行正交分頻多重存取系統之載波頻率偏移", 2010 民生電子研討會, 台南市, 2010/11/5
3. "基於最小均方誤差頻譜回復之語音增強演算法", 2011 全國電信研討會, 花蓮市, 2011/11/18
4. "使用模型適應以匹配半音框率語音資料之分散式語音辨識", 2011 全國電信研討會, 花蓮市, 2011/11/18
5. "使用可變步距改良式 Gauss-Seidel 虛擬均衡仿射投影演算法之聲音回音消除", 2011 全國電信研討會, 花蓮市, 2011/11/18
6. "應用基因演算法於 OFDMA 系統之聯合通道估計及多用戶偵測", 2011 年民生電子研討會, 臺中市, 2011/11/11
7. "應用貪婪演算法作特徵選取之鼾聲偵測", 2012 民生電子研討會, 虎尾, 2012/11/16

8. "具碼簿驅動雜訊語音增強之 1200 bps MELP 語音編碼器", 2012 年全國電信研討會, 彰化, 2012/11/16
9. "使用迭代溫妮濾波器於線性預估模型之語音增強", 2012 年全國電信研討會, 彰化, 2012/11/16
10. "Speech enhancement using generalized maximum a posteriori spectral amplitude estimator", 2013 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 溫哥華, 2013/5/26
11. "Joint channel estimation and multi-user detection for OFDMA systems using a genetic algorithm with simulated annealing-based mutation", 2013 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2013), 曼徹斯特, 2013/10/13
12. "使用模型適應法解碼可變音框率語音之分散式語音辨識", 2013 年全國電信研討會, 高雄, 2013/11/15
13. "使用感知加權之頻譜振幅貝氏估計器的語音增強", 2014 年全國電信研討會, 臺中, 2014/11/27
14. "Mixing PSO and Tabu search technique and its application to estimation of carrier frequency offsets for uplink OFDMA system", 2014 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2014), San Diego, 2014/10/5
15. "Indoor activity monitoring system for elderly using RFID and FitBit flex wristband", 2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, Valencia, 2014/6/1
16. "Analysis-by-synthesis frame dropping algorithm together with a novel speech recognizer using time-varying hidden Markov model", 2014 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2014), San Diego, 2014/10/5
17. "Recognition of packet loss speech using the most reliable reduced-frame-rate data", 2014 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2014), San Diego, 2014/10/5

(c)研發與產學合作計畫

1. 在分散式語音辨識中解碼遺失音框語音的新技術, 103/8-104/7

曾傳蘆　副教授　*Chwan-Lu Tseng*

研究室名稱：資通訊技術控制與應用研究室 ICT Control and Applications Laboratory

聯絡電話：02-2771-2171 #2189

E-mail：cltseng@ee.ntut.edu.tw

網址：http://140.124.42.182/teacher.html

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：無線感測器網路應用、自動化技術、控制技術應用、強健控制

近年重要論文及著述

(a)期刊論文

1. "Adaptive supervisory Gaussian-cerebellar model articulation controller for direct torque control induction motor drive", IET Electric Power Applications, 295-306, 2011/3/1
2. "Adaptive Fuzzy Cerebellar Model Articulation Control for Switched Reluctance Motor Drive", IET Electrical Power Applications, 190-202, 2012/3/1
3. "Development of a Self-tuning TSK-fuzzy Speed Control Strategy for Switched Reluctance Motor", IEEE Power Electronics, 2141-2152, 2012/4/1
4. "Adaptive Speed Observer Based on TSK-Fuzzy Scheme for Vector Control Induction Motor Drives", Advanced Science Letters, 511-517, 2012/4/1
5. "Neural-network-estimator-based Twin Sliding Mode Controller Design for Vector Controlled Induction Motor Drives", Advances in information Sciences and Service Sciences, 53-62, 2012/6/1
6. "Takagi-Sugeno Fuzzy Estimator Design for Adaptive Vector Control", Applied Mechanics and Materials, 2337-2340, 2013/1/1
7. "Design and Implementation of Adaptive Fuzzy Cerebellar Model Articulation Controller for Direct Torque Control System", Applied Mechanics and Materials, 1444-1447, 2013/2/1
8. "Driving Performance Advancement for SRM Using a Novel Adaptive Learning Control on Dominant Parameters", Applied Mechanics and Materials, 1525-1528, 2013/2/1
9. "Hybrid Fuzzy-Sliding Control with Fuzzy Self-tuning for Vector Controlled Drive Systems", Applied Mechanics and Materials, 96-99, 2013/7/1
10. "Self-Tuning Fuzzy Controller Design for a Switched Reluctance Motor Drive System", Applied Mechanics and Materials, 100-103, 2013/7/1
11. "Application of a web-based remote agro-ecological monitoring system for observing spatial distribution and dynamics of Bactrocera dorsalis in fruit orchards", Precision Agriculture, 323-342, 2013/3/1

12. "Development of a Novel Self-tuned Adaptive Supervisory Cerebellar Model Articulation Controller for Induction Motor Drive", Asian Journal of Control, 1021-1035, 2013/7/1
13. "Toward anticipating pest responses to fruit farms: Revealing factors influencing the population dynamics of the Oriental Fruit Fly via automatic field monitoring", Computers and Electronics in Agriculture, 148-161, 2014/11/1
14. "A Diagnostic System for Speed-Varying Motor Rotary Faults", Mathematical Problems in Engineering, 10, 2014/5/1
15. "Estimator-based fuzzy credit-assigned cerebellar model articulation controller design for vector-controlled induction motor drives", Journal of the Chinese Institute of Engineers, 332-345, 2014/5/1
16. "Speed controller design of direct torque control system for induction motors by using adaptive supervisory Fuzzy-CMAC", Journal of the Chinese Institute of Engineers, 2014/7/1
17. "Online Speed Controller Scheme Using Adaptive Supervisory TSK-fuzzy CMAC for Vector Controlled Induction Motor Drive", Asian Journal of Control, 1-13, 2014/9/1
18. "Toward anticipating pest responses to fruit farms: Revealing factors influencing the population dynamics of the Oriental Fruit Fly via automatic field monitoring Computers and Electronics in Agriculture", 2014-11-01

(b)研討會論文

1. "Design of power-saving automatic counting traps for an ecological monitoring system of oriental fruit fly", 5th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering, 福岡, 2010/4/5
2. "Design of RF-based wireless sensor networks for agricultural applications", 5th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering, 福岡, 2010/4/5
3. "Adaptive proportional-integral speed controller for direct torque control of induction motor using neural networks", 2010 International Symposium on Computer, Communication, Control and Automation, 台南, 2010/5/5
4. "Design of motor rotary fault diagnosis system using the dynamic structure neural networks and SPC technique", 31st Symposium on Electrical Power Engineering, 台南, 2010/12/3
5. "Design of switched reluctance motor drive system based on adaptive takagi-sugeno-kang fuzzy speed controller", 31st Symposium on Electrical Power Engineering, 台南, 2010/12/3

6. "Design of induction motor FOC system using adaptive T-S fuzzy estimator", 31st Symposium on Electrical Power Engineering, 台南, 2010/12/3
7. "Design of fuzzy cerebellar model articulation stator resistance estimator for direct torque control", 31st Symposium on Electrical Power Engineering, 台南, 2010/12/3
8. "The application of relational analysis for sleep apnea syndrome recognize", 5th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering, 福岡, 2010/5/5
9. "自主式水底無線感測器之水聲通訊系統與感測系統之改良", 2010 農機與生機論文發表會, 屏東, 2010/11/18
10. "應用於無線感測器網路之自動化即時監控平台", 2010 農機與生機論文發表會, 屏東, 2010/11/18
11. "Self-tuning PI controller based on neural network for switched reluctance motor drive", International Conference on Management Science and Intelligent Control, 蚌埠, 2011/8/24
12. "Design of fuzzy cerebellar model articulation controller for high performance induction motor vector control system", International Conference on Management Science and Intelligent Control, 蚌埠, 2011/8/24
13. "Design of adaptive TSK-fuzzy observer for vector control induction motor drives", 2011 International Conference on Electrical and Control Engineering, 宜昌, 2011/9/16
14. "Adaptive speed observer based on TSK-Fuzzy scheme for vector control induction motor drives", The First International Conference on Engineering and Technology Innovation, 墾丁, 2011/11/11
15. "Development of an embedded system-based gateway for environmental monitoring using wireless sensor network technology", 5th International Conference on Sensing Technology, Palmerston North, 2011/11/28
16. "感應馬達向量控制系統之適應性 TSK 模糊估測器設計", 第三十二屆電力工程研討會, 新北市, 2011/12/2
17. "感應馬達直接轉矩控制系統之適應性轉速和電阻估測器設計", 第三十二屆電力工程研討會, 新北市, 2011/12/2
18. "切換式磁阻馬達直接轉矩控制驅動系統之研製", 第三十二屆電力工程研討會, 新北市, 2011/12/2
19. "利用類神經網路診斷避雷器狀態之研究", 第三十二屆電力工程研討會, 新北市, 2011/12/2
20. "結合EWMA 管制圖技術之智慧型馬達旋轉故障診斷系統研製", 第三十二屆電力工程研討會, 新北市, 2011/12/2

21. "A secure encryption mechanism for wireless sensor networks based on time synchronization and centralized key management", 6th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering, Jeonui, 2012/6/18
22. "A compression algorithm with error data detection aiming at sporadic event monitoring in wsns", 6th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering, Jeonui, 2012/6/18
23. "Interval Type-2 takagi-sugeno fuzzy controller design for a class of nonlinear singular networked control systems", 012 International Conference on Fuzzy Theory and Its Application, 台中, 2012/11/16
24. "An adaptive takagi-sugeno-kang fuzzy speed controller design for the direct torque control system of induction motors", 2012 International Conference on Fuzzy Theory and Its Application, 台中, 2012/11/16
25. "Design of intelligent motor rotary fault diagnosis system with speed estimation", 33TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
26. "Design of induction motor direct torque control system with adaptive takagi-sugeno-kang fuzzy estimators", 3th Symposium on Electrical Power Engineering, 台北市, 2012/12/7
27. "Implementation of fuzzy sliding mode controller with fuzzy supervisory system for vector control system", 3TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
28. "Design of fuzzy sliding mode controller for vector control systems", 3TH Symposium on Electrical Power Engineering, 台北市, 2012/12/7
29. "Design of self-tuning fuzzy controller for switched reluctance motor drive system", 3th Symposium on Electrical Power Engineering, 台北市, 2012/12/7
30. "Design of fuzzy controller for direct torque control systems", 3th Symposium on Electrical Power Engineering, 台北市, 2012/12/7
31. "Design and implementation of a single-stage high-efficacy LED driver with dynamic voltage regulation", 2013 IEEE International Conference on Systems, Man, and Cybernetics, 曼徹斯特, 2013/10/13
32. "Type-2 takagi-sugeno fuzzy controller design for a class of singular systems with state and input delays", 2013 International Automatic Control Conference, 南投縣魚池鄉, 2013/12/2
33. "Adaptive coverage-preserving routing protocol for wireless sensor network", The 7th International Conference on Sensing Technology, Wellington, New Zealand, Wellington, 2013/12/3

34. "Intelligent motor rotary fault diagnosis system using the taguchi method", 第三十四屆電力工程研討會, 台中, 2013/12/6
35. "Design of loss minimization controller for induction motor", 第三十四屆電力工程研討會, 台中, 2013/12/6
36. "A motor rotary fault diagnosis system using dynamic structural neural network", 2014 International Symposium on Computer, Consumer and Control, 台中, 2014/6/10
37. "Design of adaptive takagi-sugeno-kang fuzzy estimators for induction motor direct torque control systems", 2014 IEEE International Conference on Systems, Man and Cybernetics, San Diego, 2014/10/5
38. "An intelligent motor rotary fault diagnosis system using taguchi method", 2014 IEEE International Conference on Systems, Man and Cybernetics, San Diego, 2014/10/5
39. "Guaranteed cost control for uncertain singular type-2 takigi-sugeno fuzzy time-delay systems", 2014 International Automatic Control Conference, 高雄, 2014/11/26
40. "Design and implementation of intelligent motor rotary fault diagnosis system using the immune algorithm", 35TH Symposium on Electrical Power Engineering, 高雄, 2014/12/5
41. "Design of self-organizing fuzzy controller for switched reluctance motor drive system", 35th Symposium on Electrical Power Engineering, 高雄, 2014/12/5

(c)研發與產學合作計畫

1. 時間延遲系統：從穩定理論到遠端控制應用－子計畫二：型式二模糊奇異時延控制系統強健性能控制器設計及其在異質網路控制系統之應用(III), 103/8-104/7
2. 時間延遲系統：從穩定理論到遠端控制應用－子計畫二：型式二模糊奇異時延控制系統研究及其在異質網路控制系統之應用, 102/8-103/7
3. 時間延遲系統：從穩定理論到遠端控制應用－子計畫二：型式二模糊奇異時延控制系統研究及其在奇異網路控制系統之應用, 101/8-102/7
4. 無線感測器網路平台軟韌體核心技術開發與實地佈建：植物疫情動態監測網(3/3), 100/11-101/10
5. 考慮多重指標之無線感測器網路節能路由協定研究, 100/8-101/7
6. 無線感測器網路平台軟韌體核心技術開發與實地佈建：植物疫情動態監測網(2/3), 99/11-100/10
7. 前瞻技術應用與未來育樂生活產品開發與展示空間建置(3/3), 99/11-100/10
8. 使用動態結構類神經網路與統計製程管制技術之馬達故障診斷系統研究 99/8-100/7

9. 可遠端更新之節能 WSN 設計及其在馬達監測與預警系統之應用(III), 98/8-99/7
10. 考慮多重指標之無線感測器網路節能路由協定研究, 100/8-101/7
11. 前瞻技術應用與未來育樂生活產品開發與展示空間建置(3/3), 99/11-100/10
12. 教育部補助 100-101 年度獎勵科技大學教學卓越計畫-主軸一活化教師教學與實務-薪傳計畫, 101/1-101/12
13. 教育部補助 100-101 年度獎勵科技大學教學卓越計畫-主軸一活化教師教學與實務-薪傳計畫, 100/1-100/12
14. 能源監控管理設備系統建置研究, 101/3-102/6
15. 適應性遞迴小腦模型控制於馬達驅動系統之研究, 103/11-104/11

(d)專書著作

1. "Intel 系列微處理機", 東華書局, 出版日期：2010/3/1, ISBN：978-986-154-950-7

方志鵬　副教授　*Jyh-Perng Fang*

研究室名稱：圖形識別與電子設計自動化研究室

聯絡電話：02-2771-2171 #2161

E-mail：jpfang@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1092

研究聚焦領域：□H健康科技■ I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：電子設計自動化

近年重要論文及著述

(a)期刊論文

1. 樓景, 方志鵬, 張陽郎, "以 TCL 建構交談介面用於快速調校嵌入式伺服系統", 電機能源論壇, p34, 2013/3/1
2. 方志鵬, 謝美鑾, 張陽郎, "基於網路相機的投影機對焦與底色校正", 台北科技大學學報, , 2013/4/1
3. 林書鼎方志鵬,"手機鏡頭的自動調校", 電機與能源論壇, 9, 2013/9/1
4. 羅建發, 方志鵬, "用 Leon3 在 NEEK 上實現影像壓縮", 電機與能源論壇,p1, 2013/9/1
5. 方志鵬，陳進福，蔡屹勳，"同時考慮面積平衡與矽穿孔數之三維積體電路層級分割", 電機能源論壇, p30-p35, 2014/5/1
6. 方志鵬，王俊程，"利用田口法提升伺服器測試之效率", 電機能源論壇, 27-35, 2015/1/1

(b)研討會論文

1. J. P. Fang, Y. －L. Chang, W. －Y. Liang, "AWireless Platform for Supporting Rapid In-Classroom-Assessments", 2010-ECASE, 澳門, 2010/1/25
2. Jyh Perng Fang, Yang-Lang Chang, Jong Yu Jen, "RFID-Aided System for Assisting Visually Impaired People", e-CASE & e-Tech International Conference, 香港, 2012/3/30
3. Jyh Perng Fang1, Yang-Lang Chang, Wei-Chieh Chu, Kuo Wei Chen, "Incomplete Barcode Reading Mechanism with Remote Database Access", 2011 2nd World Congress on Computer Science and Information Engineering, 長春, 2011/6/17
4. 方志鵬, 簡宗宇, 蘇哲彥, "放鬆波蘭式用於大量模組之平面規劃", 第十一屆離島資訊技術與應用研討會, 澎湖馬公, 2012/5/25
5. 方志鵬, 楊昌曜, 陳履洋, 陳進福, 王泰隆, "用於視障之廚房條碼辨識讀出及遠端

資料庫存取", 第十一屆離島資訊技術與應用研討會, 澎湖馬公, 2012/5/25

7. Jyh-Perng Fang , Yang-Lang Chang , Jie Lee, "A HUMAN-CENTRIC OBJECT IDENTIFICATION SYSTEM FOR ASSISTING THE VISUALLY IMPAIRED", 第 25 屆電腦視覺、圖學暨影像處理研討會, 南投日月潭, 2012/8/12
8. Jyh-Perng Fang , Yang-Lang Chang , Jong Yu Jen, Shin-Shiang Chu, "A HIGH PERFORMANCE FLOORPLANNING APPROACH BASED ON ORTHOGONAL EXPERIMENTS", 第 25 屆電腦視覺、圖學暨影像處理研討會, 南投日月潭, 2012/8/12
9. Jyh Perng Fang, Yang Lang Chang Jong Yu Jen, Tai-Long Wang, "A Greedy Approach for Floopanning Mass Modules", 2012 International Conference on Information Security and Intelligent Control (ISIC’ 12), 雲林, 2012/8/14
10. 方志鵬, 楊昌曜, 陳履洋, 王泰隆, "以 Android 手機為基礎之盲用物品辨識系統", 2012 數位生活科技研討會, 雲林, 2012/8/15
11. 方志鵬, 楊昌曜, 陳履洋, 陳進福, 王泰隆, "用於視障之物品條碼辨識及語音資訊系統", 2012 數位生活科技研討會, 雲林, 2012/8/15
12. Jyh-Perng Fang, Yang-Lang Chang, Jie Lee, Tai-Lung Wang, "An Object Identification System for Assisting the Elder People", 2012 台日智慧橘綠(iGO)科技研討會, 苗栗, 2012/12/11
13. 方志鵬, 林長佑, 程震亞, "以行動裝置減少銀髮族之用藥疏失", 2013 年民生電子論壇－智慧電子, 台北, 2013/5/17
14. 張陽郎, 韓欽銓, 方志鵬, 黃敏彧, 傅義翔, 陳履洋, "最近特徵空間法應用於多元遙測資料融合影像分類", 第十二屆離島資訊技術與應用研討, 金門, 2013/5/24
15. 張陽郎, 韓欽銓, 方志鵬, 劉靜男, 王怡鈞, 王品皓, "粒子群優演算法應用於高光譜影像波段選取", 第十二屆離島資訊技術與應用研討會, 金門, 2013/5/24
16. 方志鵬, 陳彥均, "避免銀髮族藥物相剋的系統", 2013 智慧電子應用設計研討會, 台中, 2013/12/13
17. 方志鵬, 李佶, "同時感知分層且感知分區的 3D-VLSI 分割", CVIPIT2014, 中壢, 2014/6/6
18. Jyh-Perng Fang, Yang-Lang Chang, Chung-Lun Hong, Tai-Yong Qiu, "Reducing Sedentary Behavior in the Elderly with the Aid of Infrared Smartphone", ISTS2014, 台北, 2014/11/19
19. Yu-Chieh Cheng, Chen-Ya Cheng, Jyh Perng Fang, Yang-Lang Chang, "A Novel Scheme of TSV-island-based Partitioning and Floorplanning", ISTS2014, 台北, 2014/11/19
20. Yen Chun Chen, Jyh Perng Fang and Yang Lang Chang"A System for Assisting the Drug

Compliance of the Elderly", ISTS2014, 台北, 2014/11/19

21. Yang-Lang Chang, Jyh-Perng Fang, Ming-Shiou Hsu, Tzu-Wei Tseng, "The Implementation of Browser Apps for GeoServer", ISTS2014, 台北, 2014/11/19

(c)研發與產學合作計畫

1. 高效能 GPU 可視化海嘯模擬與遙測影像資料融合應用於台灣海岸震後災害評估, 102/8-103/7
2. 高效能全天候 SAR 遙測影像運用於崩塌地潛勢評估研究, 101/8-102/7
3. 聯網電視關鍵技術之研發及其應用—子計畫三：聯網電視之 Android 行動終端裝置的分散式整合運算模式與省電設計之研究(2/3), 101/5-102/4
4. 用於視障之廚房條碼辨識讀出及遠端資料庫存取(2/2), 100/8-101/7
5. 視障者資訊輔具計畫--用於視障之廚房條碼辨識讀出及遠端資料庫存取(1/2), 99/8-100/7
6. 一個支援教學評量的無線平台, 98/8-99/7
7. 第一銀行工會「101 年度優良經理人評鑑」資料庫, 101/2-101/4

郭天穎　副教授　*Tien-Ying Kuo*

研究室名稱：數位影像視訊研究室 Digital Image and Video Laboratory

聯絡電話：02-2771-2171 #2117

E-mail：tykuo@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1147

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：視訊編碼、影像信號處理、多媒體通訊、互動電視

近年重要論文及著述

(a)期刊論文

1. "Depth Estimation from a Monocular View of the Outdoors", IEEE Trans. on Consumer Electronics (TCE), 817-822, 2011/5/1
2. "User-satisfaction Based Bandwidth Allocation for Transmission of Multiple Sources of Human Perceptual Data", Journal of the Franklin Institute, 879-890, 2012/4/1
3. "利用影像不變特徵與區域相關性之數位影像鑑識方法", 中華民國資訊學會通訊 (Communications of IICM), 21-32, 2013/3/1

(b)研討會論文

1. "A Hybrid Scheme of Robust and Fragile Watermarking for H.264/AVC Video", IEEE Int. Sym. on Broadband Multimedia Systems and Broadcasting (BMSB), Shanghai, 2010/3/24
2. "Fast Mode Decision for Non-Anchor Picture in Multiview Video Coding", IEEE Int. Sym. on Broadband Multimedia Systems and Broadcasting (BMSB), Shanghai, 2010/3/24
3. "A Novel Form Detection And Removal Scheme For Document Image", IEEE Int. Conf. on Image Processing (ICIP), Hong Kong, 2010/9/26
4. "A Novel Image Binarization Method Using Hybrid Thresholding", IEEE Int. Conf. on Multimedia and Expo (ICME), Singapore, 2010/7/19
5. "QoS Improvement for H.264 Video Transmission based on Structural Similarity", 5th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC), Fukuoka, 2010/11/4
6. "Depth Estimation From a Monocular Outdoor Image", IEEE Int. Conf. on Consumer Electronics (ICCE), Las Vegas, NJ, 2011/1/9
7. "2D-To-3D Conversion for Single-View Image Based on Camera Projection Model and Dark Channel Model", IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP), Kyoto, 2012/3/25

8. "單視角視訊深度估測演算法", 全國電信討會 (NST), 彰化, 2012/11/16
9. "基於影像視覺敏感特性的信號保真度", 全國電信討會 (NST), 彰化, 2012/11/16
10. "基於尺度不變特徵點引導修補方向之視訊修補演算法", 全國電信討會 (NST), 彰化, 2012/11/16
11. "利用影像不變特徵與區域相關性之數位影像鑑識方法", 全國電信討會 (NST), 彰化, 2012/11/16
12. "Depth Map Estimation from a Single Video Sequence", IEEE Int. Sym. on Consumer Electronics (ISCE), Hsinchu, 2013/6/3
13. "Image Forgery Detection for Region Duplication Tampering", IEEE Int. Conf. on Multimedia and Expo (ICME), San Jose, 2013/7/15
14. "True Motion Estimation Based on Reliable Motion Decision", Asia-Pacific Signal and Information Processing Association - Annual Summit and Conf. (APSIPA-ASC), Kaohsiung, 2013/10/29
15. "考慮視覺敏感度之影像品質評估", 全國電信討會 (NST), 台南, 2013/11/15
16. "半自動化單視角影像2D轉3D技術", 全國電信討會 (NST), Kaohsiung, 2013/11/15
17. "利用多尺度區域雜訊不一致性之影像拼接偵測", 全國電信討會 (NST), Kaohsiung, 2013/11/15
18. "2D to 3D Digital Video Conversion for Stereoscopic Display", International Sym. on Fundamental and Applied Sciences (ISFAS), Tokyo, 2014/3/28
19. "Implementation of User-Friendly Image Depth Modification System", 4th International Sym. on Technology for Sustainability (ISTS), Taipei, 2014/11/19
20. "2D to 3D Video Conversion via Depth Inference", International Computer Symposium , Taichung, 2014/12/12
21. "基於改進視覺信號保真度之影像品質評估", 全國電信討會, 台中, 2014/11/27
22. "針對 HEVC 畫面間預測之 SAO 快速編碼演算法",全國電信討會,台中,2014/11/ 27
23. "基於 Screen Video Codec 2 桌面分享之編解碼演算法最佳化", 全國電信討會,台中, 2014/11/27
24. "基於改進最小生成樹架構與遮擋處理之非區域立體匹配演算法", 全國電信討會 (NST), 台中, 2014/11/27

(c)研發與產學合作計畫

1. 影像造假鑑定技術(2/2), 102/8-103/7
2. 影像造假鑑定技術(1/2), 101/8-102/7
3. 單張單視角 2D 轉 3D 影像轉換技術, 100/8-101/7
4. 多視角視訊壓縮技術之研究(2/2), 99/8-100/7

5. 多視角視訊壓縮技術之研究(1/2), 98/8-99/7
6. 數位多媒體資料偵測修補技術, 99/8-100/7
7. 數位電視節目自動剪輯技術, 99/6-100/5
8. 視訊編解碼器之研發, 101/9-102/8
9. 電子檔案轉置品質評估及強化軟體委託服務案, 99/5-100/11

張文中　副教授　*Wen-Chung Chang*

研究室名稱：智慧型系統研究室 Intelligent Systems Laboratory

聯絡電話：02-2771-2171 #2125

E-mail：wchang@ntut.edu.tw

網址：http://www.isl.ee.ntut.edu.tw/

研究聚焦領域：■H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：智慧型機器人、視覺伺服、智慧型空間、醫療精密定位、工業自動化組裝、系統理論與控制應用

近年重要論文及著述

(a)期刊論文

1. "On-Line Boosting for Vehicle Detection", IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics, 892-902, 2010/6/1
2. "Reconstruction of 3D Contour with an Active Laser-Vision Robotic System", Asian Journal of Control, 400-412, 2012/3/1
3. "手眼協調之校準分析 Hand-Eye Calibration Analysis", 機械工業雜誌 340 期：智慧自動化技術專輯, 17-23, 2011/7/1
4. "Visual Simultaneous Localization and Mapping Employing Active Infrared Lighting", American Scientific Publishers, 463-468, 2012/4/1
5. "Hand-Eye Coordination for Robotic Assembly Tasks", International Journal of Automation and Smart Technology, 301-308, 2012/12/1
6. "Computer Tomography and Ultrasonography Image Registration Based on the Cooperation of GPU and CPU", Journal of Signal and Information Processing, 80-85, 2013/8/1
7. "Physician-Commanded Six-DOF Robotic Manipulation for Target Localization in Conformal Radiotherapy", Asian Journal of Control, 795-801, 2014/5/1
8. "Integration of Multidisciplinary Technologies for Real-Time Target Visualization and Verification for Radiotherapy", OncoTargets and Therapy, 1143-1150, 2014/6/1
9. "Automated Bin-Picking with Active Vision", Key Engineering Materials: Precision Engineering and Nanotechnology V, 496-504, 2014/8/1

(b)研討會論文

1. "Vision-Based Side Vehicle Detection from a Moving Vehicle", The International Conference on Systems Science and Engineering in Taiwan 2010, Taipei, 2010/7/1
2. "Hybrid Fuzzy Control of an Eye-to-Hand Robotic Manipulator for Autonomous Assembly Tasks", The SICE Annual Conference 2010, Taipei, 2010/8/18

3. "Hybrid Eye-to-Hand and Eye-in-Hand Visual Servoing for Autonomous Robotic Manipulation", The SICE Annual Conference 2010, Taipei, 2010/8/18
4. "Control of Cooperative Dual-Arm Mobile Robots in a Vision-Based Intelligent Space", The 13th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines, Nagoya, 2010/8/31
5. "An Intelligent Space for Mobile Robot Navigation with On-Line Calibrated Vision Sensors", The 11th International Conference on Control, Automation, Robotics and Vision, ICARCV 2010, Singapore, 2010/12/7
6. "Visual-Based Control of a Small Cleaning Robot", 2010 National Symposium on System Science and Engineering, Taipei, 2010/7/1
7. "Navigation and Control of a Small Cleaning Robot with Optical and Infrared Sensors", 2010 National Symposium on System Science and Engineering, Taipei, 2010/7/1
8. "Edge Based Image Registration between Ultrasonography and Affine Transformed CT images", 2010 Annual Symposium of Biomedical Engineering, Kaohsiung, 2010/12/10
9. "Automatic Robot Assembly with Eye-in-Hand Stereo Vision", The 2011 World Congress on Intelligent Control and Automation, Taipei, 2011/6/21
10. "Pose Tracking Control of a Robotic Manipulator Based on Binocular Vision", The 2011 National Symposium on System Science and Engineering, Nantou, 2011/6/17
11. "A Small-Size Autonomous Robot for Window Cleaning", The 2011 National Symposium on System Science and Engineering, Nantou, 2011/6/17
12. "Integration of Multidisciplinary Technologies for Remote-Controlled, Dynamic Tracking, and Real-Time Target Verification for Conformal Radiotherapy – a Prototype of Target Visualization System", The 2011 ASTRO's 53rd Annual Meeting, Miami Beach, Florida, 2011/10/2
13. "Visual Simultaneous Localization and Mapping Employing Active Infrared Lighting", The First International Conference on Engineering Technology and Innovation, Kenting, 2011/11/11
14. "Vision-Based Robot Navigation and Map Building Using Active Laser Projection", The 2011 IEEE/SICE International Symposium on System Integration (SII 2011), Kyoto, 2011/12/20
15. "Real-time Hand-Eye Coordination for Robotic Assembly Tasks", The 43rd International Symposium on Robotics (ISR 2012), Taipei, 2012/8/29
16. "A Water-Pouring Robot with Visual and Voice Recognition", The 2012 National Symposium on System Science and Engineering, Keelung, 2012/6/16
17. "Mobile Robot Localization and Map Building in an Intelligent Space", 2012 CACS International Automatic Control Conference (CACS12), Yunlin, Taiwan, 2012/11/30

18. "An Automatic Bin-Picking System for Plumbing Parts", 2012 CACS International Automatic Control Conference (CACS12), Yunlin, Taiwan, 2012/11/30
19. "Vision-Based Cooperative Manipulation of Mobile Robots", The Thirteenth IAPR International Conference on Machine Vision Applications (MVA 2013), Kyoto, 2013/5/20
20. "An Active Vision-Based Bin-Picking System", 5th International Conference of Asian Society for Precision Engineering and Nanotechnology (ASPEN2013), Taipei, 2013/11/12
21. "Mobile Robot Navigation and Control with Monocular Surveillance Cameras", 2013 CACS International Automatic Control Conference (CACS 2013), Nantou, 2013/12/2
22. "Visual Navigation and Control of Mobile Robots Based on Environment Mapping", 2014 International Conference on Advanced Mechatronic Systems (ICAMechS 2014), Kumamoto, 2014/8/9
23. "A Vision-Based Helper Robotic System for the Elderly in Household Environments", 2014 CACS International Automatic Control Conference (CACS 2014), Kaohsiung, 2014/11/26
24. "Plane-Based Geometric Calibration of a Projector-Camera Reconstruction System", 10th France - Japan Congress, 8th Europe - Asia Congress on Mecatronics (Mecatronics 2014), Hachioji, Tokyo, 2014/11/27
25. "Visual Environment Mapping for Mobile Robot Navigation", 10th France - Japan Congress, 8th Europe - Asia Congress on Mecatronics (Mecatronics 2014), Hachioji, Tokyo, 2014/11/27

(c)研發與產學合作計畫

1. 運用於大範圍未知監視環境之高精度機器人導航與控制(3/3), 103/8-104/7
2. 運用於大範圍未知監視環境之高精度機器人導航與控制(2/3), 102/8-103/7
3. 運用於大範圍未知監視環境之高精度機器人導航與控制(1/3), 101/8-102/7
4. 展現自主機器人高效能導航與控制之線上校準視覺式智慧型空間(3/3), 100/8-101/7
5. 展現自主機器人高效能導航與控制之線上校準視覺式智慧型空間(2/3), 99/8-100/7
6. 展現自主機器人高效能導航與控制之線上校準視覺式智慧型空間(1/3), 98/8-99/7
7. 高精度空間圖樣比對演算法開發, 103/3-103/11
8. 空間圖樣比對優化技術研究, 102/3-102/11
9. 自動輔助駕駛之動態模型建立與情境分析, 102/2-102/11
10. 視覺迴授控制技術研究, 101/3-101/11
11. 整合先進科技進行順形放射治療之標靶定位－動態即時驗證及治療系統(3/3), 101/1-101/12

12. 六自由度跟隨式機械手臂之互動混合控制(3/3), 101/1-101/12
13. 六自由度跟隨式機械手臂之互動混合控制, 99/2-99/12
14. 眼在手視覺伺服定位技術研究, 100/3-100/11
15. 整合先進科技進行順形放射治療之標靶定位－動態即時驗證及治療系統(3/3), 101/1-101/12
16. 整合先進科技進行順形放射治療之標靶定位-子計畫二：超音波影像與電腦斷層掃描影像對位技術(2/3), 100/1-100/12
17. 子計畫一：整合先進科技進行順形放射治療之標靶定位-六自由度跟隨式機械手臂之互動混合控制(2/3), 100/1-100/12
18. 總計畫：整合先進科技進行順形放射治療之標靶定位-動態即時驗證及治療系統(2/3), 100/1-100/12
19. 眼在手視覺伺服定位技術研究, 100/3-100/11
20. 眼在手空間視覺技術研究, 99/3-99/11
21. 超音波影像與電腦斷層掃描影像對位技術, 99/2-99/12
22. 整合先進科技進行順形放射治療之標靶定位, 99/2-99/12
23. 高精度空間圖樣比對演算法開發, 103/3-103/11
24. 空間圖樣比對優化技術研究, 102/3-102/11
25. 自動輔助駕駛之動態模型建立與情境分析, 102/2-102/11
26. 視覺迴授控制技術研究, 101/3-101/11

(d)專利

1. “洗地機器人”, 發明專利, 中華民國, 專利號碼：I345961, 發明人：張文中, 專利權人：臺北科大, 專利核准日期：2011/08/01
2. “Floor washing robot”, 發明專利, U.S.A., 專利號碼：US 8, 001, 651 B2, 發明人：Wen-Chung Chang, 專利權人：NTUT, 專利核准日期：2011/08/23
3. “具有可滑動的吸盤的吸附裝置”, 發明專利, 中華民國, 專利號碼：I435983, 發明人：張文中, 專利權人：臺北科大, 專利核准日期：2014/05/01
4. “即時監測標靶位置之放射治療系統”, 發明專利, 中華民國, 專利號碼：I454246, 發明人：陳裕仁、張文中、劉家源、陳金聖, 專利權人：臺北科大、馬偕醫院, 專利核准日期：2014/10/01
5. “ターゲット位置をリアルタイムでモニタリングする放射線治療システム”, 發明專利, Japan, 專利號碼：特許第 5497084 號, 發明人：陳裕仁、張文中、劉家源、陳金聖, 專利權人：臺北科大、馬偕醫院, 專利核准日期：2014/03/14

6. “Radiotherapy system adapted to monitor a target location in real time”, 發明專利, U.S.A., 申請案號：13/466,142, 發明人：陳裕仁、張文中、劉家源、陳金聖, 專利權人：臺北科大、馬偕醫院, 申請日：2012/05/08
7. “Radiotherapy system adapted to monitor a target location in real time”, 發明專利, European Union, 申請案號：12167120.0, 發明人：陳裕仁、張文中、劉家源、陳金聖, 專利權人：臺北科大、馬偕醫院, 申請日：2012/05/08

(e)技術移轉

1. “自動相搖檢測技術開發”, 先期技轉, Lumens 203A203, 2014/9/1 至 2015/2/28
2. “自動光學檢測系統開發”, 先期技轉, Lumens 204A040, 2015/3/1 至 2015/8/31

其他表現

(a)近五年內最具代表性之學理創新或應用技術突破

1. 新世紀人性化智慧型運輸系統-子計畫三：全方位車輛控制系統：適應性即時視覺車輛追蹤系統(Adaptive Real-Time Vehicle Detection System)
2. 展現自主機器人高效能導航與控制之線上校準視覺式智慧型空間(On-Line Calibrated Visual Intelligent Space for Flexible and Efficient Navigation and Control of Autonomous Mobile Robots)
3. 整合先進科技進行順形放射治療之標靶定位-六自由度跟隨式機械手臂之互動混合控制(Integration of advancing technologies for target localization in conformal radiotherapy – Hybrid control with contact interactions for human-commanded 6-DOF robotic manipulation)
4. 眼在手視覺伺服定位技術研究(Study on Eye-in-Hand Visual Servo Positioning)
5. 運用於大範圍未知監視環境之高精度機器人導航與控制(High-Precision Navigation and Control of Mobile Robots in Unknown Large-Scale Surveillance Environments)

(b)近五年協助產業發展績效

1. 產學合作: 工業技術研究院–眼在手空間視覺技術研究，致力於 3C 產業自動化組裝技術之研發。
2. 產學合作：國立臺北科技大學暨馬偕紀念醫院 - 整合先進科技進行順形放射治療之標靶定位-六自由度跟隨式機械手臂之互動混合控制，致力於放射治療標靶定位之跟隨式機械手臂互動混合控制系統。
3. 產學合作: 工業技術研究院–眼在手視覺伺服定位技術研究，致力於 3C 產業自動化視覺伺服組裝技術之研發。

4. 產學合作：工業技術研究院－視覺迴授控制技術研究，致力於自動化產線視覺伺服應用技術之研發。
5. 產學合作：車輛研究測試中心－自動輔助駕駛之動態模型建立與情境分析，致力於探討人車路動態模型與架構以期導入駕駛輔助系統之研究。
6. 產學合作：捷揚光電股份有限公司－自動相搖檢測技術開發，致力於研發攝影機生產線上的自動化相搖檢測技術。
7. 協助產業發展: Echelon Certified Instructor 美商埃施朗公司認證講師－ Certification Programs: “Introduction to LonWorks Device and Network Design”, “LonWorks Networks Design”, and “Using the LonMaker Integration Tool”
8. 實作研究: 具體實現下列應用系統，成功驗證所發展各項系統控制理論及策略。
   (1) 3-D contour reconstruction based on active laser projector and real-time vision
   (2) Omni-directional real-time vision system for improving driver safety
   (3) Vacuum absorption-based window cleaning home robot
   (4) Four legged window cleaning robot
   (5) Cooperative manipulation and transportation of mobile robots based on visual simultaneous localization and mapping
   (6) Hybrid force and vision-based tracking control of a six-DOF robotic manipulator
   (7) Automatic Robot assembly with eye-in-hand binocular visual servoing and structured lighting
   (8) Automatic Camera-Shake Detection
   (9) Face-tracking Aerial Robot for Self-portrait
   (10) Automatic Following Aerial Robotic Recorder

(c)近五年國內外之成就與榮譽

1. 特別議程主席、論文主席 and Session Chair, 2010 National Symposium on System Science and Engineering, NSSSE 2010, Taipei, Taiwan, Jul. 1-2, 2010.
2. Registration Chair and Session Chair, The International Conference on System Science and Engineering , ICSSE 2010, Taipei, Taiwan, Jul. 1-3, 2010.
3. Session Chair, Technical Session: TA17 Robotic System Control, TheSICE Annual Conference2010, Taipei, Taiwan, Aug. 18-21, 2010.
4. PC Member, The 2010 IEEE International Conference on Systems, Man and Cybernetics, Istanbul, Turkey, Oct. 10-13, 2010.

5. Session Chair, Technical Session: TP7-(R) Visual Servoing, The 11th International Conference on Control, Automation, Robotics and Vision, ICARCV 2010, Singapore, Dec. 7-10, 2010.
6. Session Chair, Technical Session: Intelligent Automation and Manufacturing, 2011 World Congress on Intelligent Control and Automation (WCICA 2011), Taipei, Taiwan, Jun. 21-25, 2011.
7. Session Chair, Technical Session: A4 Vision 1, 2011 TheIEEE/SICE International Symposium on System Integration (SII2011), Kyoto, Japan, Dec. 20-22, 2011.
8. PC Member, 43rd International Symposium on Robotics (ISR 2012), Aug. 29-31, Taipei, Taiwan, 2012.
9. Session Chair, Technical Session: THC3 Industry Robots, 43rd International Symposium on Robotics (ISR 2012), Aug. 30, Taipei, Taiwan, 2012.
10. Session Chair, Technical Session: (SS) System Integration and Applications, 2012 National Symposium on System Science and Engineering (NSSSE 2102), Jun. 16, Keelung, Taiwan, 2012.
11. 2014/09/20 與自動化所及馬偕紀念醫院合作研發之「即時監測標靶位置之放射治療系統」，參加「2014 年台北國際發明暨技術交易展－發明競賽」，榮獲生技醫藥類組第 1 名並獲頒亞洲發明界最高榮譽 INST 鉑金獎。
12. Conference Secretary, 2015 International Conference on Advanced Robotics and Intelligent Systems, May 29-May 31, 2015, National Taipei University of Technology, Taipei, Taiwan.
13. 秘書組籌備委員，2015 台灣智慧型機器人研討會，104 年 5 月 29 - 31 日，國立臺北科技大學。
14. 103 學年第 1 學期，實務研究成果優良榮獲「張孫堆先生獎助金」。

(d)近五年在人才培育、研究團隊建立及服務方面的重要貢獻及成就

1. 2010/12/17 臺北科大電機系九十九年度專題製作競賽，指導鄭浩祥、雷政祥、楊為智、洪佳仁同學，參賽作品「運用紅外線感測器與真空吸盤之小型窗戶清潔機器人」，榮獲「特優獎」；指導朱恆志、陳柏全、賴建州、黃柏諭同學，參賽作品「運用電容式麥克風與焦電式紅外線感測器之聲源追蹤監視機器人」，榮獲「佳作獎」。

2. 全國技專校院學生實務專題製作競賽暨成果展第一名：指導學生參加教育部舉辦之「100 年度全國技專校院學生實務專題製作競賽暨成果展」，參賽作品「吸窗達人」在電機群 66 隊參賽隊伍中，榮獲「第一名」。(May 28, 2011)
3. 2011/12/16 臺北科大電機系一百年度專題製作競賽，指導倪嘉君、葉怡伶、葉人豪、洪鈞晟同學，參賽作品「四足爬窗清潔機器人」，榮獲「特優獎」；指導朱賴冠宇、湯雅蘭、鄭益昌、官旻杰同學，參賽作品「運用視訊及語音辨識之倒茶機器人」，榮獲「優勝獎」；指導曾怡萱、凌歡辰、阮聖翔、廖英翰同學，參賽作品「具影像與聲音判斷之雙足機器人」，榮獲「佳作獎」。
4. 2012/12/27 臺北科大電機系一百零一年度專題製作競賽，指導林冠宏、高宜萱、黃柏勳、洪資堯同學，參賽作品「跨窗清潔機器人」，榮獲「特優獎」;指導佟建達、蕭伊葶、陳志昇、李昕同學，參賽作品「拋繩救援型飛行載具操控系統」，榮獲「佳作獎」。
5. 2013/12/20 臺北科大電機系一百零二年度專題製作競賽，指導簡皓仙、倪暉勝、蕭博元、李宗穎同學，參賽作品「室內監視飛行球系統」，榮獲「優勝獎」；指導王柏勳、顏嘉佑、賴建圻、李育瑋同學，參賽作品「應用於勘查暨清潔任務之微型飛行球系統」，榮獲「優勝獎」；指導陳奕辰、霍克安、許榮顯、蔡宗軒同學，參賽作品「銀髮族居家幫手機器人」，榮獲「佳作獎」。
6. 2014/12/19 臺北科大電機系一百零三年度專題製作競賽，指導李虹儀、陳思貝、王建順同學，參賽作品「人臉追蹤自拍飛行器」，榮獲「特優獎」；指導王靖緯、左宗岳、陳毅航同學，參賽作品「自動跟隨飛行記錄器」，榮獲「優勝獎」；指導卓泰延、柯冠銘、陳孟琪同學，參賽作品「居家用品 3D 比對應用」，榮獲「佳作獎」。

馬尚智　副教授　*Shang-Chih Ma*

研究室名稱：無線通訊研究室 Wireless Communication Laboratory

聯絡電話：02-2771-2171 #2169

E-mail：scma@ntut.edu.tw

網址：http://140.124.43.63/lab6.html?tsn=43

專長領域：**數位通訊、錯誤更正碼**

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

近年重要論文及著述

(a) 期刊論文

1. Shang-Chih Ma, "Bandwidth efficient concatenated coding schemes, " IET Communications, vol. 4, no. 1, pp.26-31, Jan.2010.
2. Shang-Chih Ma, "Multilevel concatenated space-time block codes, "IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, vol. E93-A, no.10, pp.1845-1847, Oct.2010.
3. Shang-Chih Ma, "Interlevel-correlated orthogonal space-time block codes based on the expanded signal constellation, "Wireless Communications & Mobile Computing, vol. 12, pp.1157-1164, Aug.2012.
4. Shang-Chih Ma, "Extended space-time multilevel coded spatial modulation, "Journal of the Chinese Institute of Engineers, vol. 36, no. 6, pp.715-720, Sept.2013.

(b)研討會論文

1. Shang-Chih Ma and *Hong-Yu Chou*, "RS-concatenated multilevel space-timecodes, " **IEEE VTS Asia Pacific Wireless Communications Symposium**, Kaohsiung, Taiwan, May 20-21, 2010.
2. Shang-Chih Ma and Chia-Hao Lin, "Multilevel concatenated space-timeblock codes, " **IEEE International Conference on System Science and Engineering**, Taipei, Taiwan, July 1-3, 2010.
3. Shang-Chih Ma andShu-Jui Kuo, "Concatenation of Reed-Solomon codes and interlevel-correlated multilevel space-time codes, "IEEE International Symposium on Intelligent Signal Processing and Communication Systems, New Taipei, Taiwan, Nov. 4-7, 2012.

5. Shang-Chih Ma, "Concatenatedmultilevel coset codes with interlevel-coding, "IEEE International Symposium on Next-Generation Electronics, Kaohsiung, Taiwan, Feb. 25-26, 2013.
6. Shang-Chih Ma, "Rate-compatible punctured convolutional coded spatial modulation," **International Scientific Conference on Engineering and Applied Sciences**, Singapore, Aug. 15-17, 2014.

(c)研發與產學合作計畫

1. 下世代IP電信關鍵技術研發與系統建置5年計畫, 101年5月1日至106年4月30日, 經濟部一般型學界科專計畫
2. 碼率相容刪除卷積編碼空間調變, 103 年 08 月 01 日 至104 年 07 月 31 日,科技部計畫

張正春　副教授　*Cheng-Chun Chang*

研究室名稱：應用訊號處理研究室 Applied Signal Processing Laboratory

聯絡電話：02-2771-2171 #2195

E-mail：ccchang@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~ccchang/index.htm

研究聚焦領域：■H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：光譜感測器訊號處理、通訊訊號處理、生醫訊號處理、可見光通訊

近年重要論文及著述

(a)期刊論文

1. "MB iterative decoding algorithm on systematic LDGM codes: performance evaluation", Signal Processing, 373-377, 2010/1/1
2. "Dimensionality reduction in control and coordination of the human hand", IEEE Transactions on Biomedical Engineering, 284-295, 2010/2/1
3. "Temporal postural synergies of the hand in rapid grasping tasks", IEEE Transactions on Information Technology in Biomedicine, 986-994, 2010/7/1
4. "A fast BER evaluation method for LDGM codes", Journal of the Franklin Institute, 1368-1373, 2010/9/1
5. "Throughput behavior of link adaptive 802.11 DCF with MUD capable access node", International Journal of Electronics and Communications, 1031-1041, 2010/11/1
6. "Filter-based miniature spectrometers: spectrum reconstruction using adaptive regularization", IEEE Sensors Journal, 1556-1563, 2011/7/1
7. "Accelerating regular LDPC code decoders on GPUs", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 653-659, 2011/9/1
8. "Accurate sensing of LED spectrum via low cost spectrum sensor", IEEE Sensors Journal, 2869-2877, 2011/11/1
9. "Spectrum reconstruction for filter-array spectrum sensor from sparse template selection", Optical Engineering, 114402/1-114402/7, 2011/11/1
10. "User-satisfaction based bandwidth allocation for transmission of multiple sources of human perceptual data", Journal of the Franklin Institute, 879-890, 2012/4/1
11. "Interference rejection using filter-based sensor array in VLC systems", IEEE Sensors Journal, 1025-1032, 2012/5/1
12. "Spectrum reconstruction for on-chip spectrum sensor array using a novel blind nonuniformity correction method", IEEE Sensors Journal, 2586-2592, 2012/8/1

(b)研討會論文

1. "High-throughput GPU-based LDPC decoding", Proc. of SPIE Satellite Data Compression, Communications, and Processing, San Diego, CA, 2010/8/3
2. "LED spectrum measurement via low cost spectrum sensor on-a-chip", Asia Communications and Photonics Conference and Exhibition, Shanghai, 2010/12/8
3. "適應性資源配置演算法於正交分頻多工存取下鍵系統在比例速率限制下之效能改進", 全國電信研討會, 桃園, 2010/12/3
4. "上行正交分頻多重存取系統載波頻率偏移之估計與補償", 民生電子研討會, 台南, 2010/11/5
5. "Robust visible light communications system using filter-based sensor array", Proc. of SPIE Defense Security, and Sensing, Orlando, 2011/4/25
6. "Spectrum reconstruction for filter-array spectrum sensor using sparse representation", Proc. of SPIE Defense Security, and Sensing, Orlando, 2011/4/25
7. "Sensing of FWHM and peak wavelength for LEDs via a low-cost filter-based spectrum sensor", Proc. of SPIE Defense Security, and Sensing, Orlando, 2011/4/25
8. "Design of GPU-based platform for LDPC decoder", Proc. Of IEEE International Geoscience and Remote Sensing Symposium, Vancouver, 2011/7/24
9. "利用光感測器陣列實現可見光通訊系統之通道分配演算法", 民生電子研討會, 臺南, 2011/11/11
10. "濾光器陣列實現 CIE XYZ 顏色測量之方法", 民生電子研討會, 臺南, 2011/11/11
11. "應用基因演算法於 OFDMA 系統之聯合通道估計及多用戶偵測", 民生電子研討會, 臺南, 2011/11/11
12. "混合田口運算技術與粒子群演算法之上行正交分頻多重存取系統之載波頻率偏移估計", 民生電子研討會, 臺南, 2011/11/11
13. "數位高品質心音訊號粹取演算法設計", 智慧電子應用設計研討會, 桃園, 2012/2/6
14. "Estimation of carrier frequency offsets for uplink OFDMA system using a hybrid Taguchi-mutated-particle swarm optimization approach", The IEEE International Conference on Systems, Man, and Cybernetics, Seoul, 2012/10/14
15. "A sensor array approach for robust wavelength division multiplexing in VLC systems", The IEEE Conference on Industrial Electronics and Applications, Singapore, 2012/7/18
16. "A sparse template selection algorithm for spectrum measurement using miniature filter array spectrum sensors", The IEEE Conference on Industrial Electronics and Applications, Singapore, 2012/7/18
17. "LED spectrum measurement using low-cost spectrum sensor array and particle swarm optimization", Spring World Congress on Engineering and Technology,西安, 2012/5/26

18. "Joint channel estimation and multi-user detection for OFDMA systems using a genetic algorithm with simulated annealing-based mutation", IEEE International Conference on Systems, Man, and Cybernetics, Manchester, 2013/10/13
19. "Water velocity sensing and turbidity sensing using visible light communication modules", IEEE Sensors Conference, Baltimore, 2013/11/3
20. "Monitor color sensing using low-cost filter array spectrum sensor", IEEE Sensors Conference, Baltimore, 2013/11/3
21. "Effectively extracting heart sound signal for digital stethoscope application", IEEE International Symposium on Computer, Consumer and Control, Taichung, 2014/6/10
22. "寬頻通訊系統同頻中繼器之數位回授消除模組設計", 民生電子研討會, 宜蘭, 2013/11/12
23. "A low-cost mobile device for skin tone measurement using filter array spectrum sensor", IEEE Sensors Conference, alencia, 2014/11/2
24. "Spectrum reconstruction from MIMO perspectives for realizing low-cost on-chip spectrometers", IEEE Sensors Conference, Valencia, 2014/11/2
25. "Selected combining for efficient WDM-VLC system using filter array receiver", IEEE Conference on Industrial Electronics and Applications, Hangzhou, 2014/6/9
26. "Channel estimation of uplink OFDMA system based on pilot arrangements", 民生電子研討會, 台中, 2014/11/29

(c)研發與產學合作計畫

1. 利用光陣列感測器實現晶片式光譜儀與色度儀之前瞻演算法研發(2/2), 102/8-103/7
2. 利用光陣列感測器實現晶片式光譜儀與色度儀之前瞻演算法研發(1/2), 101/8-102/7
3. 視障者資訊輔具計畫--用於視障之廚房條碼辨識讀出及遠端資料庫存取(2/2), 100/8- 101/7
4. 視障者資訊輔具計畫--用於視障之廚房條碼辨識讀出及遠端資料庫存取(1/2), 99/8-100/7
5. 訊號處理的研發與探討用於實現精確的光譜偵測與估測基於低成本奈米濾波器架構之頻譜感應器, 100/8-101/7
6. 訊號處理的研發與探討用於實現精確的光譜偵測與估測基於低成本奈米濾波器架構之頻譜感應器, 99/8-100/7
7. 訊號處理的研發與探討用於實現精確的光譜偵測與估測基於低成本奈米濾波器架構之頻譜感應器, 98/11-99/7
8. 應用感測網路之可見光通訊模組可行性分析與評估, 101/5-101/12
9. WCDMA 系統中繼站自干擾消除模組之研發, 100/8-101/7
10. WCDMA 系統中繼站自干擾消除模組之研發, 99/3-100/7

于治平　副教授　*Chih-Ping Yu*

研究室名稱：類比與數位晶片設計研究室 Analog and Digital IC Design Laboratory

聯絡電話：02-2771-2171 #2157

E-mail：cpyu@ntut.edu.tw

研究聚焦領域：■H健康科技■ I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：電子電路，數位電路，微處理器電路應用

近年重要論文及著述

(a)期刊論文

1. "A 10-bit 1.8 V 45 mW 100 MHz CMOS transmitter chip for use in an XDSL modem in a home network", Analog Integrated Circuits and Signal Processing, 515-527, 2014/11/1
2. "2-D Differential Folded Vertical Hall Device 2-D Differential Folded Vertical Hall Device Using CMOS Technology", IEEE SENSORS JOURNAL, 2253-2262, 2013/6/1
3. "Mixed-signal transmitter chip with digital bridge and analogue front-end for XDSL in home networks", IET Networks, 181-188, 2012/10/1
4. "Two-dimensional folded CMOS Hall device with interacting lateral magnetotransistor and magnetoresistor", Sensors and Actuators A: Physical, 6–15, 2012/8/1
5. "Mixed-Mode Chip Implementation of Digital Space SVPWM with Simplified-CPU and 12-Bit 2.56 Ms per s Switched-Current Delta-Sigma ADC in Motor Drive", IEEE Trans. on Power Electronics, 915-930, 2012/2/1

(b)研討會論文

1. "Predictive direct torque control ASIC with speed feedback controller in motor drive", Systems, Man and Cybernetics (SMC), 2014 IEEE International Conference, San Diego, CA, 2014/10/5
2. "Predictive Direct Torque Control ASIC with Speed Feedback Controller", The 25th VLSI Design/CAD Symposium, 臺中市, 2014/8/5
3. "馬達控制網路用之低功率位址分類晶片研究", 第 33 屆電力工程研討會, 臺北市, 2012/12/7
4. "Two-dimensional folded Hall sensor fabricated in standard CMOS technology", IEEE SENSORS 2012, Taipei, 2012/10/28
5. "成功的專案經理人特質：由尼希米談起", 2012 聖經、科學與教育國際研討會, 新北市, 2012/5/18

(c)研發與產學合作計畫

1. 教育部補助 100-101 年度獎勵科技大學教學卓越計畫-主軸六續傳教學 e 效能-全都錄計畫, 100/1-100/12

(d)其他

1. 2014 Fourth International Symposium on Technology for Sustainability (ISTS2014) 研討會論文審查委員會委員。
2. 勞動部勞動力發展署技能檢定中心，技術士技能檢定術科測試監評人員資格。

黃明熙　副教授　*Ming-Shi Huang*

研究室名稱：數位功率控制研究室

聯絡電話：02-2771-2171 #2139

E-mail：simonh@ntut.edu.tw

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電動機控制, 電力電子

近年重要論文及著述

(a)期刊論文

1. "Tracking Control of Thrust Active Magnetic Bearing System via Hermite Polynomial-Based Recurrent Neural Network", IET Electrical Power Application, 15, 2010/11/1
2. "Intelligent double integral sliding-mode control for five-DOF active magnetic bearing", IET Control Theory Applications, 17, 2011/4/1
3. "Adaptive Complementary Sliding-Mode Control with MIMO RHNN Estimator for Thrust Active Magnetic Bearing System", Control Engineering Practice, 12, 2011/5/1
4. "Digital-controlled single-phase transformer-based inverter for non-linear load applications", IEEE Transaction of Industrial Informatics, 10, 2013/5/1
5. "用於永磁同步馬達之具類弦波定子電流的六步波電壓驅動技術", 電機月刊, 8, 2013/1/1
6. "Takagi-Sugeno-Kang type probabilistic fuzzy neural network control for grid-connected LiFePO4 battery storage system", IET Electric Power Applications, 12, 2013/6/1

(b)研討會論文

1. "Design and implementation of a bi-directional power flow battery test system", The 8th International Workshop on Power Electronics and Motion Control, Busan, 2011/2/18
2. "以數位化實現具隔離高升壓比之雙向直流-直流轉換器", 第卅一屆電力工程研討會, 台南, 2010/12/3
3. "Novel Bi-directional AC-DC with Fast Dynamic Response for EV/HEV Battery Testing", 第 32 屆電力研討會, 台北, 2011/12/2
4. "Novel Bi-directional AC-DC Converter for Electrical Vehicle Battery Testing", IEEE IECON, Melbourne, 2011/11/7
5. "A Novel PMSM Drive using Digital Hall-Effect Sensors for Electric Scooter", The 10th International Workshop on Power Electronics and Motion Control, Nagoya, 2013/3/8
6. “An accurate torque control of permanent magnet brushless motor using low-resolution hall-effect sensors for light electric vehicle applications, ” accepted by 2013 IEEE ECCE, Sept. 2013.

(c)研發與產學合作計畫

1. Design and Implementation of a High Efficiency, Dual-Module Paralleled DC-DC Converter for Fuel-cell Hybrid Scooter(2009-2010)98/1-99/12
2. Minimizing torque ripple and optimizing efficiency for dual axial flux PM motor in paralleled operation(2012-2013)101/1-102/12
3. Analysis and design Micro hybrid system for hybrid vehicle.(HAITEC, 2011)100/1-100/12
4. Design a drive technology for electric scooter.(SYM, 2010~2012)99/1-101/12
5. Torque control and energy harvest for Fitness Equipment.(RHYMEBUS, 2011~2012)100/1-101/12
6. Fast acceleration and deceleration control for high speed spindle motor drive(ITRI, 2012)101/1-101/12
7. Design Plug-in Hybrid system for electric scooter.(SYM, 2012~2013)101/1-102/12

歐勝源　副教授　*Sheng-Yuan Ou*

研究室名稱：電力電子技術中心

聯絡電話：02-2771-2171 #2166

E-mail：syou@ntut.edu.tw

網址：http://140.124.43.217/

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電力電子

近年重要論文及著述

(a)期刊論文

1. “Design and Implementation of a Novel ZCS-PWM Half-Bridge Boost Rectifier with Output Voltage Balance Control, ” IEEE Trans. on Industrial Electronics, vol. 59, no. 12, pp.4646–4656, Dec.2012.
2. “A Novel Variable Frequency Modulation Technique to Improve Light-Load Efficiency for Multiphase Synchronous Rectified VRM, ” International Journal of Circuit Theory and Applications, vol. 40, no. 11, pp. 1085–1105, Nov. 2012.
3. “Analysis and Design of a Novel Single-Stage Switching Power Supply with Half-Bridge Topology, ” IEEE Trans. on Power Electronics, vol. 26, no. 11, pp.3230–3241, Nov. 2011.
4. “Design of a Two-Output Forward Converter with an Output Voltage Objective Function, ” International Journal of Circuit Theory and Applications, vol. 29, no. 12, pp. 1199–1213, Dec. 2011.
5. “Improved Control-to-Output Characteristics of a PWM Buck-Boost Converter, “International Journal of Circuit Theory and Applications, vol. 39, no. 2, pp. 203–209, Feb. 2011.
6. “Analysis and research on Maximum Power Point Tracking of Photovoltaic Array with Fuzzy Logic Control and Three-point Weight Comparison Method, ” Technological Science, Science China, vol.53, no.8: pp.2183-2189, Aug. 2010.

(b)研討會論文

1. “Design and Implementation of a Variable-Frequency Multiphase VRM with Optimized Phase-Reduction Control, ” IEEE Conf. on Progress In Electromagnetics Research Symposium, 33th PIERS2013, 25-28 March, 2013, Taipei, Taiwan.
2. “Design and Implementation of an LED Switching Regulator using Inverse Buck Topology, ” IEEE Conf. on Progress In Electromagnetics Research Symposium, 33th PIERS2013, 25-28 March, 2013, Taipei, Taiwan.

3. “An Adaptive Current-Sharing Control Technology for Multi Power Module with Hot Swapping, ” IEEE Conf. on Progress In Electromagnetics Research Symposium, 33th PIERS2013, 25-28 March, 2013, Taipei, Taiwan.
4. “Implementation and Study of Super-Capacitor Cell Power Management System, ” IEEE Conf. on Progress In Electromagnetics Research Symposium, 33th PIERS2013, 25-28 March, 2013, Taipei, Taiwan.
5. 「太陽能發電系統遭遇遮蔽效應下之複合式最大功率追蹤器之研製」，第三十三屆中華民國電力研討會，2012 年 12 月 7 日，台灣，台北。
6. 「具有降相最佳化控制之變頻同步整流 VRM 研製」，第三十三屆中華民國電力研討會，2012 年 12 月 7 日，台灣，台北。
7. “Design and Implementation of a Variable Frequency Synchronous Rectified VRM with Phase Reduction, ” The 9th International Mini-Workshop on Power Electronics and Motion Control, 9-10 March, 2012, Taipei, Taiwan.
8. “Analysis and Compensation of the Output Voltage Imbalance in a Four-Switch Half-Bridge PFC, ” IEEE Conf. on Power Electronics and Drive Systems, 9th PEDS2011, 5-8 December, 2011, Singapore.
9. “Design and Implementation of a DSP-Based Fast Charger for Li-ion Battery, ” IEEE Conf. on Power Electronics and Drive Systems, 9th PEDS2011, 5-8 December, 2011, Singapore.
10. “Analysis of Output Capacitor Parasitic Effects to Output Voltage Ripple on Power Converter, ” IEEE Conf. on Power Electronics and Drive Systems, 9th PEDS2011, 5-8 December, 2011, Singapore.
11. “Design and Implementation of a Hybrid Maximum Power Point Tracker in Solar Power System, ” IEEE Conf. on Power Electronics and Drive Systems, 9th PEDS2011, 5-8 December, 2011, Singapore.
12. “Design and Implementation of a Novel Soft-Switching Half-Bridge Power Factor Corrector with Output Voltage Balance Control, ” IEEE Conf. on Industrial Electronics, 37th IECON 2011, 7-10 November, 2011, Melbourne, Australia.
13. “Design and Implementation of a Novel Soft-Switching Half-Bridge Rectifier with Output Voltage Balance Control, ” The 8th International Mini-Workshop on Power Electronics and Motion Control, 18-19 February, 2011, Bussan, Korea.
14. “A Novel Variable Frequency Modulation Technique for Multiphase Synchronous Rectified VRM, ” IEEE Conf. on Industrial Electronics and Applications, ICIEA2010, 15-17 June, 2010, Taichung, Taiwan.
15. “Analysis and Design of a Prototype Single-Stage Half-Bridge Power Converter, ” IEEE Conf. on Industrial Electronics and Applications, ICIEA2010, 15-17 June, 2010, Taichung, Taiwan.

16. 「用於太陽能發電系統之複合式最大功率追蹤器的研製」，第九屆台灣電力電子研討會，2010 年 9 月 3 日，台灣，嘉義。
17. 「四開關半橋式功率因數修正器輸出電壓不平衡之分析與補償」，第九屆台灣電力電子研討會，2010 年 9 月 3 日，台灣，嘉義。
18. 「以 DSP 實現之鋰離子電池快速充電器研製」，第九屆台灣電力電子研討會，2010 年 9 月 3 日，台灣，嘉義。
19. 「輸出電容器寄生元件對 dc-dc 電力轉換器輸出電壓漣波之影響」，第九屆台灣電力電子研討會，2010 年 9 月 3 日，台灣，嘉義。
20. 「新型零電流切換半橋式功率因數修正器之研製」，第九屆台灣電力電子研討會，2010 年 9 月 3 日，台灣，嘉義。

(c)專利

1. “半橋式單級電力轉換器”，中華民國專利，發明第 I 352493 號；100 年 11 月 11 日獲證。
2. “適用於單級電力轉換器之穩壓變頻控制裝置”，中華民國專利，發明第 I 363479 號；101 年 5 月 1 日獲證。
3. “具有變頻調變功能的電壓調節模組系統”，中華民國專利，發明第 I 403077 號；102 年 7 月 21 日獲證。
4. “電流饋入式半橋單級電力轉換器”，中華民國專利，發明第 I 433438 號；103 年 4 月 1 日獲證。
5. “具有柔性切換之新式半橋式功率因數修器”，中華民國專利發明第 I 435521 號；103 年 4 月 21 日獲證。

李俊賢　副教授　*Jin-Shyan Lee*

研究室名稱：網路與監控應用研究室 Network and Supervision Applications Laboratory

聯絡電話：02-2771-2171 #2175

E-mail：jslee@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~jslee/lab317/

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：網路型監控系統、無線感測網路、Petri nets、離散事件控制系統、ZigBee

近年重要論文及著述

(a)期刊論文

1. "ZigBee 技術規格與測試認證之介紹", 中國工程師學會會刊, 22-29, 2010/4/1
2. "A filtering agent scheme to remote control of industrial processes using Petri nets", Expert Systems with Applications, 15310-15315, 2011/11/1
3. "A modular command filtering approach to coordination of flexible manufacturing systems", International Journal of Advanced Manufacturing Technology, 1115-1123, 2011/10/1
4. "ZigBee security for residential sensor networks", Smart Computing Review, 95-103, 2011/12/1
5. "無線感測網路群集方法於救災資訊系統上之應用與模擬", 電腦與通訊, 80-87, 2012/2/1
6. "A Vectorized Data Communication System for Localization in ZigBee Sensor Networks", Advanced Science Letters, 487-492, 2012/4/1
7. "Fuzzy-logic-based clustering approach for wireless sensor networks using energy predication", IEEE Sensors Journal, 2891-2897, 2012/9/1
8. "Experimental evaluation of ZigBee-based wireless networks in indoor environments", Journal of Engineering, 9 pages, 2013/2/1

(b)研討會論文

1. "Applications of short-range wireless technologies to industrial automation: A ZigBee
2. "A Preliminary Application of Petri Nets to the Supervision of Remotely Operated Systems", IECON: The Annual Conference of the IEEE Industrial Electronics Society, Phoenix, AZ, 2010/11/7
3. "Model Construction of Pharmaceutical Manufacturing Processes Using Petri Nets", IEEE ICIEA (International Conference on Industrial Electronics & Applications), Beijing, 2011/6/21

4. "A gateway-based inter-PAN binding mechanism for ZigBee sensor networks", The 37th Annual Conference of the IEEE Industrial Electronics Society (IECON), Melbourne, 2011/11/7
5. "磁性元件參數設計整合平台之實現", WCE, 民生電子研討會, 台中, 2011/11/11
6. "以 ZigBee 為基礎之居家感測網路實現", WCE, 民生電子研討會, 台中, 2011/11/11
7. "以無線感測網路為基礎之智慧型居家監控系統", 中華民國系統科學與工程研討會 NSSSE, 基隆, 2012/6/16
8. "A UML-Based Approach to Automatic Cruise Control Modeling for Smart Vehicles", IEEE ICIEA (International Conference on Industrial Electronics & Applications), Singapore, 2012/7/18
9. "Hybrid P2P Client-Server Data Transmission Using Dynamic Peer Grouping and Switching", International Symposium on Computer, Consumer and Control, Taichung City, 2012/6/4
10. "Performance Evaluation of ZigBee-Based Sensor Networks Using Empirical Measurements", IEEE-CYBER 2012: IEEE International Conference on Cyber Technology in Automation, Control and Intelligent Systems, 曼谷, 2012/5/27
11. "Behavior modeling and remote control of industrial conveyor systems via internet", IEEE Conf. Industrial Electronics and Applications (ICIEA), Melbourne, 2013/6/19
12. "以傳輸功率控制為基礎之無線感測網路節能方法", 中華民國系統科學與工程研討會, 新北市板橋, 2013/6/8
13. "Cross-coupling control design for performance enhancement of vehicle active suspension System", 中華民國系統科學與工程研討會, 新北市板橋, 2013/6/8
14. "A comparative study of communication disturbance observers for time-delay systems", IEEE Conf. Industrial Electronics and Applications (ICIEA), Hangzhou, 2014/6/9
15. "移動式感測網路之群集簇頭演算法研究", 中華民國系統科學與工程研討會, 金門, 2014/6/21
16. "Development of a remote management system for automatic parking towers through mobile devices", IARIA International Conference on Systems and Networks Communications (ICSNC), Nice, 2014/10/12

(c)研發與產學合作計畫

1. 無線感測網路技術於工程實習課程教學之應用(深耕技職教育與工程教育), 2013/12~2014/10, 國科會
2. 基於無線感測網路之智慧節能通訊與控制系統技術研發(II), 2012/08~2013/07, 國科會
3. 基於無線感測網路之智慧節能通訊與控制系統技術研發(I) , 2011/08~2012/07, 國

科會

4. 居家感測網路之自助式監控系統研發(II), 2010/08~2011/07, 國科會
5. 居家感測網路之自助式監控系統研發(I), 2009/11~2010/11, 國科會
6. 於救災資訊系統之無線感測網路群集方法, 2011/08 ~ 2011/12
7. 以 ZigBee 網路為基礎之醫療工作車定位與追蹤, 2014/07~2015/02
8. 網路型交流馬達控制系統之時間延遲分析與實作, 2013/07~2014/02
9. ZigBee 無線網路定位之環境監控系統, 2012/07~2013/02
10. 立體停車場之遠端可程式化控制系統, 2011/07~2012/02
11. 無線定位與即時回報之移動式監控機器人, 2011/07~2012/02

吳昭正　助理教授　*Chao-Cheng Wu*

研究室名稱：遙測與醫療影像處理研究室 Remote Sensing and Medical Image Processing
聯絡電話：02-2771-2171 #2114
E-mail：ccwu@ee.ntut.edu.tw
網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1292
研究聚焦領域：■ H健康科技 ■ I智慧整合科技 □ G綠色科技 □ H人文與創新元素
專長領域：遙測影像處理與演算法設計、醫學影像處理、目標偵測與識別、資料分群、圖形識別、嵌入式系統設計、TCP/IP 網路架構

近年重要論文及著述

(a)期刊論文

1. Chao-Cheng Wu, Guan-Sheng Huang, and Jiannher Lin, “Statistical gait analysis with smart phone embedded tri-axial accelerometer, ” International Journal of Intelligent Computing in Medical Sciences and Image Processing（IC-MED), Accepted.
2. Chein-I Chang, Chao-Cheng Wu, Keng-Hao Liu, Hsian-Min Chen, Clayton Chi-Chang Chen, and Chia-Hsien Wen, “Progressive Band Processing of Linear Spectral Unmixing for Hyperspectral Imagery,” *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. PP , no. 99, pp. 1-15, December, 2014.
3. Shih-Yu Chen, Yulei Wang, Chao-Cheng Wu, Chunhong Liu, Chein-I Chang, “Real-time causal processing of anomaly detection for hyperspectral imagery,” *IEEE Transactions on Aerospace and Electronic Systems*, vol.50, no.2, pp.1511-1534, April, 2014.
4. Chein-I Chang, Chia-Hsien Wen, Chao-Cheng Wu, “Relationship exploration among PPI, ATGP and VCA via theoretical analysis,” *International Journal of Computational Science and Engineering*, vol. 8, no. 4, pp. 361-367, January 2013.
5. Chein-I Chang, Wei Xiong, and Chao-Cheng Wu, “Field Programmable Gate Array Design of Implementing Simplex Growing Algorithm for Hyperspectral Endmember Extraction, ” *IEEE Trans. on Geoscience and Remote Sensing*, vol. 51, no. 3, pp. 1693 – 1700, August 2012. NSC 101-2221-E-027-134.
6. Wei Xiong, Chein-I Chang, Chao-Cheng Wu, Kalpakis, K., and Hsian Min Chen, “Fast Algorithms to Implement N-FINDR for Hyperspectral Endmember Extraction, ” *IEEE*

Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 4, no. 3, pp. 545-564, May 2011.

7. Chein-I Chang, Xiaoli Jiao, Chao-Cheng Wu, Eliza Du, Hsiao-Ming Chen, "Component Analysis-Based Unsupervised Linear Spectral Mixture Analysis for Hyperspectral Imagery," *IEEE Trans. on Geoscience and Remote Sensing,* vol. 49, no. 11, pp. 4123 – 4137, June 2011.
8. Chein-I Chang, Chao-Cheng Wu, Ching-Tsorng Tsai, "Random N-FINDR for automatic endmember extraction algorithm, " *IEEE Trans. on Image Processing*, vol. 3, no. 20, pp. 641-656, March 2011.
9. Chein-I Chang, Wei Xiong, Weimin Liu, Mann-Li Chang, Chao-Cheng Wu, C.C.-C. Chen, "Linear Spectral Mixture Analysis Based Approaches to Estimation of Virtual Dimensionality in Hyperspectral Imagery, " *IEEE Trans. on Geoscience and Remote Sensing*, vol. 48, no. 11, pp. 3960 - 3979, October 2010.
10. Chein-I Chang, Chao-Cheng Wu, Chien Shun Lo, and, Manli Chang, "Real-Time Simplex Growing Algorithms for Hyperspectral Endmember Extraction, " *IEEE Trans. on Geoscience and Remote Sensing,* vol. 48, no. 4, pp. 1834 – 1850, April 2010.
11. Chein-I Chang, Chao-Cheng Wu, and Hsmin Chen, "Random pixel purity index algorithm," *IEEE Trans. on Geoscience and Remote Sensing letters*, vol. 7, no. 2, pp. 324-328, April 2010.
12. Chao-Cheng Wu, Hsmin Chen, and Chein-I Chang, "Real-Time N-Finder Processing Algorithms for hyperspectral imagery," *Journal of Real-Time Imaging Processing*, February 2010.

(b)研討會論文

1. Chao-Cheng Wu, Yi-Ling Chen, Jheng-De Wu, and Chinsu Lin, "Spectral-based Multi-level Morphological Active Contour algorithm for Individual Tree Detection and Crown Delineation, " *IEEE International Geoscience and Remote Sensing Symposium*, Quebec Canada, July 13-18, 2014.
2. "Unsupervised Classification of Cross-section Area of Spinal Canal, " *2013 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Manchester, UK, Oct. 13-16, 2013.

3. Guan-Sheng Huang, Chao-Cheng Wu, Keng-hao Liu, and Chein-I Chang, "Real-time progressive band processing of modified fully abundance constrained spectral unmixing," *IEEE International Geoscience and Remote Sensing Symposium*, Melbourne, Australia, July 21-26, 2013.
4. Yi-Ling Chen, Chao-Cheng Wu, Hung-Chang Lin, and Chinsu Lin, "A parallel approach of Multi-Level Morphological Active Contour Algorithm for individual tree detection and crown delineation, " *IEEE International Geoscience and Remote Sensing Symposium*, Melbourne, Australia, July 21-26, 2013.
5. Chao-Cheng Wu, Hsiao-Chi Li, Yung-Hsiao Chiang, Jiannher Lin, "Classification of cross-section area of spinal canal on kernel-based support vector machine, " *2012 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Oct. 14-17, Seoul, South Korea, 2012, NTUT-TMU-101-01.
6. Hung-Chang Lin, Chao-Cheng Wu, "Parallel Computing of NFINDR Algorithm using Pipeline FPGA Architecture, " *CVGIP 2012*, Aug. 12-14, Nantou, Taiwan, 2012, NSC 101-2221-E-027-134.
7. Chein-I Chang and Chao-Cheng Wu, "Iterative Pixel Purity Index, " *IEEE WHISPERS 2012: Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing*, Shanghai, China, 2012 .
8. Chao-Cheng Wu, Hsiao-Chi Li, and Jiannher Lin, "Automatic measurement of cross section area of spinal canal by using supervised classification algorithms, " *2012 American Association of Neurological Surgeons Scientific Meeting*.
9. Wei Xiong, Chao-Cheng Wu, Chein-I Chang, "Field programmable gate array design of implementing simplex growing algorithm for hyperspectral endmember extraction, " *SPIE Conference on Satellite Data Compression, Communications, and Processing VII*, August 23-27, San Diego, 2011.
10. Hsian-Min Chen, Shih-Yu Chen, Jyh Wen Chai, Chen, C.C.-C., Chao-Cheng Wu, Yen-Chieh Ouyang, Ching Tsorng Tsai, Ching-Wen Yang, San-Kan Lee, Chein-I Chang, "Techniques for Automatic Magnetic Resonance Image Classification, " *2010 Fourth International Conference on Genetic and Evolutionary Computing (ICGEC)*, December 13-15, Shenzhen, China, 2010.

(c)研發與產學合作計畫

1. 行政院農業委員會產學合作研究計畫，主持人，“103 年度行政院國家科學技術發展基金管理會補助計劃-高光譜技術應用於農藥殘留檢測，” 2014/05/01-2015/04/30.
2. 科技部專題研究計畫，主持人，“利用頻譜資訊來改進多層次型態學動態輪廓演算法用以偵測與描繪樹冠，”2014/08/01~2015/07/31.
3. 教育部學海築夢計劃，主持人，“歐姆龍醫療株式會社(OMRON)國際實習，” 2014/07/01~2015/09/30.
4. 臺北科技大學暨臺北醫學大學專題研究計畫，主持人，“開發小鼠影像之即時偵測系統，”2014/01/01~2014/12/31.
5. 科技部專題研究計畫，主持人，“運用可編程陣列與圖像處理器加速樹木偵測與輪廓描繪之演算法，”2013/08/01~2014/07/31.
6. 科技部專題研究計畫，共同主持人，“漸進式頻寬運算應用於高頻譜影像資料通信之研究，”2013/08/01~2014/07/31.
7. 農委會科技計畫產學合作研究計畫，共同主持人，“高解析度多光譜影像於森林資源調查之應用，”2013/01/01~2013/12/15.
8. 臺北科技大學暨臺北醫學大學專題研究計畫，主持人，“Investigation on quantitative gait analysis using a low-end smart phone，”2013/01/01~2013/12/31
9. 科技部專題研究計畫，主持人，“運用 FPGA 硬體實踐高頻譜影像之線性分解，” 2012/08/01~2013/07/31.
10. 科技部專題研究計畫，共同主持人，“改善多頻譜磁振造影像腦組織容積量測準確性與可重複性之研究，”2012/08/01~2013/07/31.
11. 海岸巡防署產學合作研究計畫，主持人，“友軍連線安全管控系統元件更新暨重新佈署作業，”2012/9/15~2012/11/15.
12. 臺北科技大學暨臺北醫學大學專題研究計畫，主持人，“Accuracy and reproducibility study of supervised methods for spinal canal classification with multispectral MR images,”2012/01/01~2012/12/31.
13. 科技部專題研究計畫，共同主持人，“新穎電腦輔助技術於腦部磁振造影像中多發性硬化症偵測之研究，”2011/08/01~2012/07/31.
14. 科技部專題研究計畫，共同主持人，“非監督式多頻譜腦部磁振造影像組織分類法之準確性與可重複性研究，”2010/11/01~2011/10/31.

15. 台北醫學大學附設醫院院內計畫，共同主持人，“A study on time-frequency analysis of gait in neurological disorders,” 2011/08/01~2012/07/30.

其他表現

(a)近五年內最具代表性之學理創新、應用技術突破

1. 開發腦脊髓液於磁振造影上自動切割與分類的技術。
2. 開發演算法將走路步態資訊量化協助醫師診療。
3. 利用動物臉部表情偵測痛覺。
4. 利用高光譜分析技術協助偵測蔬菜水果上的農藥殘留。
5. 將遙測技術中的樹木計算與輪廓圈選技術加以實用化。

(b)國內外之成就與榮譽

1. Outstanding Contribution Award, Fourth International Medical and Health Technology, 2014.
2. 臺北科技大學電資學院 102 年度教學優良獎, 2014。

黃正民　助理教授　*Cheng-Ming Huang*

研究室名稱：視覺感知與互動研究室　Visual Perception and Interaction Laboratory

聯絡電話：02-2771-2171 #2170

E-mail：cmhuang@ntut.edu.tw

網址：http://www.mail.ntut.edu.tw/vpilab/

研究聚焦領域：□H 健康科技■I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電腦視覺、影像追蹤、數位控制、視覺伺服、人機互動

近年重要論文及著述

(a)期刊論文

1. "A Systematic Spatiotemporal Modeling Framework for Characterizing Traffic Dynamics Using Hierarchical Gaussian Mixture Modeling and Entropy Analysis", IEEE Systems Journal, , 2013/4/1
2. "影像監控的自動控制", 科學發展, 68-73, 2014/3/1
3. "Visual Tracking of Human Head and Arms Using Adaptive Multiple Importance Sampling on a Single Camera in Cluttered Environments", IEEE Sensors Journal, 2267-2275, 2014/7/1

(b)研討會論文

1. "Real-Time Visual Tracking with Adaptive Particle Filter for Human-Machine Interaction", SICE Annual Conference 2011, 東京, 2011/9/13
2. "Online 3D tracking of human arms with a single camera", IEEE Int. Conf. Robotics and Automation, St. Paul, MN, 2012/5/14
3. "Detecting Drivable Space in Traffic Understanding (Best Paper Award)", International Conference on System Science and Engineering, Dalian, 2012/6/30
4. "Image Stitching on the Unmanned Air Vehicle in the Indoor Environment", SICE Annual Conference 2012, Akita, 2012/8/20
5. "Ghosting Elimination with A* Seam Optimization in Image Stitching", Third International Conference on Information Security and Intelligent Control, Yulin, 2012/8/14
6. "微型飛行器於室內走廊環境之視覺導航與控制", 2012 National Symposium on System Science and Engineering, Keelung, 2012/6/16
7. "Robust head and hands tracking with occlusion handling for human machine interaction", IEEE/RSJ International Conference on Intelligent Robots and Systems, Vilamoura, 2012/10/7

8. "Image and Seam Selections of Efficient Image Stitching with Visual Content Maximization", National Symposium on System Science and Engineering 2013, Ban-Chiao, New Taipei City, 2013/6/8
9. "3D Hand Posture Tracking with Depth Gradient Estimation on a RGB-D Camera", 17th IEEE International Symposium on Consumer Electronics (ISCE 2013), Hsinchu, 2013/6/3
10. "Fuzzy based Visual Servoing of MAV through Staircase", SICE Annual Conference 2013, Nagoya, 2013/9/14
11. "Adaptive Visual Servoing of Micro Aerial Vehicle with Switched System Model for Obstacle Avoidance", IEEE International Conference on Systems, Man, and Cybernetics, Manchester, 2013/10/13
12. "Hands Tracking with Self-occlusion Handling in Cluttered Environment", 2013 Asian Control Conference, Istanbul, 2013/6/23
13. "Target Motion Compensation with Optical Flow Clustering during Visual Tracking", 2014 IEEE 11th International Conference on Networking, Sensing and Control (ICNSC), Miami, Florida, 2014/4/7
14. "Fish-eye Cameras Calibration for Vehicle Around View Monitoring System", IEEE International Conference on Consumer Electronics - Taiwan (IEEE 2014 ICCE-TW), Taipei, 2014/5/26
15. "基於彩色深度攝影機之路面及障礙物偵測", National Symposium on System Science and Engineering NSSSE 2014, 金門, 2014/6/21
16. "Robot Around View Monitoring System with Fish-Eye Cameras Calibration", CME International Conference on Complex Medical Engineering (CME 2014), Taipei, 2014/6/26

(c)研發與產學合作計畫

1. 2012 年，IEEE International Conference on System Science and Engineering，最佳論文獎。
2. 2013 年，智慧型運輸系統協會「智慧運輸論文獎」。
4. 2013 年，國際研討會 SICE Annual Conference 2013 「International Scholarship」。
5. 2012 年，國科會控制學門計畫成果發表會「最佳海報獎」。
6. 2013 年， National Symposium on System Science and Engineering 研討會「學生論文競賽第一名」。
7. 2013 年，中華民國自動控制學會「碩士論文競賽佳作」。
8. 2014 年，第 19 屆全國大專校院資訊應用服務創新競賽「NFC 創新應用開發組第一名」暨「資訊技術應用七組佳作」

9. 2012 年，優聯科技股份有限公司，產學合作，新舊版 10 元硬幣圖像動態辨識與篩選方法，快速即時之硬幣辨識與篩選機構之設計控制。
10. 2013 年，中山科學研究院，車輛全周影像系統，提供車輛周遭全景鳥瞰影像以利行車安全。
11. 2014 年，科技部，時間延遲系統：從穩定理論到遠端控制應用－子計畫四：遠端控制之視覺系統：微型飛行器之對位應用(III)
12. 2013 年，科技部，下世代多功能智慧型安養照護系統－下世代多功能智慧型安養照護系統
13. 2013 年，科技部，時間延遲系統：從穩定理論到遠端控制應用，－子計畫四：遠端控制之視覺系統：微型飛行器之即時對位應用
14. 2012 年，科技部，下世代多功能智慧型安養照護系統(I)
15. 2012 年，科技部，時間延遲系統：從穩定理論到遠端控制應用－子計畫四：時間延遲系統之影像追蹤：於微型飛行器之應用
16. 2011 年，科技部，微型飛行器避障與追蹤之視覺感知暨控制設計

劉邦榮　助理教授　*Pang-Jung Liu*

研究室名稱：電源管理研究室　Power Management Laboratory

聯絡電話：02-2771-2171 #2127

E-mail：pjliu@ntut.edu.tw

網址：http://ar.ntut.edu.tw/lab/index.aspx?lab=1314

研究聚焦領域：□H 健康科技□ I 智慧整合科技■ G 綠色科技□ H 人文與創新元素

專長領域：電源管理 IC、電力電子、FPGA 系統應用

近年重要論文及著述

(a)期刊論文

1. "A high-efficiency CMOS DC-DC converter with 9-us transient recovery time", IEEE Trans. Circuits Syst. I: Regular Papers, 575-583, 2012/3/1
2. "Design of spur reduction for CMOS DC-DC converters using PWM control with variable switching frequency", IEEE Transactions on Power Electronics, 4763-4771, 2012/11/1
3. "A 10-bit CMOS DAC With Current Interpolated Gamma Correction for LCD Source Drivers", IEEE Trans. on Circuits and Systems for Video Technology, 958-965, 2012/6/1
4. "A new digital control method for a voltage source inverter to compensate for imbalance of output voltage", International Journal of Circuit Theory Application, 879-888, 2013/8/1
5. "具突衝模式操作之高效率同步式降壓型穩壓器", 電機能源論壇, 49-55, 2013/3/1
6. "內建超高壓功率電晶體之升壓型轉換器控制晶片", 電機能源論壇, 40-45, 2013/11/1
7. "A low-power buffer with voltage booting and adjustable frequency compensation for LCD source drivers", IET Circuits Devices Syst., 263–271, 2014/4/1
8. "Area- and power-efficient DC–DC converter with on-chip compensation", Electronic Letters, 1157-1158, 2014/7/1
9. "An active-clamping forward converter with non-linear step-down conversion", IET Power Electronics, 112-119, 2015/1/1
10. "Techniques of dual-path error amplifier and capacitor multiplier for on-chip compensation and soft-start function", IEEE Trans. on Power Electronics, 1403-1410, 2015/3/1

(b)研討會論文

1. "Design and Implementation of a Master – Slave Quasi-Resonant Flyback Converter", the International conference on QIR (Quality in Research), 巴里島, 2011/7/4

2. "Design and Implementation of a Photovoltaic High – Intensity - Discharge Street Lighting System", the International conference on QIR (Quality in Research), 巴里島, 2011/7/4
3. "具暫態響應改善之 CMOS 直流-直流轉換器", 電力電子研討會, 台北, 2011/12/2
4. "使用 CDTA 與 OTRA 之積體電路實現振盪器與濾波器之應用", 電力電子研討會, 台北, 2011/12/2
5. "採用電容倍增技術減低補償電容之直流電壓轉換器", 電力電子研討會, 台北, 2011/12/2
6. "升壓型功率因數修正變頻控制晶片", 電力電子研討會, 台北, 2011/12/2
7. "小面積加速轉導放大器之電流模式直流直流降壓型轉換器", 第十一屆電力電子研討會, 新竹, 2012/9/11
8. "脈波省略緩　動電路之電流模式降壓轉換器", 第三十三屆電力工程研討會, 台北, 2012/12/7
9. "升壓型功率因數修正器之類比乘法器研製", 第三十三屆電力工程研討會, 台北, 2012/12/7
10. "Design of A Simple Transient-Response Enhancement Circuit for CMOS DC-DC Converters", Taiwan-Japan Symposium on Power Converter, 台北, 2012/11/22
11. "A Current-Mode Buck Converter with a Pulse-Skipping Soft-Start Circuit", IEEE Power Electronics and Drive Systems, 北九州, 2013/4/22
12. "具三角波控制之低切換突波及低諧波量降壓型轉換器", 電力電子研討會, 台南, 2013/11/2
13. "小面積加速轉導放大器之電流模式直流直流降壓型轉換器", 電力電子研討會, 台南, 2013/11/2
14. "具雙路徑頻率補償技術與緩啟動功能之積體化降壓型轉換器", 電力電子研討會, 台南, 2013/11/2
15. "A Fast-Transient Buffer with Voltage Booting Technique for LCD Column Drivers", International Conference on Information Science, Electronics and Electrical Engineering, 札幌市, 2014/4/26
16. "A Simple Strategy for Compensating Voltage Source Inverters", International Conference on Information Science, Electronics and Electrical Engineering, 札幌市, 2014/4/26
17. "具適應性電壓調控之電阻式平衡超級電容充電器", 第十三屆電力電子研討會, 台北市, 2014/9/4

18. "具適應性電壓回授控制之脈衝電流式 LED 驅動器", 第十三屆電力電子研討會, 台北市, 2014/9/4

(c)研發與產學合作計畫

1. 具電荷回流之脈衝電流 LED 驅動器, 104/8-105/7
2. 高效率發光二極體驅動電路設計, 103/8-104/7
3. 具遲滯電壓預測控制法之快速暫態響應 CMOS 直流/直流轉換器設計, 102/8-103/7
4. CMOS 升壓型轉換器研製研究計畫, 102/8-102/12
5. 具電感電流平均控制法、雙模控制法與雙路徑電容補償技術之電源管理晶片設計, 101/8-102/7

(d)其他表現

1. 科技部電力學門新進人員研究成果優選, 103/11/01

柯明仁　講師　*Ming-Jan Ko*

研究室名稱：

聯絡電話：02-2771-2171 #2150

E-mail：mjko@ntut.edu.tw

研究聚焦領域：□H健康科技■I智慧整合科技□ G綠色科技□ H人文與創新元素

專長領域：儀表工程、自動量測

近年重要論文及著述

(a)研討會論文

1. "Train Power Converter Switching Surge Impact Studies", ASME 2012 Joint Rail Conference, Philadelphia, Pennsylvania, 2012/4/17
2. "基於尺度不變特徵點引導修補方向之視訊修補演算法", 2012 全國電信研討會, 彰化, 2012/11/16
3. "單視角視訊深度估測演算法", 2012 全國電信研討會, 彰化, 2012/11/16
4. "Quantitative measurement of pantograph loss of contact dynamics", JRC2013, Knoxville, Tennessee, 2013/4/15
5. "Load power quality characteristics of trains with switch-type converters and the impact to AC electrified traction power systems", 2014 Joint Rail Conference, Colorado Springs, 2014/4/2

(b)研發與產學合作計畫

1. 無感測向量控制方法分析研究, 101/5-101/12

張朝陽　講師　*Chaur-Yang Chang*

研究室名稱：

聯絡電話：02-2771-2171 #2111

E-mail：cychang@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~cychang/

研究聚焦領域：□H 健康科技■ I 智慧整合科技□ G 綠色科技□ H 人文與創新元素

專長領域：電力系統、負載管理

近年重要論文及著述

(a)期刊論文

1. "Development of a Self-tuning TSK-fuzzy Speed Control Strategy for Switched Reluctance Motor", IEEE Trans. on Power Electronics, 2141 - 2152, 2012/4/1
2. "Neural-network-estimator-based Twin Sliding Mode Controller Design for Vector Controlled Induction Motor Drives", Advances in information Sciences and Service Sciences, 53-62, 2013/10/1
3. "Estimator-based fuzzy credit-assigned cerebellar model articulation controller design for vector-controlled induction motor drives", Journal of the Chinese Institute of Engineers, 332–345, 2014/4/1

(b)研討會論文

1. "Adaptive Proportional-Integral Speed Controller for Direct Torque Control of Induction Motor Using", 2010 International Symposium on Computer, Communication, Control and Automation, Tainan, 2010/5/5
2. "Neural-Network-Estimator-Based Twin Sliding Mode Controller Design for Vector Controlled Induction Motor Drives", 2012 International Symposium on Computer, Communication, Control and Automation, 台中, 2012/6/4

陳文學　講師　*Wen-Shyue Chen*

研究室名稱：電力電子應用與模擬研究室

聯絡電話：02-2771-2171 #2138

E-mail：wschen@ntut.edu.tw

網址：http://cws.ee.ntut.edu.tw/wschen/

研究聚焦領域：□H 健康科技□ I 智慧整合科技■ G 綠色科技□ H 人文與創新元素

專長領域：電力電子應用

近年重要論文及著述

(a)期刊論文

1. "電力電子技術於再生能源電能轉換的應用", 電機能源論壇, 2012/7/1
2. "New Hybrid Control Technique to Improve Light Load Efficiency While Meeting the Hold-up Time Requirement for Two-Stage Server Power", IEEE Trans. on Power Electronics, 4763-4775, 2014/9/1(SCI)

(b)研討會論文

1. "磁性元件在電力轉換應用之模組化實作課程設計", 2011 第十屆台灣電力電子研討會暨展覽會, 中壢市, 2011/9/2
2. "New Hybrid Control Technique to Improve Light Load Efficiency while Meeting the Hold-up Time Requirement for Two-Stage Server Power", 2013 IEEE Energy Conversion Congress and Exposition, Denver, Colorado, 2013/9/15
3. "Design of Laboratory Course for Learning Power Converters at Taipei Tech", ISIE 2014 The 23th IEEE International Symposium on Industrial Electronics, Istanbul, 2014/6/1
4. "Multi-Source Converter for Energy Harvest in an Internal Combustion Engine Vehicle and Its Power Distribution Control", ISIE 2014 The 23th IEEE International Symposium on Industrial Electronics, Istanbul, 2014/6/1
5. "廣域式 LED 調光電路之設計與研製", 2014 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4
6. "多輸入源之一體式降壓型多輸入轉換器", 2014 第十三屆台灣電力電子研討會暨展覽會, 台北, 2014/9/4

其他表現：

(a)國內外之成就與榮譽

1. 2015-03-26 榮獲國立臺北科技大學“辦理 102 學年度工程及科技教育認證業務，認真負責，成效卓著”獎狀。

2. 2014-12-19 榮獲國立臺北科技大學電機工程系“廣域式 LED 調光電路之研製 (專題製作競賽佳作)” 獎狀。
3. 2014-09-04 榮獲中華民國電力電子協會“第 13 屆台灣電力電子研討會優秀論文獎-多輸入源之一體式降壓型多輸入轉換器”獎狀。
4. 2013-06-21 榮獲國立臺北科技大學 “101 學年度傑出教學獎”獎牌。
5. 2013-06-17 榮獲國立台北科技大學電資學院“101 年度傑出教學獎”獎座。
6. 2012-09-28 榮獲臺北市政府“101 年度臺北市志願服務貢獻獎(府社工字第 10143404200 號) ”獎狀。
7. 2011-12-30 榮獲國立臺北科技大學電機系“無線感測調光型 LED 照明的整合電路製作(專題製作競賽優勝) ”獎狀。
8. 2010-12-30 榮獲國立臺北科技大學電機系“LED 並聯應用-- (專題製作競賽優等) ”獎狀。

9.2 電子工程系

余政杰 教授 (Cheng-Chieh Yu, *Prof., Ph.D.*)

學院：電資學院
系所：電子工程系
組別：電波組
實驗室名稱：數位無線實驗室
聯絡電話：(O) (02) 2771-2171 Ext. 2260
E-Mail：ccyu@ntut.edu.tw
網址：http://www.ntut.edu.tw/~ccyu

研究聚焦領域：☐ H：健康科技　　☑ I：智慧整合科技
　　☐ G：綠色科技　　☐ H：人文與創新元素

專長：

01. 天線	02. 射頻主被動電路	03. 數位無線發射機/接收機/收發機	04. 射頻辨識/無線感測
05. 電波傳播	06. 韌體編解碼	07. 韌體錯誤控制碼	08. 韌體加解密
09. 慢跳頻展頻	10. 數位訊號處理	11. 通訊協定	12. Institutional Research (IR)

1.近年重要論文及著述

(a) 期刊論文

(1) "A New Inverter-Based Charge Pump Circuit with High Conversion Ratio and High Power Efficiency," *Microelectronics Journal*, Vol. 42, No. 8, pp. 982-987, June 2011, http://www.elsevier.com/locate/mejo/.

(2) "A Multiband CPW-Fed Monopole Antenna for DCS-1800, 3.5 GHz WiMAX, and 2.4/5.2/5.8 GHz WLAN Applications," *International Journal of Electrical Engineering*, Vol. 17, No. 4, pp. 275-280 9, Sept. 2011, http://www.ciee.org.tw/publication.asp/.

(3) "A Dual-Band CPW-Fed Monopole Antenna for 2.4/5.2 GHz WLAN Application," *International Journal of Electrical Engineering*, Vol. 17, No. 5, pp. 361-365 11, Nov. 2011, http://www.ciee.org.tw/publication.asp/.

(4) "A New Fast-Response Buck Converter Using Accelerated Pulse-Width-Modulation Techniques," *Journal of Circuit Theory and Applications*, Online , Nov. 2011, http://onlinelibrary.wiley.com/doi/10.1002/cta.823/abstract/.

(5) "Implementation of THD-Reduction Stereo Audio Amplifier Using Compensators and Sigma-Delta Modulators," *Analog Integrated Circuits and Signal Processing*, Online, Dec. 2011, http://www.springerlink.com/content/eu80731403010gu4/

(6) "Fast-Response Single-Inductor Dual-Output Hysteresis-Current-Controlled DC – DC Buck Converter," *Analog Integrated Circuits and Signal Processing*, Vol. 70, No. 3, pp. 405-415, Mar. 2012, http://www.springerlink.com/content/r832248362753553/.

(7) "A Low-Voltage Positive Buck-Boost Converter Using Average-Current-Controlled Techniques," *International Symposium on Circuits and Systems* (ISCAS), May 2012.

(8) "A Low-Voltage Low-Noise DC-DC Flyback Converter with Delta-Sigma Modulation," *International Symposium on Circuits and Systems* (ISCAS), Seoul, Korea, May 2012.

(9) "A High-Efficient WLED Driver Using Light-Balanced-Controlled Techniques with Current-Locked Loops," *Analog Integrated Circuits and Signal Processing*, Vol. 72, No. 2, pp. 363-373, Aug. 2012.
(10) "Implementation of THD-Reduction Stereo Audio Amplifier Using Compensators and Sigma-Delta Modulators," *Analog Integrated Circuits and Signal Processing*, Vol. 73, No. 1, pp. 243-253, Oct. 2012.
(11) "A new fast-response buck converter using accelerated pulse-width-modulation techniques," *International Journal of Circuit Theory and Applications*, Vol. 41, No. 8, pp. 854-865, Aug. 2013.
(12) "A 13.56-MHz Low-Voltage and Low-Control-Loss RF-DC Rectifier Utilizing a Reducing Reverse Loss Technique," *IEEE Transactions on Power Electronics*, Vol. 29, No. 12, pp. 6544-6554, Dec. 2014. (SCI, EI)
(13) "A Continuous Conduction Mode Low-Ripple High-Efficiency Charge-Pump Boost Converter," *Analog Integrated Circuits and Signal Processing*, Vol. 79, No. 2, pp. 355-369, May 2014. (SCI, EI)
(14) "A DC-DC Buck Converter with Load-Regulation Improvement Using Dual-Path-Feedback Techniques," *Analog Integrated Circuits and Signal Processing*, Vol. 79, No. 1, pp. 149-159, Apr. 2014. (SCI, EI)
(15) "培育實務研究人才，高教技職簡訊," 第 81 期, Sept. 2013.
(16) "運用智慧型手機全球定位系統設計安全帽抬頭速度顯示裝置," *Internat*ional Journal of Science and Engineering / 理工研究國際期刊, Vol. 4, No. 1, Mar. 2014.
(17) "運用 Wi-Fi 技術實現遠端通訊," *International Journal of Science and Engineering / 理工研究國際期刊*, Vol. 4, No. 1, Mar. 2014.

(b) 研討會論文

(1) "A Simple Dual-Band Microstrip-Fed Printed Monopole Antenna for WLAN Applications," *National Symposium on Telecommunications*, 2010, Taoyuan, Taiwan, Jan. 01-02, 2011.
(2) "A CPW-Fed Dual-Band Monopole Antenna for WiMAX Applications," *National Symposium on Telecommunications*, 2010, Taoyuan, Taiwan, Jan. 01-02, 2011.
(3) "A Triple-Band CPW-Fed Monopole Antenna with Two Rectangular Notch Areas on Ground Plane for WLAN/WiWAX Applications," *National Symposium on Telecommunications*, 2010, Taoyuan, Taiwan, Jan. 01-02, 2011.
(4) "Microstrip-Fed Monopole Antenna Design for WiMAX and WiFi Communication Systems," *National Symposium on Telecommunications*, 2010, Taoyuan, Taiwan, Jan. 01-02, 2011.
(5) "A Low-Voltage HCC DC-DC Flyback Converter With Active Current-Sensing And Synchronous-Rectification Techniques," *The 22th VLSI Design/CAD Symposium*, Yunlin, Taiwan, Aug. 2-5, 2011.
(6) "A Low-Voltage High-Efficiency Flyback Converter Using Average-Current-Controlled Techniques Without Slope-Compensation," *The 22th VLSI Design/CAD Symposium*, Yunlin, Taiwan, Aug. 2-5, 2011.
(7) "A Dual-Band Microstrip-Fed Printed Monopole Antenna with a Band-Notched Strip for WLAN Applications," *National Symposium on Telecommunications*, 2011, Hualien, Taiwan, Nov. 18-19, 2011.
(8) "A Novel Planar Monopole Antenna Design," *National Symposium on Telecommunications*, 2011, Hualien, Taiwan, Nov. 18-19, 2011.
(9) "The Dual Band Monopole Compact Antenna of Hippocam shape for 2.4/5.2 GHz WLAN Applications," *National Symposium on Telecommunications*, Chang-Hua, Taiwan, Nov. 16-17, 2012.
(10) "A Compact Dual-Band Microstrip-Fed Printed Monopole Antenna Design for WiMAX

and WiFi Communication Systems," N*ational Symposium on Telecommunications*, Chang-Hua, Taiwan, Nov. 16-17, 2012.

(11) "An Ultra-Low Input Flyback Converter with Wide Conversion Ratio Utilizing Zero-current Switching Techniques," 2013 *International Conference on Power Electronics and Drive Systems* (*PEDS 2013*), Kitakyushu, Japan, Apri. 22-25. 2013.

(12) "An Omnipotent Li-Ion Battery Charger With Multimode Controlled Techniques," *International Conference on Power Electronics and Drive Systems* (*PEDS 2013*), Kitakyushu, Japan, Apri. 22-25. 2013.

(13) "A Fast-Transient-Response Buck Converter with Split-Type III Compensation and Charge-Pump Circuit Technique, "*IEEE International Power Electronics Conference (IPEC)*, Hiroshima, Japan, May 18-21, 2014. (EI)

(14) "A Low-Noise High-Efficient Buck Converter with Noise-Shaping Technique, " *2015 International Symposium on VLSI Design, Automation and Test (VLSI-DAT)*, Hsinchu City, Taiwan, Apr. 27-29, 2015.

(15) "A Simple Fast-Transient-Response Buck Converter Using Adaptive-Hysteresis-Controlled Techniques," *IEEE EDSSC 2015*, pp. 45-48, Singapore, June 1-4, 2015. (EI)

(16) "TDMA Noise Source Analysis and Reduction for Handheld Device Application, *2013 全國電磁相容技術與實務研討會*, Chang-Hua, Taiwan, June 27-28, 2013.

(17) "運用 Wi-Fi 技術實現遠端通訊," 2013 年全國電信研討會, Tainan, Taiwan, Nov. 15-16, 2013.

(18) "運用智慧型手機全球定位系統設計安全帽抬頭速度顯示裝置," 2013 年全國電信研討會, Tainan, Taiwan, Nov. 15-16, 2013.

(19) "無線人物追蹤與障礙偵測系統之研發," 2014 年全國電信研討會, Taichung, Taiwan, Nov. 27-28, 2014.

(20) "運用無線閘道器實現感測網路," 2014 年全國電信研討會, Taichung, Taiwan, Nov. 27-28, 2014.

(21) "無線影像傳輸之輪廓偵測技術的開發," 2014 年全國電信研討會, Taichung, Taiwan, Nov. 27-28, 2014.

(22) "2.4 GHz 無線影像監測系統之實現," 2014 年全國電信研討會, Taichung, Taiwan, Nov. 27-28, 2014.

(23) "運用區間偵測演算法實現無線心電圖身分辨識系統," 2014 年全國電信研討會, Taichung, Taiwan, Nov. 27-28, 2014.

(24) "運用相關係數演算法實現無線心電圖身份辨識系統," 2014 年全國電信研討會, Taichung, Taiwan, Nov. 27-28, 2014.

(c) 專利

(d) 技術移轉

(e) 專書及專章

(1) "高等教育機構品質保證制度與實踐 - 國際觀與本土觀：臺北科技大學品質保證制度與實踐," 臺北市：高等教育評鑑中心，蘇錦麗主編, 總計 16 章，第 13 章，2014.03.24。

(f) 作品

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

(1) 國科會專題研究計畫補助：NSC 96-2628-E-027-001-MY3，「應用於無線通訊與雷達系統之超寬頻短電磁脈衝射頻被動組件之設計與實現」， $81 萬 3 千元整，2009.08.01-2010.07.31，計畫共同(協同)主持人。

(2) 國科會專題研究計畫補助：NSC 99-2511-S-027-002-MY3，「技職校院資電類系科創業教育課程設計與實驗教學之研究」， $167 萬 5 千元整，2010.08.01-2013.07.31，計畫共同(協同)主持人。

(3) 國科會專題研究計畫補助：NSC102-2221-E-027-106，「適用於無線感測器網路之低雜訊能量採集電源轉換積體電路之研製」，$83 萬 9 千元整，2013.08.01-2014.08.01，計畫共同(協同)主持人。

(4) 國科會專題研究計畫補助：103-2221-E-027-124-MY3，「適用於下世代智慧型可攜式裝置處理器之可擴充式電源管理晶片模組」，$82 萬 7 千元整，2014.08.01-2015.08.01，計畫共同(協同)主持人。

(5) 國科會專題研究計畫補助：103-2221-E-027-124-MY3，「適用於下世代智慧型可攜式裝置處理器之可擴充式電源管理晶片模組」，$82 萬 7 千元整，2015.08.01-2016.08.01，計畫共同(協同)主持人。

(6) 國科會專題研究計畫補助：103-2221-E-027-124-MY3，「適用於下世代智慧型可攜式裝置處理器之可擴充式電源管理晶片模組」，$81 萬 6 千元整，2016.08.01-2017.08.01，計畫共同(協同)主持人。

(7) 教育部 99-100 年度補助「獎勵科技大學及技術學院設立區域教學資源中心計畫－北區教學資源中心，中心學校：國立臺北科技大學，台教技(四)字第 0990006501A 號，$2 億 2 千 9 百 4 拾萬元，2011.07.01-2012.12.31，計畫執行教務主管。

(8) 教育部 100-101 年度補助「獎勵科技大學及技術學院設立區域教學資源中心計畫－北區教學資源中心，中心學校：國立臺北科技大學，臺教技(四)字第 1000119370A 號，$3 億 1 千 8 百 5 拾萬元，2011.07.01-2012.12.31，計畫執行教務主管。

(9) 教育部 102 年度補助「獎勵科技大學及技術學院設立區域教學資源中心計畫 － 北區教學資源中心，中心學校：國立臺北科技大學，臺教技(四)字第 1020067152A 號，$2 億 2 千 5 百 5 拾萬元，2013.01.01-2013.12.31，計畫執行教務主管。

(10) 教育部 103 年度補助「獎勵科技大學及技術學院設立區域教學資源中心計畫 －北區教學資源中心，中心學校：國立臺北科技大學，臺教技(二)字第 1040027081 號，$2 億 2 千 60 萬元，2014.01.01-2014.12.31，計畫執行教務主管。

(11) 教育部 104 年度補助「獎勵科技大學及技術學院設立區域教學資源中心計畫 － 北區教學資源中心，中心學校：國立臺北科技大學，臺教技(四)字第 1040063379 號，$2 億 5 千 7 百 30 萬元，2015.01.01-2015.12.31，計畫執行教務主管。

(12) 教育部 102 年度補助「北區教學資源中心全英語教學園區計畫」，臺技(四)字第 1010214959A 號，2012.11.01-2013.02.28，展延，2013.03.09-2013.05.22，計畫執行教務主管。

(13) 教育部北區教學資源中心 102 年度補助「技優再造－培育創新創業計畫」，$150 萬元整，2013.01.01-2013.12.31，計畫主持人。

(14) 教育部北區教學資源中心 103 年度補助「技優再造－培育創新創業計畫」，$150 萬元整，2014.01.01-2014.12.31，計畫主持人。

(15) 教育部北區教學資源中心 104 年度補助「技優再造－培育創新創業計畫」，$150 萬元整，2015.01.01-2015.12.31，計畫主持人。

(16) 教育部 100-101 年度補助「獎勵科技大學及技術學院教學卓越計畫」，臺教技(四)字第號，$1 億 4 千萬元，2010.01.01-2012.12.31，計畫執行教務主管。

(17) 教育部 102 年度補助「獎勵科技大學及技術學院教學卓越計畫」，臺教技(四)字第 1020015137A 號，$7 千萬元，2013.01.01-2013.12.31，計畫執行教務主管。

(18) 教育部 103 年度補助「獎勵科技大學及技術學院教學卓越計畫」，臺教技(四)字第 1030019574 號，$7 千萬元，2014.01.01-2014.12.31，計畫執行教務主管。

(19) 教育部 104 年度補助「獎勵科技大學及技術學院教學卓越計畫」，臺教技(四)字第 1040014043 號，$7 千萬元，2015.01.01-2015.12.31，計畫執行教務主管。

(20) 教育部 99 學年度補助「技專校院遴聘業界專家協同教學計畫審查及管考作業計畫」，台技(三)字第 0990034815 號，2010.02.09-2011.02.08，$105 萬元整，計畫執行教務

主管。

(21) 教育部 100 學年度委託「技專校院遴聘業界專家協同教學計畫審查及管考作業計畫」，臺技(三)字第 1000072012 號，2011.03.21-2012.03.20，$104 萬 9 千 341 元整，計畫執行教務主管。

(22) 教育部 99 學年度委託「技專校院遴聘業界專家協同教學計畫」，台技(三)字第 09904e09564 號，$196 萬 5 千 6 百元整，2010.07.01-2011.06.30，計畫執行教務主管。

(23) 教育部 100 學年度補助「技專校院遴聘業界專家協同教學計畫」，臺技(三)字第 1000091919I 號，$168 萬 4 千 8 百元整，2011.07.01-2012.06.30，計畫執行教務主管。

(24) 教育部 101 學年度補助「技專校院遴聘業界專家協同教學計畫」，臺技(三)字第 1010094888J 號，$154 萬 1 千 2 百元整，2012.07.01-2013.06.30，計畫執行教務主管。

(25) 教育部 102 學年度補助「技專校院遴聘業界專家協同教學計畫」，臺技(三)字第 1020085458I 號，$149 萬 5 千 6 百元整，2013.07.01-2014.06.30，計畫執行教務主管。

(26) 教育部 103 學年度補助「技專校院遴聘業界專家協同教學計畫」，臺技(三)字第 1030090577I 號，$273 萬 8 千 8 百元整，2014.06.01-2015.06.30，計畫執行教務主管。

(27) 教育部 103 年度補助「磨課師(MOOCS)課程推動計畫 －2 門課：1. 微積分 2. 化學」，臺教資(二)字第 1030071318 號，$160 萬元整，2014.05.09-2015.04.30，執行教務主管。

(28) 教育部 104 年度補助「磨課師(MOOCS)課程推動計畫 －2 門課：1. 數位系統基礎與電路化簡技術 2. 傾聽臺灣 － 文化與古蹟」，臺教資(二)字第 1040065522B 號，$140 萬元整，2015.05.01-2016.04.30，執行教務主管。

(29) 教育部 103 年度補助「技專校院辦理(技職再造策略六)師生實務增能計畫」，臺教技(三)字第 1030083858I 號，$90 萬元整，2014.06.01-2015.05.31，計畫執行教務主管。

(30) 教育部 101 學年度補助「技專校院建立策略聯盟計畫 - 基北宜區，主辦學校：國立臺北科技大學」，臺技(一)字第號 1010142019A 號，$7,512,369.-元整，2012.08.01-2013.07.31，計畫執行教務主管。

(31) 教育部 102 學年度補助「技專校院建立策略聯盟計畫 - 基北宜區，主辦學校：國立臺北科技大學」，臺教技(一)字第號 1020125518 號，$13,910,000.-元整，2013.08.01-2014.08.31，計畫執行教務主管。

(32) 教育部 103 學年度補助「技專校院建立策略聯盟計畫 - 基北宜區，主辦學校：國立臺北科技大學」，臺教技(一)字第號 1030121987 號，$6,610,000.-元整，2014.09.01-2015.08.31，計畫執行教務主管。

(33) 教育部 97 年度補助「提升技職校院學生通識教育及語文應用能力改善計畫 - 電機與電子群職涯分析」 ,$180 萬元整，2009.01.01- 2009.12.31，計畫主持人。

(34) 青輔會 100 年度補助「提升青年就業力各項工作計畫 -e-PS Go！ 學習生涯全記錄」，$32 萬 2 千元整，2011.04.11-2012.11.25，計畫主持人。

(35) 青輔會 100 年度補助「提升青年就業力各項工作計畫 - 職場新秀養成計畫」，$1 萬 4 千元整，2011.04.11-2012.11.25，計畫主持人。

(36) 青輔會補助「青年國際志工服務隊海外僑校服務－馬來西亞－麻六甲培風中學」，青肆字第 1012460996 號，2012.07-2012.08，$ 2 萬元整，計畫主持人。

(37) 教育部青年發展署補助「青年國際志工服務隊海外僑校服務－馬來西亞－麻六甲培風中學」，臺教青署學字第 10223604161 號，2013.07.02-2013.08.16，$ 2 萬元整，計畫主持人。

(38) 教育部青年發展署補助「青年國際志工服務隊海外僑校服務－馬來西亞－科技與人文跨域文創海外服務計畫」，臺教青署學字第 1032360520 號，2014.07.07-2014.08.15，$ 5 萬元整，計畫主持人。

(39) 教育部青年發展署補助「103 海外僑校志工團－馬來西亞－新山寬柔中學」，臺教青署學字第 1032360528 號 2014.07.07～2014.08.15，$3 萬元整，計畫主持人。
(40) 財團法人海華文教基金會補助「2015 馬來西亞國際志工團－霹靂週務邊鎮」，(104)海華董字第 01040102 號，$3 萬元整，2015.07.01～2015.07.29，計畫主持人。
(41) 台鹽實業股份有限公司委託：臺鹽企字第 10070001490號，「全國大專臺鹽盃創意行銷競賽活動」，$51 萬，2011.11.01-2012.05.31，計畫共同(協同)主持人。

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)
(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(1) Digital RF Transmitter: 426.0750 MHz, 0 dBm, 12.5 kHz RF emission channel bandwidth, GFSK Chipcon RFIC-based Japan ARIB STD-T67-compliant transmitter with external helical antenna (USA).
(2) Transmitter: 433.92 MHz, OOK SAWR-stabilized one-transistor oscillating transmitter embedded with PCB loop antenna (USA).
(3) Transmitter: 433.92 MHz, +10 dBm, OOK SAWR-stabilized two-transistor oscillating transmitter embedded with external helical antenna (Taiwan).
(4) Transmitter: 433.92 MHz, +10 dBm, OOK Maxim-IC RFIC-based transmitter with PCB loop antenna (USA).
(5) Transmitter: 433.92 MHz, +13 dBm, OOK Maxim-IC RFIC-based transmitter with PCB loop antenna (USA).
(6) Transmitter: 433.92 MHz, +10 dBm, ±20 kHz FSK Infineon RFIC-based transmitter with external helical / quasi-dipole antennas (USA).
(7) Transmitter: 433.92 MHz, +10 dBm, ±20 kHz FSK Melexis RFIC-based transmitter with external helical antenna (USA).
(8) Transmitter: 915 MHz, +20 dBm, minimum 500 kHz RF emission bandwidth Maxim-IC RFIC-based long-range transmitter with external helical antenna (USA).
(9) Transmitter: 915 MHz, +20 dBm, minimum 500 kHz RF emission bandwidth Micrel RFIC-based long-range receiver with external one-transistor PA and helical antenna (USA).
(10) Transmitter: 433.92 MHz, 0 dBm, OOK Infineon RFIC-Based transmitter with helical antenna (USA).
(11) Digital RF Receiver: 426.0750 MHz, 12.5 kHz RF emission channel bandwidth, GFSK, Low-IF Chipcon RFIC-based Japan ARIB STD-T67-compliant receiver with external one-transistor LNA and quasi-dipole antenna (USA).
(12) Receiver: 433.92 MHz, OOK Infineon RFIC-based receiver with external quasi-dipole antenna (USA).
(13) Receiver: 433.92 MHz, OOK Philips RFIC-based receiver with external two-transistor cascode LNA and helical antenna (USA).
(14) Receiver: 433.92 MHz, OOK, Low-IF Micrel RFIC-based receiver with external monopole antenna (USA).
(15) Receiver: 433.92 MHz, OOK Miteq or Zarlink RFIC-based receiver with external monopole antenna (Taiwan).
(16) Receiver: 433.92 MHz, OOK Himark RFIC-based receiver with external monopole antenna (Taiwan).
(17) Receiver: 433.92 MHz, ±20 kHz FSK Melexis2 RFIC-based receiver with external quasi-dipole antenna (USA).
(18) Receiver: 915 MHz, minimum 500 kHz IF bandwidth Infineon RFIC-based long-range receiver with external quasi-dipole antenna (USA).

(19) Digital RF Transceiver: 429.1750 MHz, +10 dBm, 12.5 kHz RF emission channel Bandwidth, GFSK Chipcon RFIC-based Japan ARIB STD-T67-compliant long-range transceiver with external one-transistor LNA and helical / quasi-dipole antennas (USA).
(20) Transceiver: 433.92 MHz, +10 dBm, OOK (SAWR-stabilized two-transistor oscillating TX + Philips RX RFIC)-Based with external two-transistor cascade LNA and helical / monopole antennas (Taiwan).
(21) Transceiver: 433.92 MHz, +10 dBm, OOK (SAWR-stabilized two-transistor oscillating transmitter + Infineon RX RFIC receiver)-based transceiver with external helical / quasi-dipole antennas (USA).
(22) Transceiver: 433.92 MHz, +10 dBm, OOK MAXIM-IC transceiver (USA).
(23) Transceiver: 433.92 MHz, +10 dBm, ±20 kHz FSK (Infineon TX RFIC + Melexis RX RFIC)-based transceiver with external helical / quasi-dipole antennas (USA).
(24) Transceiver: 909 ~ 919 MHz, +20 dBm, minimum 250 kHz RF channel bandwidth, FSK, Zero-IF Micrel RFIC-based long-range frequency-hopped spread spectrum transceiver with external one-transistor Class AB PA and helical / true dipole antennas (USA).
(25) Transceiver: 910 ~ 920 MHz, +20 dBm, minimum 250 kHz RF channel bandwidth, FSK, Zero-IF XEMICS-SEMTECH RFIC-based long-range frequency-hopped spread spectrum transceiver with external one-transistor Class AB PA, two-transistor cascade LNA, and helical / true dipole antennas (Taiwan).
(26) Transceiver: 915 MHz, +20 dBm, (minimum 500 kHz RF bandwidth Maxim-IC TX RFIC + minimum 500 kHz IF bandwidth Infineon RX RFIC)-based long-range transceiver with external helical / quasi-dipole antenna (USA).
(27) Transceiver: 916.5 MHz, +20 dBm, minimum 500 kHz RF bandwidth, Infineon RFIC-based long-range transceiver with external one-transistor Class AB PA, two-transistor cascade LNA, and helical / true dipole antennas (Taiwan).
(28) RF Oscillator: (1) 73.852 MHz: Overtone crystal resonator-stabilized, NCSD.NECEL BJT (2) 433.92 MHz: SAWR-stabilized, Fairchildsemi BJT (3) 866.33 MHz: SAW-stabilized, Sirenza BJT (4) 2.45 GHz: microstrip line-stabilized, Sirenza BJT (Taiwan, USA).
(29) RF Frequency Multiplier: (1) 73.852 MHz-to-295.408 MHz: NCSD.NECEL BJT, Toshiba BJT (2) 295.408 MHz-to-866.33 MHz: NCSD.NECEL BJT, Toshiba BJT (3) 866.33 MHz-to-2.605 GHz: Agilent or Avagotech Schottky diodes, Sirenza BJT (Taiwan, USA).
(30) RF Mixer: (1) 886.225 MHz: NCSD.NECEL BJT, Toshiba BJT (2) 2.605 GHz: Agilent or Avagotech Schottky diodes, Sirenza BJT (Taiwan, USA).
(31) RF Power Amplifier: (1) 433.92 MHz: +20 dBm, NCSD.NECEL BJT, 1W, Mitsubishi Enhancement-Type MOSFET (2) 914.5 MHz, 915 MHz, 916.5 MHz: +20 dBm, Philips BJT (3) 2.45 GHz: +23-dBm, G-Plus PA RFIC, and RFMD PA RFIC (Taiwan, USA).
(32) RF Low-Noise Amplifier: (1) 433.92 MHz: NCSD.NECCEL BJT, Sanyo BJT, and Sanyo BJT (2) 907.17 MHz: NCSD.NECEL BJT (2) 2.45 GHz: Sirenza BJT (3) 5.8 GHz: NCSD.NECEL HJFET (Taiwan, USA).
(33) RF Filter: (1) SAW: (a) 426.0750 MHz: Telefilter (b) 429.0175 MHz: Telefilter (c) 433.92 MHz: Epcos, Telefilter, Taisaw (d) 914 MHz: Telefilter (e) 915 MHz: Telefilter (f) 916.5 MHz: Chequers-Electronic (2) LC: (a) 426.0750 MHz (b) 429.0175 MHz (c) 433.92 MHz (d) 914 MHz (e) 914.5 MHz (5) 915 MHz (f) 916.5 MHz (Taiwan, USA).
(34) IF Filter: (1) Crystal: 10.7 MHz (2) Ceramic: (a) 10.7 MHz (b) 455 kHz (2) LC: 10.7 MHz (USA).
(35) RF Isolator: (1) 433.92 MHz R/L/C (2) 915 MHz R/L/C (3) 2.45 GHz R/L/C (USA).
(36) RF Attenuator: (1) 433.92 MHz (2) 915 MHz (3) 2.45 GHz (USA).

(37) RF Transmit / Receive Switch: (1) 429.1750 MHz: Toshiba Si switching diode (2) 433.92 MHz: Toshiba Si switching diodes, Philips Si switching diodes, Sanyo MMIC switch (3) 914 MHz, 014.5 MHz, 915 MHz, 916.5 MHz: Philips PIN diodes (4) 2.45 GHz: Skyworksinc GaAs JFET MMIC switch (Taiwan, USA).

(38) Digital Microcontroller: Microchip PICmicro, PIC10F, PIC12C, PIC16F, PIC16LC, PIC16F916, PIC16LC, PIC18F, and PIC24FJ → (1) Firmware Control, Firmware Debouncing, Firmware Noise Effect Suppression, Firmware Filtering, Firmware Digital Signal Processing, Firmware Encoding/Decoding, Firmware Encryption/Decryption, Firmware Media Access Control. (http://www.microchip.com/, http://www.microchip.com.tw/) (Taiwan, USA).

孫卓勳 教授

實驗 (研究) 室名稱：微波與無線零組件實驗室

聯絡電話： 27712171 ext. 2234

Email： jssun@ntut.edu.tw

Homepage： http://www.cc.ntut.edu.tw/~jssun

研究聚焦領域：■ H：健康科技 ■ I：智慧整合科技

■ G：綠色科技 □ H：人文與創新元素

專長

無線整流天線充電系統 Wireless Rectenna Charge System	非接觸式充電系統 Contactless Charge System	天線 Antenna	微波介電共振器 Microwave Dielectric Resonator

1.近年重要論文及著述

[1] C.H. Lin, K.K. Tiong, **J.S. Sun**, Y.D. Chen and G.Y. Chen, "A Compact Internal Planar Antenna with a Capacitive Tuner for 3G and 4G Mobile Phone Application," International Journal of Communications, Issue 2, Vol. 4, 2010, pp.56-64.

[2] C.F. Yang, M. Cheung, C.Y. Huang, **J.S. Sun**, "Print a Compact Single- and Quad-band Slot Antenna on Ceramic Substrate," Journal of Electromagnetic Waves and Applications , Vol. 24, 2010, pp.1697–1707.

[3] C.Y. Kung, Y.C. Chen, S.M. Wu, C.F. Yang, **J.S. Sun**, "The novel compact 2.4/5.2 GHz dual wideband bandpass filter with deep transmission zero," Journal of Electromagnetic Waves and Applications , Vol. 25, 2011, pp.617-628.

[4] C. H. Lin, K.K. Toing, **J.S. Sun**, G.Y. Chen, "A Novel On-Glass GPS Antenna for Handset Applications," Procedia Engineering 29 (2012), pp.3376-3380.

[5] **J.S. Sun**, S.Y. Huang, "Broadband Printed Planar Monopole Antenna for Wireless Terminal Devices Applications," Microwave & Optical Technology Letters, Vol. 55, Issue 1, January 2013, pp. 79–82.

[6] C.C. Lin, C.Y. Huang and J.S. Sun, "Circularly-polarized Dielectric Resonator Antenna Fed by Off-centered Microstrip Line for 2.4-GHz ISM Band Applications", IEEE Antennas and Wireless Propagation Letters, IEEE Antennas and Wireless Propagation Letters, Vol. 12, 2014, pp.356-358.

[7] C.P. Chou, G.Y. Chen, **J.S. Sun** and Y.D. Chen "Cellular Phone Antenna Design for PDA Operation," 8th WSEAS International Conference on APPLIED ELECTROMAGNETICS, WIRELESS and OPTICAL COMMUNICATIONS, Penang. Malaysia, 23-25 March 2010, pp. 25-28.

[8] C.P. Chou, G.Y. Chen, **J.S. Sun** and Y.D. Chen "Wideband WLAN Antenna Design for PDA Operation," 8th WSEAS International Conference on APPLIED ELECTROMAGNETICS, WIRELESS and OPTICAL COMMUNICATIONS, Penang. Malaysia, 23-25 March 2010, pp. 25-28

[9] K.K. Chang, G.Y. Chen, **J.S. Sun**, and Y. D. Chen, "PIFA Antenna with Coupling Effect for Bandwidth Enhanced Design and Measurement," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.304.**

[10] K.K. Chang, G.Y. Chen, **J.S. Sun**, and Y. D. Chen, "Meander Line Antenna for GPS Phone Operation," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.305.**

[11] G.Y. Chen, K.L. Wu, **J.S. Sun**, and Y. D. Chen, "Antenna Measurement System for CTIA OTA Operation," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.306.**

[12] J.Y. Yang, G.Y. Chen, Y.S. Chen, **J.S. Sun**, and Y. D. Chen, "Double-ridged Horn for 3D Antenna Measurement," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.308.**

[13] K.K. Chang, G.Y. Chen, **J.S. Sun**, and Y. D. Chen, "Corrugated Tapered Slot Antenna Design and

Measurement," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.522.**

[14] J.Y. Yang, G.Y. Chen, Y.S. Chen, **J.S. Sun**, and Y. D. Chen, "New Antenna System Measurement Technology for GPS OTA Operation," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.541.**

[15] G.Y. Chen, K.K. Chang, **J.S. Sun**, and Y. D. Chen, "Ultra-wideband (UWB) Dipole Antenna Design and Measurement," 2010 **Progress in Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.551.**

[16] K.L. Wu, G.Y. Chen, **J.S. Sun**, and Y. D. Chen, "Wire Inverted-F Antenna Design for WLAN and Bluetooth Operation," 2010 **Progress In Electromagnetics Research Symposium (2010 PIERS), Xian, China, 22-26 March 2010, p.552.**

[17] C.P. Chou, G.Y. Chen, **J.S. Sun**, and YD Chen, "Cellular Phone Antenna Design for PDA Operation," The 8th WSEAS International Conference on APPLIED ELECTROMAGNETICS, WIRELESS and OPTICAL COMMUNICATIONS, Penang. Malaysia, 23-25 March 2010, pp.25-28.

[18] C.P. Chou, G.Y. Chen, **J.S. Sun**, and YD Chen, "Wideband WLAN Antenna Design for PDA Operation," The 8th WSEAS International Conference on APPLIED ELECTROMAGNETICS, WIRELESS and OPTICAL COMMUNICATIONS, Penang. Malaysia, 23-25 March 2010, pp.29-32.

[19] C.M. Lo, K.L. Wu, **J.S. Sun**, and G.Y. Chen, "Helical Antenna Design and Measurement for Cellular Phone Operation," The 10th WSEAS International Conference on APPLIED INFORMATICS AND COMMUNICATIONS (AIC '10), Taipei, Taiwan, Aug. 2010, pp. 181-184.

[20] C.H. Lin, K.K. Tiong **J.S. Sun**, Y.D Chen, and G. Y. Chen, "A Compact Internal Planar Antenna with a Capacitive Tuner for 3G and 4G Mobile Phone Application," The 10th WSEAS International Conference on APPLIED INFORMATICS AND COMMUNICATIONS (AIC '10), Taipei, Taiwan, 20-22 Aug. 2010, pp. 185-187.

[21] S.H. Wen, K.L. Wu, **J.S. Sun**, and G.Y. Chen, "Novel Wi-Fi Antenna Design and Measurement," The 10th WSEAS International Conference on APPLIED INFORMATICS AND COMMUNICATIONS (AIC '10), Taipei, Taiwan, 20-22 Aug. 2010, pp. 99-102.

[22] K.K. Chang, G.Y. Chen, **J.S. Sun**, Y.D. Chen, "Switched monopole antenna for DVB-H operation," 2010 Applications of Electromagnetism and Student Innovation Competition Awards (AEM2C), Taipei, Aug. 11-13, 2010, pp. 121-124.

[23] K.L. Wu, G.Y. Chen, **J.S. Sun**, and YD Chen, "Wire Antenna for Dual Band WLAN Application," 2010 International Conference on Applications of Electromagnetism and Student Innovation Competition Awards (AEM2C 2010), Taipei, Taiwan, Aug. 2010, pp.139-142

[24] K.K. Chang, **J.S. Sun**, Y.D. Chen, G.Y. Chen, "Corrugated Tapered Slot Antenna Simulation, Design, and Measurement," 2010 Cross Strait Four-Regional Radio Science and Wireless Technology Conference (2010 CSTRWC), Hainan, China, 22-23 Aug. 2010, pp. 4-5.

[25] M.H. Hsu, **J.S. Sun**, YD Chen, and G.Y. Chen, "UWB Dipole Antenna Simulation, Design, and Measurement," 2010 Cross Strait Four-Regional Radio Science and Wireless Technology Conference (2010 CSTRWC), Hainan, China, 22-23 Aug. 2010, pp. 44-45.

[26] K.K. Chang, M.H. Hsu, **J.S. Sun**, YD Chen, and G.Y. Chen, "Coupling Effect for PIFA Antenna Bandwidth Enhanced Design and Measurement," 2010 Cross Strait Four-Regional Radio Science and Wireless Technology Conference (2010 CSTRWC), Hainan, China, 22-23 Aug. 2010, pp. 99-100.

[27] K.L. Wu, **J.S. Sun**, and G.Y. Chen, "Flexible Printed Circuit Board (FPC) Antennas for Mobile Phone Operation," 2010 5th International Microsystems, Packaging, Assembly and Circuits Technology Conference (2010 IMPACT), Taipei, Taiwan, Oct. 2010.

[28] C.P. Chou, **J.S. Sun**, Y.D. Chen, and G.Y. Chen, "Mesh-Loading Antenna Design for PDA Operation,"2010 International Symposium on Antenna and Propagation (2010 ISAP), Macao, China, 23-26 Nov., 2010, pp. 897-900.

[29] C.P. Chou, **J.S. Sun**, Y.D. Chen, and G.Y. Chen, "Novel Wire Antenna for Mobile Phone Operation," 2010 National Symposium on Telecommunications (NST 2010), Tao-Yuan, 3-4 Dec. 2010, ID#250.

[30] C.P. Chou, **J.S. Sun**, Y.D. Chen, and G.Y. Chen, "Telescopic Antenna for DVB-H Operation, 2010 National Symposium on Telecommunications (NST 2010), Tao-Yuan, Tao-Yuan, 3-4, Dec. 2010, ID#251.

[31] C.F. Yang, Y.C. Chen, C.Y. Kung, S.M. Wu, **J.S. Sun**, "T-Shaped Non- Orthogonal Feed Input/Output Dual-Mode Bandpass Filter", 2010 Asia-Pacific Microwave Conference (APMC2010), Yokohama Japan, 7-10 Dec. 2010, pp. 1193 - 1196.

[32] **J.S. Sun**, R.H. Chen and S.K. Liu, "A Circularly Polarized Rectenna for Wireless Power Transmission," 2011 Progress in Electromagnetics Research Symposium (2011 PIERS), Suzhou, China, 12-16 Sept. 2011, p.167.

[33] K.L. Wu, **J.S. Sun**, Y.D. Chen, G.Y. Chen, " GPS Antenna Design and Measurement," 2011 Progress in Electromagnetics Research Symposium (2011 PIERS), Suzhou, China, 12-16 Sept. 2011, p.184.

[34] C.P. Chou, **J.S. Sun**, Y.D. Chen, G.Y. Chen, " GPS Antenna Design and Measurement," 2011 Progress in Electromagnetics Research Symposium (2011 PIERS), Suzhou, China, 12-16 Sept. 2011, p.187.

[35] C.P. Chou, Y.D. Chen, **J.S. Sun**, G.Y. Chen, " Cellular Antenna Design and Measurement," 2011 Progress in Electromagnetics Research Symposium (2011 PIERS), Suzhou, China, 12-16 Sept. 2011, p.188.

[36] G.Y. Chen, K.L. Wu, Y.D. Chen, **J.S. Sun**, "Small Antenna Chamber Design and Measurement," 2011 Progress in Electromagnetics Research Symposium (2011 PIERS), Suzhou, China, 12-16 Sept. 2011, p.655.

[37] J.S Sun, H.C. Teng, T.L. Li and G.P. Pan, "Design of a Contactless Charging Platform," 2012 IEEE International Conference on Wireless Information Technology and Systems (ICWITS 2012), Maui, Hawaii, Nov. 2012, WITS1199.

[38] H.C. Teng, T.L. Li, G. P. Pan, and J.S. Sun, "A Contactless Inductive Charging Platform," 2013 Progress in Electromagnetics Research Symposium (2013 PIERS), Taipei, Taiwan, 25-28 Mar. 2013, p. 672.

[39] H.C. Tsai, T.L. Li, H. W. Liu, J.S. Sun, "Design of a Multi-band Dielectric Resonator Antenna," 2013 Progress in Electromagnetics Research Symposium (2013 PIERS), Taipei, Taiwan, 25-28 Mar. 2013, p. 679.

[40] S.J. Hung, T.L. Li, Y.C. Huang, J.S. Sun, "Design of a Circularly Polarized Rectenna for Wireless Power Transmission," 2013 Progress in Electromagnetics Research Symposium (2013 PIERS), Taipei, Taiwan, 25-28 Mar. 2013, p. 680.

[41] **J.S. Sun**, S.J. Hung, Y.C. Huang, T.L. Li, G.P. Pan " A Rectenna for Wireless Power Transmission" Progress In Electromagnetic Research Symposium 2013 (2013 PIERS), , Stockholm, SWEDEN, 12-15 Aug., 2013, p.109.

[42] **J.S. Sun**, S.J. Hung, G.P Pan, and T.L. Li, " A Circularly Polarized Half-Wave Voltage Doubling Rectenna," 18th International Conference on Circuits, Systems, Communications and Computers (CSCC 2014), Santorini Island, Greece, July 17-21, 2014, pp.149-151.

[43] H.S. Fang, **J.S. Sun**, C.S. Chuang, " A Compact Dual-Band MIMO Planar Antenna," 2014 IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC2014), San Diego, USA, Oct. 5-8, 2014, pp.1842-1845.

[44] C.S. Chuan, H.S. Fang, **J.S. Sun**, "A Compact Dual-Band MIMO Antenna for Wireless LAN Applications ," 2014 Asia-Pacific Microwave Conference (APMC 2014), Sendai, Japan, Nov. 4-7, 2014, pp. 980 - 982.

- 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

應用於無線功率傳輸之雙頻圓極化整流天線研究 (NSC98-2221-E-027-029-)	主 持 人	98/08~99/07	國科會
應用於無線功率傳輸之圓極化陣列整流天線研究 (NSC99-2221-E-027-013)	主 持 人	99/08~100/10	國科會
教育部補助 99 年度前瞻晶片系統設計(SoC)學程計畫	主 持 人	99/02~100/01	教育部
教育部顧問室智慧電子整合性人才培育計畫--智慧電子跨領域應用專題系列課程計畫	主 持 人	100/09~102/01	教育部

426MHz 無線電系統收發機暨天線之研製	主 持 人	101/1-102/06	艾禮富股份有限公司
智慧型非接觸式充電平台之研究 (NSC 101-2221-E-027 -095 -MY2)	主 持 人	101/08~103/07	國科會
應用於液晶電視之射頻無線充電系統暨天線之研製	主 持 人	102/05~103/04	嘉捷科技有限公司
技職校院電資系科創業導向校外實習課程規劃與教學實驗之研究 NSC102-2511-S-027 -003 -MY3	共同主持人	102/08~104/07	國科會
高頻天線與收發機製作	主 持 人	103/07~104/07	微端科技股份有限公司
具天線與感應雙重應用模組	主 持 人	104/02~104/07	晶鈦國際電子有限公司

- 協助產業發展績效：

1. 協助嘉捷科技有限公司開發應用於液晶電視之射頻無線充電系統暨天線
2. 協助微端科技股份有限公司開發高頻天線與收發機
3. 協助晶鈦國際電子有限公司開發具天線與感應雙重應用模組
4. 協助日本艾禮富公司開發426MHz 無線電系統收發機暨天線
3. 協助宏達電PDA、smart phone 手機天線研發
4. 協助廣達電ODM 手機天線研發
5. 協助郁晨實業公司無線射頻辨識系統及天線之研發
6. 協助郁晨實業公司具無線充電技術之超高頻無線射頻辨識系統電路之分析與研發

林丁丙 教授

實驗 (研究) 室名稱：無線通訊與電磁應用實驗室

聯絡電話：0952828855

e-mail：dblin@ntut.edu.tw

網址：http://www.ntut.edu.tw/~dblin

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技

□ G：綠色科技　□ H：人文與創新元素

專長

1. 天線設計	2. 微波工程	3. 電波傳播	4.無線通訊

1.近年重要論文及著述

(a) 期刊論文

[1]. H. Chang Lo, D. B. Lin, T. C. Yang and H. J. Li, "Effect of Polarization on the Correlation and Capacity of Indoor MIMO Channels," *International Journal of Antennas and Propagation*, vol. 2012, 2012. (SCI)

[2]. D. B. Lin, C. C. Wang, J. H. Chou, and I. T. Tang, "Novel UHF RFID Loop Antenna with Interdigital Coupled Section on Metallic Objects," *Journal of Electromagnetic Waves And Applications*, vol. 26, no. 2-3, pp. 366-378, 2012. (SCI)

[3]. R. S. Hsiao, D. B. Lin, H. P. Lin, S. C. Cheng, and C. H. Chung, "A Robust Sensor Deployment of Wireless Sensor Networks for Home Automation," *Sensor Letters*, vol. 10, no. 5/6, pp. 1209-1215, 2012. (SCI)

[4]. D. B. Lin, I. T. Tang, and E. T. Chang, "Printed spiral-slot multimode antenna miniaturization for digital television signal receptions," *Microwave and Optical Technology Letters*, vol. 54, no.6, pp. 1369-1371, 2012. (SCI)

[5]. R. S. Hsiao, D. B. Lin, H. P. Lin, S. C. Cheng and C. H. Chung, "A Robust Occupancy-based Building Lighting Framework using Wireless Sensor Networks," *Applied Mechanics and Materials*, Vols. 284-287. pp 2015-2020, Jan. 2013. (EI)

[6]. D. B. Lin, F. N. Wu, C. T. Wu, K. C. Hung, Jim Nadolny, "Channel Optimization by Selecting On-Die Termination on Multi-drop Topologies," *International Journal of Electrical Engineering*, vol. 19, no. 4, pp. 159-168, 2013. (EI)

[7]. R. S. Hsiao, D. B. Lin, H. P. Lin, S. C. Cheng and C. H. Chung, "A Robust Occupancy-based Building Lighting Framework using Wireless Sensor Networks," *Applied Mechanics and Materials*, Vols. 284-287. pp 2015-2020, Jan. 2013. (EI)

[8]. D.-B. Lin, Y.-H. Ho and J.-H. Chou, "Far-End Crosstalk Improvement Of Coupled Microstrip Lines By Using Step-Guard-Trace," *International Journal of Electrical Engineering*, vol. 20, no. 3, pp. 85-89, 2013. (EI)

[9]. Su-Mei Shen, I-Fong Chen, Chia-Mei Peng, and Ding-Bing Lin, "Printed Asymmetric Dual-Dipole Antenna for Tablet PC Applications," *IEEE Antennas and Wireless Propagation Letter*, vol. 12, pp. 1003-1005, 2013. (SCI)

[10]. Ding-Bing Lin, Jui-Hung Chou, Chih-Yu Wu, and Hsueh-Jyh Li, "A Novel Miniaturized Dual-Layered LTE Printed Antenna for Handheld Devices", *IEEE Antennas and Wireless Propagation Letter*, vol. 12, pp. 1680-1683, 2013. (SCI)

[11]. Jui-Hung Chou, Jo-Fan Chang, Ding-Bing Lin, Hsueh-Jyh Li, Tzong-Lin Wu, "A Compact Loop-Slot Mode Combination Antenna for Ultra-thin Tablet Computer with Metallic Bottom

Cover," accepted by *IEEE Antennas and Wireless Propagation Letter,* vol. 13, 2014. (SCI)

[12]. Pang-Chun Tsai, Hsin-Piao Lin, Ding-Bing Lin, and Ching-Jen Chang, "Design and Implement of Transceiver System for Hybrid Rocket with Coplanar Wraparound Antenna at 433 MHz," accepted by *IET Microwaves, Antennas & Propagation*, 2014. (SCI)

[13]. Ding-Bing Lin, Jui-Hung Chou, Sonon Fu and Hsueh-Jyh Li, "A compact dual-band printed antenna design for LTE operation in handheld device applications," accepted by *International Journal of Antennas and Propagation*, vol. 2014, 2014. (SCI)

(b) 研討會論文

[1]. D. B. Lin, C. K. Wang, C. H. Lu, and J. H. Chou, "Dumbbell Resonators to Reduce Crosstalk on Slotted Ground Plane," in *Proc. of Progress In Electromagnetics Research Symposium*, Kuala Lumpur, Malaysia, 27-30, Mar. 2012.

[2]. J. H. Chou, H. J. Li, D. B. Lin and W. C. Shih, "Miniaturized DTV Broadband Slot Antenna for Handheld Devices," in *Proc., Antennas and Propagation Society International Symposium*, Chicago, America, July 2012.

[3]. R. T. Juang, D. B. Lin and H. P. Lin, "Uplink Spectrum Sharing for Heterogeneous Networks based on Reconfigurable Antenna Syst," in *Proc., Antennas and Propagation Society International Symposium*, Chicago, America, July 2012.

[4]. D. B. Lin, J. C. Hsieh, H. P. Lin and W. K. Chen, "Improved Differential Detection in Primary Synchronization for 3GPP LTE Downlink System," in Proc., *the 9th IEEE VTS Asia Pacific Wireless Communications Symposium*, Kyoto, Japan, Aug. 2012.

[5]. D. B. Lin, J.W. Yu, H. P. Lin, W. K. Chen, "A low complexity detection based on multiple QRD-M and real value decomposition for MIMO-OFDM systems," in Proc., *the 9th IEEE VTS Asia Pacific Wireless Communications Symposium*, Kyoto, Japan, Aug. 2012.

[6]. R. S. Hsiao, D. B. Lin, H. P. Lin, C. H. Chung, S. C. Cheng, "A Robust Wireless Sensor Network Framework for Building Automation Systems," in Proc., *the 9th IEEE VTS Asia Pacific Wireless Communications Symposium*, Kyoto, Japan, Aug. 2012.

[7]. D. B. Lin, J. C. Hsieh, H. P. Lin, W. K. Chen, "Improved Joint Correlated Detection in Cell Search and Synchronization Procedure in 3GPP LTE Downlink System," in Proc., *the 6th IEEE International Conference on Anti-counterfeiting, Security, and Identification* Aug. 2012.

[8]. Jui-Hung Chou, D. B. Lin, Kuo-Lin Weng and Hsueh-Jyh Li, "Novel T-shape slot couple feed dual circular polarized rectenna," in Proc., *International Symposium on Antennas and Propagation*, Nagoya, Japan, Oct. 2012.

[9]. D. B. Lin, Chen-Kuang Wang, Jui-Hung Chou, "Stepped Guard Trace with the Fewest Shorting-Vias to Eliminate the Ringing Noise of Coupled Microstrip Lines," in Proc., *2012 IEEE Electrical Design of Advanced Packaging and System Symposium,* Taipei, Taiwan, Dec. 2012.

[10]. D. B. Lin, Ruei-Hua Shen, "The Improvement of Signal Quality and Far-End Crosstalk for Coupled Microstrip Line Over a Completely Split Ground Plane," in Proc., *2012 IEEE Electrical Design of Advanced Packaging and System Symposium,* Taipei, Taiwan, Dec. 2012.

[11]. Y. C. Chan, P. H. Tseng, D. B. Lin, "Fractional Timing Estimation with Fractionally-shifted Preamble for OFDM Systems," in Proc., 2013 Asia Pacific Wireless Communications Symposium, Seoul, South Korea, Aug, 2013.

[12]. Y. C. Chan, P. H. Tseng, D. B. Lin, "Maximal Power Path Detection for OFDM Timing-Advanced Synchronization Schemes" in Proc., 2013 IEEE 24th International Symposium on Personal, Indoor and Mobile Radio Communications, London, England, Sep, 2013.

[13]. D. B. Lin, J. H. Chou, C. Y. Wu, H. J. Li, "Miniaturized Dual-Band LTE Internal Handset Antenna" in Proc., 2013 Asia-Pacific Radio Science Conference, Taipei, Taiwan, Sep, 2013.

[14]. J. H. Chou, D. B. Lin, C. H. Lin, H. J. Li, "S-Band Circularly Polarized Crossed Dipole for Automotive Applications" in Proc., 2013 international symposium on antennas and propagation, Nanjing, China, Oct, 2013.

[15]. D. B. Lin, Y. Z. Chen, and J. H. Chou, "A Compact Broadband Filter for Common-Mode Noise Rejection in Differential Transmission Lines" *in Proc., International Symposium on Next-Generation Electronics*, Taoyuan, Taiwan, May, 2014.

[16]. J. H. Chou, D. B. Lin, C. H. Wu, H. J. Li, "A Novel LTE MIMO Antenna with Decoupling Element for Mobile Phone Application" *in Proc., International Symposium on Electromagnetic Compatibility*, Tokyo, Japan, May, 2014

[17]. 周瑞宏、林丁丙、翁國霖、李學智,"應用於無線傳能之槽孔耦合雙圓極化整流天線,"2012 電信研討會，彰化，2012 年 11 月。

[18]. 何永先、林丁丙、陳昱佐,"以步階防護線改善相鄰微帶線之串音干擾," 2012 電信研討會，彰化，2012 年 11 月。

[19]. 林丁丙、周瑞宏、林崇道，"A Low Profile Diversity Antenna for Indoor Ceiling Applications of WLAN Systems," 2013 電信研討會，台南，2013 年 11 月。

(c) 專利

[1]. Jung-Chan Chang, D. B. Lin, "Interconnect structure," United States Patent, US 8071891 B2, Dec. 16, 2011.

[2]. Shi-ming Zhao, D. B. Lin, Chao-Hsiung Tseng, Jui-Hsien Chien, Shiao-Ting Wu, "Dipole antenna capable of supporting multi-band communications," United States Patent, US 7944402 B2, May 17, 2011.

(d) 技術移轉

[1] "網路連接器 Cat6 之設計," 鼎志股份有限公司，2008 年 8 月～2011 年 7 月

(e) 專書及專章

(f) 作品

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

[1] "網路通訊科技人才培育先導型計畫-數位電視與廣播教學推動聯盟中心," 教育部，2010 年 4 月～2014 年 3 月。

[2] "運用互動學習與實境參與提升高中女性對無線網通科技之探索能力," 國科會，2010 年 5 月～2012 年 4 月。

[3] "載波聚合技術對行動通訊系統整體資料吞吐量之影響," 企業產學計畫，2011 年 6 月～2012 年 5 月。

[4] "高速電路佈局系統寬頻同步切換雜訊之抑制技術," 國科會專題研究計畫，2011 年 8 月～2012 年 7 月。

[5] "車用多方向性圓極化接收天線設計," 企業產學計畫，2011 年 10 月～2012 年 9 月。

[6] "提升 LTE-A 系統整體資料吞吐量之載波選擇及干擾消除之研究," 企業產學計畫，2012 年 6 月～2013 年 5 月。

[7] "車用多模態圓極化接收天線設計," 企業產學計畫，2012 年 10 月～2013 年 3 月。

[8] "全金屬背蓋之 NFC 天線設計," 企業產學計畫，2013 年 4 月～2014 年 3 月。

[9] “台灣佈建 LTE-A 系統之頻率規劃與資源配置機制的探討,” 企業產學計畫，2013 年 6 月～2014 年 5 月。

[10] “高速電路佈局之遠端串音干擾抑制技術,” 國科會專題研究計畫，2013 年 8 月～2014 年 7 月。

[11] “評估以被動式中繼器提升 e-Tag 系統 LTE-A 系統共存之強健性,” 企業產學計畫案，2014 年 1 月～2014 年 12 月。

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

頒獎單位	獲獎日期	獲獎名稱
國立台北科技大學	2009/11/01	國立台北科技大學九十八年度全校傑出研究獎
國立台北科技大學電資學院	2009/04/20	國立台北科技大學電資學院九十八年度傑出研究獎

(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

1. Guest Editor, International Journal of Antennas and Propagation (SCI Journal)
2. TPC Member, IEEE Electrical Design of Advanced Packaging & Systems Symposium (EDAPS 2012)
3. TPC subcommittee chair, International Symposium of Antennas and Propagation (ISAP 2014).
4. TPC Chair, Asia-Pacific Symposium on Electromagnetic Compatibility (APEMC 2015).
5. TPC Co-chair, IEEE Asia Pacific Wireless Communication Symposium (IEEE APWCS 2009).
6. TPC Chair, IEEE Asia Pacific Wireless Communication Symposium (IEEE APWCS 2010).
7. General Co-chair, IEEE Asia Pacific Wireless Communication Symposium (IEEE APWCS 2011).
8. 議程主席，IEEE EMC Society Taipei Chapter(自 2013 年起).
9. 支會主席， IEEE Broadcast Technology Society，Taipei Chapter (自 2010 年起).
10. 2013 全國電信研討會議程委員
11. 2012 全國電信研討會議程委員

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

林信標 教授

實驗 (研究) 室名稱：行動通訊實驗室
聯絡電話：02-27712171 ext. 2248
e-mail：hplin@ntut.edu.tw
網址：
研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素
專長：1._行動通訊_ 2._無線通道量測與模型化_ 3._多天線系統_ 4._適應性傳輸技術

1.近年重要論文及著述
(a)期刊論文

1. Pang-Chun Tsai, Hsin-Piao Lin, Ding-Bing Lin, and Ching-Jen Chang," Design and Implement of Transceiver System for Hybrid Rocket with Coplanar Wraparound Antenna at 433 MHz" IET Microwaves, Antennas & Propagation, Vol. 8, Iss. 13, pp. 1080–1090, Oct. 2014.
2. Ching-Jen Chang, Lei Yen, Jayanta Data, Hsin-Piao Lin, and Shiann-Shiun Jeng. "An four-port 12 beam phased array antenna system." Microwave and Optical Technology Letters, Volume 56, Issue 6, pages 1375–1378, June 2014.
3. Kun-Yi Lin, Hsin-Piao Lin, and Ming-Chien Tseng, "Channel Capacity Optimization for High-Speed Rail Radio Communications by Using Distributed Multiple-Input Multiple-Output Systems.", Vol. 4, Issue 2,pp. 363-368, April 2013 ICIC Express Letters Part B: Applications.
4. Ching-Jen Chang, Hsin-Piao Lin, Chun-Yao Jung, and Shiann-Shiun Jeng (2013, Apr). Deployment stratagem of the new WiMAX base stations among existing wireless networks using genetic algorithms. International Journal of Innovative Computing, Information and Control (IJICIC), Vol. 4, No. 2, pp. 381-386. NSC101-2221-E-027-086.
5. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng and Chen-Hua Chung, "A Robust Occupancy-based Building Lighting Framework using Wireless Sensor Networks," Applied Mechanics and Materials. Jan. 2013.
6. Kun-Yi Lin, Hsin-Paio Lin and Ming-Chien Tseng, "An Equivalent Channel Time Variation Mitigation Scheme for ICI Reduction in High-Mobility OFDM Systems," IEEE Transactions on Broadcasting, vol.58, no.3, pp.472-479. (SCI). NSC 98-2221-E-027-036-MY3. Sep. 2012.
7. Rong-Shue hsiao, Ding-Bing Lin, Hsin Piao Lin, Shu-Chun Cheng, and Chen-Hua Chung, "A Robust Sensor Deployment of Wireless Sensor Networks for Home Automation," Sensor Letters , 10(5/6), 1209-1215, May 2012.
8. Rong-Terng Juang, Kao-Fa Yeh, Hsin-Piao Lin, and Ding-Bing Lin, "Performance Verification of WCDMA Soft Handover on High-speed Trains," *International Journal of Electrical Engineering*, Vol. 17, No. 5, pp. 321-326, Oct. 2010. [EI]
9. Rong-Terng Juang, Kar-Peo Yar, Hsin-Piao Lin, and Ding-Bing Lin, "Wireless Broadcasting Using XOR Coding," *Electronics Letters*, 2010. (SCI)
10. Rong-Terng Juang, Pangan Ting, Hsin-Piao Lin, and Ding-Bing Lin, "Link Adaptation based on Repetition Coding for Mobile WiMAX Systems," *IET Communications*, vol. 4, iss. 9, pp. 1039-1048, 2010. (SCI)

(b)研討會論文

1. Lei Yen and Hsin-Piao Lin, “Investigation on Distributed Antennas Deployment Method for Indoor Line-of-Sight Multiple Input Multiple Output Wi-Fi System.” 2013 National Symposium on Telecommunications. (NSC 101-2221-E-027-086)
2. Jayanta Datta, Hsin-Piao Lin, Lei Yen, and Shiann-Shiun Jeng. “Implementation of Spectrum Sensing aided Noise CanCellation in OFDM system using USRP and MATLAB.” 2013 Asia Pacific Wireless Communications Symposium. (NSC 102-2221-E-027-008)
3. R.S. Hsiao, D.B. Lin, H.P. Lin, C.H. Chung and S.C. Cheng (2012, Dec). Integrating ZigBee Lighting Control into Existing Building Automation System. 2012 IET International Conference on Information Science and Control Engineering (ICISCE 2012), Shenzhen, China.Rong-Terng Juang; Kar-Peo Yar; Kun-Yi Lin; Ding-Bing Lin; Pangan Ting; Hsin-Piao Lin (2011, Oct). Performance enhancement of OFDM systems based on signal spreading. 2011 IEEE 7th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Shanghai, China.
4. Ding-Bing Lin*, Jung-Cheng Hsieh, Hsin-Piao Lin. (2012, Aug). Improved joint correlated detection in Cell search and synchronization procedure in 3GPP LTE downlink system. Anti-Counterfeiting, Security and Identification (ASID), 2012 International Conference.Ding-Bing Lin, Jung-Cheng Hsieh, Hsin-Piao Lin, Woei-Kae Chen (2012, Aug). Improved Differential Detection in Primary Synchronization for 3GPP LTE Downlink System. Proceeding of APWCS2012, Koyto, Japan.
5. Ding-Bing Lin, Jung-Cheng Hsieh, Hsin-Piao Lin, Woei-Kae Chen (2012, Aug). Improved Differential Detection in Primary Synchronization for 3GPP LTE Downlink System. Proceeding of APWCS2012, Koyto, Japan.Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng and Chen-Hua Chung (2012, Nov). A Robust Occupancy-based Building Lighting Framework using Wireless Sensor Networks . The 2nd International Conference on Engineering and Technology Innovation 2012 (ICETI2012), Kaohsiung, Taiwan.
6. R.S. Hsiao, D.B. Lin, H.P. Lin, C.H. Chung and S.C. Cheng (2012, Dec). Integrating ZigBee Lighting Control into Existing Building Automation System. 2012 IET International Conference on Information Science and Control Engineering (ICISCE 2012), Shenzhen, China.
7. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Chen-Hua Chung, Shu-Chun Cheng (2012, Aug). A Robust Wireless Sensor Network Framework for Building Automation Systems. Proceeding of APWCS2012, Koyto, Japan.
8. Rong-Shue Hsiao*, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng, and Chen-Hua Chung (2011, Nov). A Robust Sensor Deployment of Wireless Sensor Networks for Home Automation. The International Conference on Engineering and Technology Innovation.
9. Rong-Terng Juang; Kar-Peo Yar; Kun-Yi Lin; Ding-Bing Lin; Pangan Ting; Hsin-Piao Lin (2011, Oct). Performance enhancement of OFDM systems based on signal spreading. 2011 IEEE 7th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Shanghai, China.
10. Kun-Yi Lin*, Hsin-Piao Lin, and Ming-Chien Tseng (2011, Aug). Performance Evaluation of MIMO Capacity with RoF DAS for Line-of-Sight Channel in High Speed Rail Environment. The 8th IEEE VTS Asia Pacific Wireless Communications Symposium, Singapore. NSC 98-2221-E-027-036-MY3.
11. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng, and Chen-Hua Chung

(2011, Aug). Indoor Target Detection and Localization in Pyroelectric Infrared Sensor Networks . The 8th IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2011), Singapore.

12. Pang-Chun Tsai*; Ding-Bing Lin; Hsin-Piao Lin; I-Tseng Tang; Peng-Su Chen (2011, May). Printed Inverted-F Monopole Antenna for Internal Multi-Band Mobile Phone Antenna. 2011 IEEE 73rd Vehicular Technology Conference (VTC Spring). NSC 98-2221-E-027-036 -MY3.

(c)專利

1. 鄭名宏、曾銘健、林信標，“Adaptive Automatic Repeat-request Apparatus and Method for a Multiple Input Multiple Output System”，美國發明第 8321742 號專利 。
2. 曾銘健、林信標、鄭名宏 、林坤毅，“訊號來向角度的估測裝置及方法與其通信系統”，日本發明第 5159839 號專利。
3. 鄭名宏 、曾銘健、林信標,“多輸出多輸入系統之適應性自動重傳要求裝置與方法”，中華民國專利第 I 399054 號,專利期間:2013 年 6 月 11 日至 2029 年 4 月 9 日。
4. 鄭名宏 、曾銘健、林信標,“多輸出多輸入系統之適應性自動重傳要求裝置與方法”，中國大陸發明第 ZL200910136070.9 號專利。

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(1)2011 年執行 NCC 電波監測網監測範圍涵蓋評估研究，幫 NCC 開發電波監測站佈建規劃平台，並以此為依據進行全台 35 處站點之電波監測涵蓋及定向涵蓋之模擬評估，可分析使用干擾來向之定位追蹤偵測，並輔以優化之程式來評估未來電波監測站建置優先順序與抗干擾保護之依據

(2)2008~2010 年間參與國科會計畫「國際標準建置計畫案(I)、(II)、(III)」，三年來參與 16 次 IEEE 802.16m 標準制訂會議，在會中針對 Link、HARQ、EMBS 與 Femtocell 等多項議題，提出 contributions，其中多項已被採納放入標準中。針對 16m Link Adaptation 議題，共提出 4 篇相關提案、2 篇會議論文與 1 篇期刊論文，有 1 件提案被部分接受並有 1 件專利申請，專利內容為基於 Rician 通道 K 參數進行相關之適應性傳輸選擇調整。基於 16M E-MBS 部分合計有 4 篇相關提案，其中 1 篇為與 TOSHIBA 公司合提，有 2 篇相關提案被接受。 針對 16m HARQ 議題，有 4 篇標準提案，3 篇會議論文與 1 篇期刊論文，和進行 1 件專利申請，專利內容為藉由封包重傳時在不同的天線與頻率上進行編碼，可降低因頻率偏移造成正交分頻多工系統的載波間干擾。對於 16m Femtocell，共計提出 6 篇提案，3 篇相關提案被接受以及 1 篇論文發表。2014 起參與 CTIA MIMO OTA 之測試標準制定，持續在多天線系統通訊產品之品質提升與傳播特性量測方法改良等議題持續進行研究與探討。

(3)2008 年起參與太空中心及國科會跨領域研究案，發展探空火箭之空對地通信系統與地面追蹤系統。火箭通信系統採用 434 MHz 與 2.4 GHz 通信模組，並自製在火箭端的兩頻段高功率放大器與天線，可達數百公里的傳輸距離。在分散式連網地面接收系統方面，則設計多組低成本地面雙頻接收系統，透過軟硬體的整合設計可更精準接收火箭下載的資料；同時整合 3G 網路，可將重要資訊即時後送遠端控制中心。

(4)2009 年起與工研院合作量測與分析高鐵上高速移動時之通道特性，建立一套高鐵寬頻通道模式。並已初步研發出適用於高鐵隧道內之 WCDMA 及 WIMAX ROF 系統的 RF Front-End Module，此電路系統結合了微波電路、陣列天線、高鐵寬頻通道模式與高速演算法，將加入 LTE 系統進行整合測試，並佈建於高鐵沿線進行實際量測測試，目前正協助工研院開發一套適用於高鐵全線之整合式 LTE ROF 通訊系統。

(5)長期與台灣大哥大合作，主要以協助行動通信系統業者維護系統營運及提供相關電波傳播模式之諮詢為主。建置量測機制，進行電波傳播量測工作，並發展適用於台灣電波傳播環境的通訊效能分析與優化策略。開發以基因演算法來達到 GSM 系統的基地站台最佳化與系統優化的技術，其中基因演算法考慮的參數包括基地站台數量、基地站台位置、天線高度與發射功率等。另外，在第三代行動通訊系統中，我們於台北地區進行的一系列 3G 頻譜干擾量測，其中量測頻段包括 W-CDMA 系統之 FDD Mode Uplink、FDD Mode Downlink、與 TDD Mode 頻段，並且以統計參數，包括干擾強度機率累加函數、干擾強度準位穿越率、干擾的平均頻寬，來評估 3G 頻譜的乾淨度，這樣的方法可以容易地將大量的量測資料，量化得到每個頻段的乾淨程度。我們更進一步分析不同干擾大小值對於系統涵蓋率與系統容量的影響，接下來以此量測資料當基礎，並使用簡單的基因演算法來完成 W-CDMA 系統的基地站台最佳化，以得到受到最小干擾影響且使用最少資源，來達到最大效能的系統。

李仁貴 教授

實驗 (研究) 室名稱：醫電工程與感測器網路

聯絡電話：02-2771-2171 ext 2254

e-mail：evans@ntut.edu.tw

網址：http://www.el.ntut.edu.tw/files/15-1044-14483,c2678-1.php

研究聚焦領域：■ H：健康科技　□ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長：1. 醫療電子　2. 穿戴式技術　3. 行動照護　4. 感測器網路技術

1.近年重要論文及著述

(a) 期刊論文

1. Sheng-Chung Tien, Robert Lin, Tsung-Yu Lee, Ren-Guey Lee*, and Shu-Ying Huang (2014, Mar). Development and Implementation of Wireless Multigas Concentration Cloud System. Sensor Networks, Volume 2014, Article ID 213195, 11 pages. 本人為通訊作者.
2. Tsung-Yu Lee, Ren-Guey Lee, Sheng-Chung Tien, Robert Lin, Wei-Hua Su (2013, Dec). An Accelerating 3D Image Reconstruction System Based on the Level-of-Detail Algorithm. GSTF Journal on Computing, Vol. 3 No. 3. 本人為通訊作者.
3. Tsang-Chu Yu, Chung-Chih Lin, Chun-Chang, Chen, Wei-Lun Lee, Ren-Guey Lee (2013, Jun). Wireless Sensor Networks for Indoor Air Quality Monitoring. Journal of Medical Engineering and Physics, Vol. 35 pp. 231– 235.
4. Yu-Chuan Chang, Chung-Chih Lin, Pei-Hsin Lin, Chun-Chang Chen, Ren-Guey Lee, Jing-Siang Huang, Tsai-Hsuan Tsai (2013, Feb). eFurniture for home-based frailty detection using artificial neural networks and wireless sensors. Journal of Medical Engineering and Physics, Volume 35, Issue 2, Pages 263–268. (SCI).
5. Ren-Guey Lee*, Sheng-Chung Tien, Chun-Chang Chen and Yu-Ying Chen (2012, Nov). Development of an Augmented Reality Oriented Game System for Stroke Rehabilitation Assessment. Journal of Biomedical Engineering: Applications, Basis and Communications, Vol. 24, No. 5 pp. 435--445. 本人為第 一作者、通訊作者.
6. Tsang-Jyu You, Wei-Lun Lee, Chung-Chih Lin, Ren-Guey Lee, Chao-Heng Tseng, and Shi-Ping

Liu (2012, Jun). Wireless Sensing System for Indoor Air Quality. Recent Advances in Computer Science and Information Engineering, Lecture Notes in Electrical Engineering, No. 1, Vol. 127, pp.381-387.

7. Ren-Guey Lee*, Chun-Chieh Hsiao and Chieh-Yi Kao (2011, Sep). Using Different Entropies to Analyze the Heart Rate Variability of Congestive Heart Failure Patients. Journal of Biomedical Engineering: Applications, Basis and Communications, Vol. 23, No. 4, pp. 253–260. (SCI). 本人為第一作者、通訊作者.
8. Ren-Guey Lee*, Chun-Chang Chen, Chun-Chieh Hsiao, Hsi-Wen Wang and Ming-Shen Wei (2011, Aug). Sleep Apnea Syndrome Recognition Using the GreyArt network. Journal of Biomedical Engineering: Applications, Basis and Communications, Vol. 23, No. 3, pp. 163–172. (SCI). 本人為第一作者、通訊作者

(b)研討會論文

1. Chih-Yang Chen, Jian-Ming Liu and Ren-Guey Lee (2015, Feb). Heart Rate Monitoring System in Groups Used in Reliability and Validity Assessment of Cardiorespiratory Fitness Analysis. SEMBA-2015 (Symposium on Engineering, Medical and Biology Applications, Taiwan. 本人為通訊作者.
2. Ching-Kai Lin, Fan-Wei Hsu and Ren-Guey Lee (2015, Feb). Analysis of Heart Rate Variability between Different Long-term Sitting Periods Using Wearable System. SEMBA-2015 (Symposium on Engineering, Medical and Biology Applications, Taiwan. 本人為通訊作者.
3. Ping-Yi Lin, Shei-Wei Wang and Ren-Guey Lee (2015, Feb). Analysis and Assessment of Sleep Quality Detection Algorithm Based on Wearable Device. SEMBA-2015 (Symposium on Engineering, Medical and Biology Applications, Taiwan. 本人為第一作者、通訊作者.
4. Ren-Guey Lee, Tsung-Yu Lee, Yi-Hua Chen (2015, Feb). Applications of Wearable Device in Assessment of Music Affecting on Hear Rate Recovery after Exercise. SEMBA-2015 (Symposium on Engineering, Medical and Biology Applications, Taiwan. 本人為第一作者、通訊作者.
5. Ren-Guey Lee, Wei-Che Hung and Hui-Chia Kuo (2015, Feb). Development and Assessment of Instant Gesture Recognition Algorithm Based on Wearable Device. SEMBA-2015 (Symposium on Engineering, Medical and Biology Applications, Taiwan. 本人為第一作者、通訊作者.
6. Tsung-Yu Lee, Sheng-Chung Tien, Ren-Guey Lee,Robert Lin, and Wei-Hua Su (2013, Oct). An

Accelerating 3D Image Reconstruction System Based on the Level-of-Detail Algorithm . 4th Software Engineering & Applications-SEA2013, Phuket, Thailand. 本人為通訊作者.

7. Sheng-Chung Tien, Ren-Guey Lee, Hsien Chung Liu and Tsung-Yu Lee (2013, May). Design and Implementation of Real-Time Behavior Identification and Assessment System. 2013 International Conference on Biological, Medical and Chemical Engineering (BMCE 2013). 本人為通訊作者.
8. Sheng-Chung Tien, Ren-Guey Lee, Shiang-You Luo, and Tsung-Yu Lee (2013, May). Design and Implementation of Location-Free Fall Detection System Based on Smart Phone. 2013 International Conference on Biological, Medical and Chemical Engineering (BMCE 2013), HongKong. 本人為通訊作者.
9. Tsang-Chu Yu, Chung-Chih Lin, Ren-Guey Lee, Chao-Heng Tseng, Shi-Ping Liu (2012, May). Wireless Sensing System for Prediction Indoor Air Quality. 2012 4th International High Speed Intelligent Communication, Nanjing, China.
10. Yu-Chuan, Chung-Chih Lin, Chun-Chang Chen, and Ren-Guey Lee (2011, Jul). A Home-Based Frailty Detection System using Wireless Sensor Technology with Multimedia Interactive Games. 2011 Fifth FTRA International Conference on Multimedia and Ubiquitous Engineering.
11. Robert Lin, Joe-Air Jiang,Ren-Guey Lee, Chwan-Lu Tseng, and Ming-Feng Yeh (2011, Apr). The Application of Relational Analysis for Sleep Apnea Syndrome Recognize Testing . Proceedings of the 5th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering, Japan. 12. Tsang-Jyu You, Wei-Lun Lee, Chung-Chih Lin, Ren-Guey Lee, Chao-Heng Tseng, and Shi-Ping Liu (2011, Jan). Wireless Sensor Used in Indoor Air Quality Monitoring System. Proceedings of the First International Symposium on Bioengineering, Taiwan.

(c)專利

年度	專利名稱	專利權人	類型	國別	發明人
101	具防水功能之心率量測器結構	觀微科技公司	新型	ROC	陳正然、李仁貴等人
102	身體功能退化指標量測系統	林仲志	發明	ROC	林仲志、李仁貴等人
102	具有保暖及電刺激效果之護具	觀微科技公司	新型	ROC	陳正然、李仁貴
103	無壓脈帶式血壓量測裝置	動心醫電公司	新型	ROC	李仁貴

				大陸	
103	具有生理訊息量測的耳道式揚聲裝置	動心醫電公司	新型	ROC 大陸 德國	李仁貴
103	健康管理腰帶	動心醫電公司	新型	ROC	林俊慧、李嘉華、林啟瑞、李仁貴

(d)技術移轉

年度	技轉名稱	技轉金額	授權機構/公司行號
102	Dynamic Bio-signal measurement and analysis	NTD270 萬元	Cheng Uei Precision Industry Co., Ltd.
103	智慧型穿戴式裝置關鍵技術	NTD500 萬元	動心醫電股份有限公司
103	智慧型穿戴式裝置關鍵技術	NTD 90 萬元	仁寶電腦工業股份有限公司
103	光學式感測器應用於血壓及血氧量測演算法	NTD 90 萬元	正崴精密股份有限公司
103	具有 WiFi/BLE 通訊能力之 LED 智慧燈具開發	NTD180 萬元	晶元光電股份有限公司

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

劉玉蓀 教授

實驗 (研究) 室名稱： 無線區域網路實驗室
聯絡電話： 本校分機 2276
e-mail： ysliu@ntut.edu.tw
網址： ntut.edu.tw/~ysliu

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：

1. 通訊理論	2. WiMAX	3. DVB-T/H	4. 無線區域網路

1.近年重要論文及著述

(a)期刊論文

[1] Yu-Sun Liu and Yao-Yu Tsai, 2011, September, "Minimum decoding trellis length and truncation depth of wrap-around Viterbi algorithm for TBCC in mobile WiMAX," *EURASIP Journal on Wireless Communications and networking 2011*, 2011:111.

[2] Yu-Sun Liu, 2012, February, "Diversity-Combining and Error-Correction Coding for FFH/MFSK Systems over Rayleigh Fading Channels under Multitone Jamming," *IEEE Transactions on Wireless Communications,* vol. 11, no. 2, pp. 771-779.

[3] S.D. You, K.-Y. Chen, Y.-S. Liu, 2012, December, "Cubic convolution interpolation function with variable coefficients and its application to channel estimation for IEEE 802.16 initial downlink," *IET Communications*, vol. 6, no. 13, pp. 1979-1987.

[4] Yu-Sun Liu, Shingchern D. You, Reui-kai Wu, 2013, June, "Burst allocation method to enable decision-directed channel estimation for mobile WiMAX downlink transmission," *EURASIP Journal on Wireless Communications and networking 2013*, 2013:153.

(b)研討會論文

[1] 簡銷呈, 劉玉蓀, 洪啟超（2011 年 11 月）。移動式 WiMAX 系統中使用遞增冗餘尾端迴旋碼之 HARQ 機制。2011 年全國電信研討會，花蓮。

[2] 鄧閔仁, 劉玉蓀, 潘信嘉（2011 年 11 月）。新 DVB-H 接收端鏈結層演算法。2011 年全國電信研討會，花蓮。

[3] Yu-Sun Liu, Reui-Kai Wu, Shingchern You, 2012, "Channel estimation methods for

WiMAX DL transmission," Proceedings of APWCS 2012, Kyoto, Japan, Aug. 2012.

(g) 研發與產學合作計畫

[1] 嵌入式 DVB-H 接收系統之開發－子計畫三:DVB-H 資料鏈結層軟體之開發(I)，國科會計畫，主持人, 2009/08 ~ 2010/07

[2] 嵌入式 DVB-H 接收系統之開發－子計畫三:DVB-H 資料鏈結層軟體之開發(II)，國科會計畫，主持人, 20010/08 ~ 2011/07

[3] 以 OFDM 調變之軟式解碼快速跳頻展頻-MFSK 通訊系統在敵意訊號干擾下的效能，國科會計畫，主持人, 2011/08 ~ 2012/07

[4] 以 OFDM 調變之軟式解碼跳頻展頻通訊系統在敵意訊號干擾下的效能，國科會計畫，主持人, 2012/08 ~ 2013/07

[5] 軟式編解碼在跳頻展頻-MFSK 通訊系統中抵抗敵意干擾的效能，國科會計畫，主持人, 2013/08 ~ 2014/07

(h) 獎項與榮譽

[1] DVB-H 軟體榮獲 99 年國科會自由軟體暨嵌入式系統計畫績優團隊獎

[2] 指導學生獲得"2010 開放原始碼創新應用大賽"學生組優等獎

(i) 其他成果展示

[1] "99 年自由軟體暨嵌入式系統計畫成果展"(從 100 年 9/1 到 9/2 舉行) 展覽

[2] 台北世貿參加"2011 台北國際發明暨技術交易展－國科會科技創新館"的展示(從 100 年 10/1 到 10/2)。

[3] 協辦 2014 消息理論及通訊秋季研討會暨科技部成果發表會

其他表現

[1] 完成可以在手機及平板電腦上的 Android 平台執行的 DVB-H 接收軟體

[2] 完成 WiMAX 系統下行傳輸的完整模擬平台

曾恕銘 教授

實驗 (研究) 室名稱：傳輸技術實驗室

聯絡電話：(02)27712171 ext 2216

e-mail：shuming@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~shuming/

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長：1. 無線通訊 2. MIMO/OFDM 3. 合作式通訊 4. 排隊理論分析

1.近年重要論文及著述

(a) 期刊論文

A1. Shu-Ming Tseng*, Chun-Wei Hsu, and Yung-Chung Wang, "Simpler throughput analysis of CDMA/Unslotted ALOHA radio networks with variable message length based on M/M/inf queueing model," *Wireless Personal Communications*, vol. 53, no. 2, pp.153-162, April 2010. (NSC 95-2221-E-027-019) [SCI].

A2. Shu-Ming Tseng*, Yu-Chin Kuo, *and* Yueh-Teng Hsu, "A Division-Free (255, k) RS Code Syndrome Computation Scheme for PC-based DVB-T Software Radio Implementation," *ICIC Express Letters, Part B: Applications*, vol. 2, no. 4, pp.805-808, Aug. 2011. (NSC 96-2622-E-027-015-CC3) [EI]

A3. Shu-Ming Tseng*, Jian-Cheng Yu, and Tai-Yo Lau, "Comprehensive Performance Comparison of IDMA and DS-CDMA" *ICIC Express Letters, Part B: Applications*, vol. 2, no. 4, pp.853-858, Aug. 2011. (NSC 97-2221-E-027 -054) [EI]

A4. Shu-Ming Tseng* and Yu-Shun Huang, "A Novel ICI self-cancellation scheme for OFDM systems," *International Journal of Communication Systems*, vol. 24, no. 11, pp. 1496-1505, 2011. (NSC 98-2221-E-027-038 -MY2 and NTUT 100-140-03) [SCI]

A5. Shu-Ming Tseng*, Yueh-Teng Hsu, and Yi-Rung Peng, "Iterative Multicarrier Detector and LDPC Decoder for OFDM Systems," *WSEAS Trans. Commun.*, vol. 11, no.3, pp.124-134, March 2012. [EI]

A6. Shu-Ming Tseng*, Yueh-Teng Hsu, and Jheng-Zong Shih, "Reed-Solomon Decoder Optimization for PC-Based DVB-T Software Radio Receiver, " *Information-An International Interdisciplinary Journal*, vol. 15, no. 8, pp.3485-3498, Aug. 2012. (NSC 96-2622-E-027-015-CC3 and NSC 100-2221-E-027-059) [SCI]

A7. Shu-Ming Tseng* and Yung-Chung Wang, "Throughput of DS CDMA/unslotted ALOHA Radio Networks with Markovian Arrival Processes, "*International Journal of Communication Systems*, vol. 26, pp. 369-379, March 2013. (NSC 98-2221-E-027-038-MY2 and NSC 95-2221-E-027-019) [SCI]

A8. Shu-Ming Tseng*, Yueh-Teng Hsu, and Hong-King Lin, "Iterative Channel Decoding for PC-Based Software Radio DVB-T Receiver, "*Wireless Personal Communications*, vol. 69, no. 1, pp. 403-411, March 2013. (NSC 96-2622-E-027-015-CC3) [SCI]

A9. Shu-Ming Tseng, Jian-Cheng Yu, and Yueh-Teng Hsu, "A real-time PC based software radio DVB-T receiver, " *WSEAS Trans. Commun.*, vol. 12, no. 6, pp. 281-286, June 2013. [EI]

A10. Shu-Ming Tseng, Hung-Pin Lin, Chih-Hao Chen, and Yung-Chung Wang, "Throughput Analysis of DS CDMA/unslotted ALOHA Wireless Networks with Fixed Packet Length in Rayleigh Fading Finite-State Markov Channel Model," *Wireless Personal Communications*, vol. 71, no. 4, pp. 3091-3104, Aug. 2013. (NSC 95-2221-E-027-019) [SCI]

A11. Shu-Ming Tseng and Shih-Han Wang, "Distributed Quasi-Orthogonal Space Time Block Code for Four Transmit Antennas with Information Exchange Error Mitigation," *KSII Transactions on Internet and Information Systems*, vol.7, no.10, pp. 2411-2429, Oct. 2013 . (NSC 101-2221-E-027-106) [SCI]

A12. Shu-Ming Tseng, "Relay-Assisted Distributed Hybrid MIMO Transceiver with Information Exchange Errors for Cooperative Networks," *WSEAS Trans. Commun.*, vol. 12, no. 10, pp. 519-529, Oct. 2013. (NSC 100-2221-E-027-059) [EI].

A13. Shu-Ming Tseng* and Che-Ying Liao, "Distributed Orthogonal and Quasi-Orthogonal Space–Time Block Code with Embedded AAF/DAF Matrix Elements in Wireless Relay Networks with Four Relays," *Wireless Personal Communications*, vol. 75, no. 2, pp 1187-1198, March 2014. (NSC 101-2221-E-027-106) [SCI]

A14. Yueh-Teng Hsu, Chun-Chieh Chen and Shu-Ming Tseng*, "GPU-Accelerated Single Image Depth Estimation with Color-Filtered Aperture," *KSII Transactions on Internet and Information Systems*, vol. 8. no. 3, pp. 1058-1070, Mar. 2014. [SCI]

A15. Shu-Ming Tseng*, Li-Hsin Chiang, and Yung-Chung Wang, "Throughput of Coded DS CDMA/Unslotted ALOHA Networks with Variable Length Data Traffic and Two User Classes in Rayleigh Fading FSMC Model," *KSII Transactions on Internet and Information Systems*, vol. 8, no. 12, pp. 4324 – 4342, Dec. 2014. (NSC 98-2221-E-027-038-MY2) [SCI]

(b) 專利

獲得 2 項國內發明專利-應用於軟體無線電解碼器之特徵值快速計算方法(專利號碼 I 362186) 和 運用多重簽名序列之分碼多重進接系統(專利號碼 91121634)。

1. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

近五年內最具代表性之學理創新

- Shu-Ming Tseng*,Te-Lun Lee, Yo-Chain Ho, and Der-Feng Tseng, "Distributed Space-Time Block Codes with Embedded Adaptive AAF/DAF Elements and Opportunistic Listening for Multihop Power Line Communication Networks, " *International Journal of Communication Systems*, accepted. (MOST 103-2918-I-027-002) [SCI]

- Shu-Ming Tseng*, Li-Hsin Chiang, and Yung-Chung Wang, "Throughput of Coded DS CDMA/Unslotted ALOHA Networks with Variable Length Data Traffic and Two User Classes in Rayleigh Fading FSMC Model," *KSII Transactions on Internet and Information Systems*, vol. 8, no. 12, pp. 4324 - 4342, Dec. 2014. (NSC 98-2221-E-027-038-MY2) [SCI]
- Shu-Ming Tseng and Shih-Han Wang, "Distributed Quasi-Orthogonal Space Time Block Code for Four Transmit Antennas with Information Exchange Error Mitigation," *KSII Transactions on Internet and Information Systems*, vol. 7, no. 10, pp. 2411-2429, Oct. 2013. (NSC 101-2221-E-027-106) [SCI]
- Shu-Ming Tseng and Yung-Chung Wang, "Throughput of DS CDMA/unslotted ALOHA Radio Networks with Markovian Arrival Processes, "*International Journal of Communication Systems*, vol. 26, pp. 369-379, March 2013. (NSC 98-2221-E-027-038-MY2 and NSC 95-2221-E-027-019) [SCI]
- Shu-Ming Tseng* and Yu-Shun Huang, "A Novel ICI self-cancellation scheme for OFDM systems," *International Journal of Communication Systems*, vol. 24, no. 11, pp. 1496-1505, 2011. (NSC 98-2221-E-027-038 -MY2 and NTUT 100-140-03) [SCI]

科技部計畫(擔任主持人)

年度	學門分類	計畫名稱	核定經費(新台幣)
103	補助科學與技術人員國外短期研究	電力線通訊中有限回授的高碼率空時碼設計	426,650
101	通訊	考慮訊息交換錯誤的分散式半正交空時區塊碼之編碼矩陣設計和效能分析	660,000
100	通訊	合作式通訊網路中考慮訊息交換錯誤的分散式 Hybrid MIMO Transceiver Scheme	501,000
98-99	通訊	結合可調性調變編碼及功率變化和 truncated ARQ 的跨層頻譜效率最佳化	1,527,000

協助產業發展績效方面:

和聯發光電(之前在光寶科技術研發中心)的許躍騰(Yueh-Teng Hsu)協理合作，發展 PC 上的 DVB-T2 軟題無線電平台，及單鏡頭景深估計加速技術，發表:

- Yueh-Teng Hsu, Chun-Chieh Chen and Shu-Ming Tseng*, "GPU-Accelerated Single Image Depth Estimation with Color-Filtered Aperture," *KSII Transactions on Internet and Information Systems*, vol. 8. no. 3, pp. 1058-1070, Mar. 2014. [SCI]

- Shu-Ming Tseng*, Yueh-Teng Hsu, and Hong-King Lin, “Iterative Channel Decoding for PC-Based Software Radio DVB-T Receiver, “*Wireless Personal Communications*, vol. 69, no. 1, pp. 403-411, March 2013. (NSC 96-2622-E-027-015-CC3) [SCI]

人才培育、研究團隊建立方面:

- 敝人實驗室主要專注於培養具通訊基頻技術和OFDM軟體無線電接收機設計專才之研究人力。迄今已培育2位在職博士班研究生、45位碩士班研究生、7位碩士在職專班研究生畢業。目前實驗室人力包括2位在職博士班研究生、7位碩士班研究生、2位碩士在職專班研究生。
- 指導碩士班學生林宏坤、汪師韓(2011 畢業)參加 2010 通訊大賽(Android 使用者介面設計競賽) 榮獲優等獎。

服務方面:

- Editor for KSII Transactions on Internet and Information Systems, indexed in SCI
- 擔任經濟部工合小組審查委員

黃育賢 教授

實驗 (研究) 室名稱：類比積體電路設計實驗室

聯絡電話：(02)2771 2171 ext. 2201

e-mail：yshwang@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~ yshwang /

研究聚焦領域：■ H：健康科技　■ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長：1. Analog IC　2. Power IC　3. Mixed-signal IC　4. Microelectronic Circuit

1.近年重要論文及著述

(a) 期刊論文

1. **Yuh-Shyan Hwang**, Yi-Tsen Ku, An Liu, Chia-Hsuan Chen, and Jiann-Jong Chen," A New Efficiency- Improvement Low-Ripple Charge-Pump Boost Converter Using Adaptive Slope Generator with Hysteresis Voltage Comparison Techniques," *IEEE Trans. on Very Large Scale Integration (VLSI) Systems*, 2014. (SCI, EI) (Accepted)
2. **Yuh-Shyan Hwang**, An Liu, Yi-Tsen Ku, Yuan-Bo Chang, and Jiann-Jong Chen," A Fast Transient Response Flying-Capacitor Buck-Boost Converter Utilizing Pseudo-Current Dynamic Acceleration Techniques," *IEEE Trans. on Very Large Scale Integration (VLSI) Systems*, 2014. (SCI, EI) (Accepted)
3. **Yuh-Shyan Hwang**, An Liu, Yuan-Bo Chang, and Jiann-Jong Chen," A High-Efficiency Fast-Transient-Response Buck Converter with Analog-Voltage-Dynamic-Estimation Techniques," *IEEE Trans. on Power Electronics*, Vol. 30, No. 7, pp. 3720-3730, July. 2015. (SCI, EI)
4. **Yuh-Shyan Hwang**, Chia-Cheng Lei, Yao-Wei Yang, Jiann-Jong Chen, and Cheng-Chieh Yu," A 13.56 MHz Low-Voltage and Low-Control-Loss RF-DC Rectifier Utilizing Reducing Reverse Loss Technique," *IEEE Trans. on Power Electronics*, Vol. 29, No. 12, pp. 6544-6554, Dec. 2014. (SCI, EI)
5. **Yuh-Shyan Hwang**, Hsaio-Hsing Chou, Yuan-Bo Chang, and Jiann-Jong Chen, " A High-Efficiency DC-DC Converter with Wide Output Range using Switched-Capacitor Front End Techniques,"*IEEE Trans. on Industrial Electronics*, Vol. 61, No. 5, pp. 2244-2251, May. 2014. (SCI, EI)
6. **Yuh-Shyan Hwang**, An Liu, Chia-Hsuan Chen, Yi-Tsen Ku, Jiann-Jong Chen, and Cheng-Chieh Yu," A Continuous Conduction Mode Low-Ripple High-Efficiency Charge-Pump Boost Converter,"*Analog Integrated Circuits and Signal Processing*, Vol. 79, no. 2, pp. 355-369, May. 2014. (SCI, EI)
7. **Yuh-Shyan Hwang**, Jian-Hong Shen, Jiann-Jong Chen, and Ming-Ren Fan," A THD-Reduction High- Efficiency Audio Amplifier Using Inverter-Based OTAs with Filter-Output Feedback,"*Microelectronics Journal*, Vol. 45, No. 1, pp. 102-109, Jan. 2014. (SCI, EI)
8. Jiann-Jong Chen, Jui-Hsuan Hsu, **Yuh-Shyan Hwang**, and Cheng-Chieh Yu," A DC-DC Buck Converter with Load-Regulation Improvement Using Dual-Path-Feedback Techniques," *Analog Integrated Circuits and Signal Processing*, Vol. 79, no. 1, pp. 149-159, Apr. 2014. (SCI, EI)

9. C.-H. Chou, **Y.-S. Hwang**, C.-C. Chen, S.-C. Chen, C.-H. Lai, and Y.-L. Chen," FES for abnormal movement of upper limb during walking in post-stroke subjects," *Technology and Health Care*, Vol. 22, No. 5, pp. 751-758, Nov. 2014. (SCI)
10. Hsaio-Hsing Chou, **Yuh-Shyan Hwang**, and Jiann-Jong Chen," An Adaptive Output Current Estimation Circuit for Primary-Side Controlled LED Driver," *IEEE Trans. on Power Electronics*, Vol. 28, No. 10, pp. 4811-4819, Oct. 2013. (SCI, EI)
11. **Yuh-Shyan Hwang**, Bo-Han Hwang, Ho-Cheng Lin, and Jiann-Jong Chen," PLL-Based Contactless Energy Transfer Analog FSK Demodulator Using High Efficiency Rectifier," *IEEE Trans. on Industrial Electronics*, Vol. 60, No. 1, pp. 280-290, Jan. 2013. (SCI, EI)
12. Jiann-Jong Chen, Pin-Nan Shen, and **Yuh-Shyan Hwang**," A High-Efficiency Positive Buck-Boost Converter with Mode-Select-Circuit and Feed-Forward Techniques," *IEEE Trans. on Power Electronics*, Vol. 28, No. 9, pp. 4240-4247, Sept. 2013. (SCI, EI)
13. Jiann-Jong Chen, Ming-Xiang Lu, Tse-Hsu Wu, and **Yuh-Shyan Hwang**," Sub-1-V Fast-Response Hysteresis-Controlled CMOS Buck Converter Using Adaptive Ramp Techniques," *IEEE Trans. on Very Large Scale Integration (VLSI) Systems*, Vol. 21, No. 9, pp. 1608-1618, Sept. 2013. (SCI, EI)
14. **Yuh-Shyan Hwang**, Jian-Hong Shen, and Jiann-Jong Chen," A high-efficiency fast-transient-response V^2-controlled boost converter with small ESR capacitor," *IET Electronics Letters*, Vol. 49, No. 22, pp. 1402-1404, Oct. 2013. (SCI, EI)
15. **Yuh-Shyan Hwang**, Jian-Hong Shen, Jiann-Jong Chen, and Ming-Ren Fan," Performance Comparison of Integrated Fully-Differential Filterless Class-D Amplifiers with Different Feedback Techniques," *Analog Integrated Circuits and Signal Processing*, Vol. 76, no. 2, pp. 167-177, Aug. 2013. (SCI, EI)
16. **Yuh-Shyan Hwang**, An Liu, San-Fu Wang, Ssu-Che Yang, and Jiann-Jong Chen," A tunable Butterworth low-pass filter with digitally controlled DDCC," *Radioengineering Journal*, Vol. 22, No. 2, pp. 511-517, June 2013. (SCI)
17. **Yuh-Shyan Hwang**, Yi-Tsen Ku, Jiann-Jong Chen, and Cheng-Chieh Yu," Inverter-Based Low-Voltage CCII- Design and Its Filter Application," *Radioengineering Journal*, Vol. 22, No. 4, pp. 1026-1033, Dec. 2013. (SCI)
18. **Yuh-Shyan Hwang**, Yi-Tsen Ku, Jiann-Jong Chen, and San-Fu Wang," A low-voltage current conveyor using inverter-based error amplifier and its oscillator application," *IEICE Electronics Express*,Vol. 10, No. 24, pp. 1-7, Dec. 2013. (SCI)
19. Jiann-Jong Chen, Bo-Han Hwang, Yan-Chong Jhang, **Yuh-Shyan Hwang**, and Cheng-Chieh Yu," A New Fast-Response Buck Converter Using Accelerated Pulse-Width-Modulation Techniques,"*International Journal of Circuit Theory and Applications*, Vol. 41, No. 8, pp. 854-865, Aug. 2013. (SCI, EI)
20. Yi-Hsiang Tseng, Chung-Cheng Chen, Chung-Huo Lin, and **Yuh-Shyan Hwang**," Tracking controller design for diving behavior of an unmanned underwater vehicle," *Mathematical Problems in Engineering*, Vol. 2013, paper ID: 504541, Mar. 2013. (SCI)
21. **Y.-S. Hwang**, S.-C. Chen, C.-C. Chen, W.-L. Chen, Y.-Y. Shih, and Y.-L. Chen," Development of digitized apparatus for upper limb rehabilitation training," *Technology and Health Care*, Vol. 21, No. 6, pp. 571-579, Dec. 2013. (SCI)

22. Shu-Hui Tu, **Yuh-Shyan Hwang**, Jiann-Jong Chen, Ahmed M. Soliman, and Chun-Ming Chang," OTA-C Arbitrary-Phase-Shift Oscillators," *IEEE Trans. on Instrument ation and Measurement*, Vol. 61, No. 8, pp. 2305-2319, Aug. 2012. (SCI, EI)
23. **Yuh-Shyan Hwang**, Jian-Hong Shen, Jiann-Jong Chen, Yi-Rong Du, and Cheng-Chieh Yu," Implementation of THD-Reduction Stereo Audio Amplifier Using Compensators and Sigma-Delta Modulators," *Analog Integrated Circuits and Signal Processing*, Vol. 73, no. 1, pp. 243-253, Oct. 2012. (SCI, EI)
24. Jiann-Jong Chen, Bo-Han Hwang, Yao-Ren Guo, **Yuh-Shyan Hwang**, and Cheng-Chieh Yu," A High-Efficient WLED Driver Using Light-Balanced-Controlled Techniques with Current-Locked Loops," *Analog Integrated Circuits and Signal Processing*, Vol. 72, No. 2, pp. 363-373, Aug. 2012. (SCI, EI)
25. Jiann-Jong Chen, Bo-Han Hwang, Jui-Hsuan Hsu, **Yuh-Shyan Hwang**, and Cheng-Chieh Yu," Fast-Response Single-Inductor Dual-Output Hysteresis-Current-Controlled DC-DC Buck Converter,"*Analog Integrated Circuits and Signal Processing*, Vol. 70, No. 3, pp. 405-415, Mar. 2012. (SCI, EI)
26. **Yuh-Shyan Hwang**, Dong-Shiuh Wu, Ho-Cheng Lin, Jiann-Jong Chen, and Cheng-Chieh Yu," A New Inverter-Based Charge Pump Circuit with High Conversion Ratio and High Power Efficiency,"*Microelectronics Journal*, Vol. 42, No. 8, pp. 982-987, Aug. 2011. (SCI, EI)
27. San-Fu Wang, **Yuh-Shyan Hwang**, Shou-Chung Yan, and Jiann-Jong Chen," A New CMOS Wideband Low Noise Amplifier with Gain Control," *Integration - the VLSI Journal*, Vol. 44, No. 2, pp. 136-143, Mar. 2011. (SCI, EI)
28. Jiann-Jong Chen, Che-Min Kung, and **Yuh-Shyan Hwang**," A New Current-Mode Fast-Transient-Response Shunt Regulator Using CMOS Technology," *Analog Integrated Circuits and Signal Processing*, Vol. 66, No. 2, pp. 189-195, Feb. 2011. (SCI, EI)
29. Bo-Han Hwang, Yan-Chong Jhang, Jiann-Jong Chen, and **Yuh-Shyan Hwang**," A Dual-Mode Fast-Transient Average-Current-Mode Buck Converter Without Slope-Compensation," *Microelectronics Journal*, Vol. 42, No. 2, pp. 291-298, Feb. 2011. (SCI, EI)
30. **Yuh-Shyan Hwang**, San-Fu Wang, Shou-Chung Yan, and Jiann-Jong Chen," An Inductorless Wideband Noise-Cancelling CMOS Low Noise Amplifier with Variable-Gain Technique for DTV Tuner Application," *AEU International Journal of Electronics and Communications*, Vol. 64, No. 11, pp. 1009-1014, Nov. 2010. (SCI, EI)
31. **Yuh-Shyan Hwang**, San-Fu Wang, and Jiann-Jong Chen," A Differential Multi-Band CMOS Low Noise Amplifier with Noise Cancellation and Interference Rejection," *AEU International Journal of Electronics and Communications*, Vol. 64, No. 10, pp. 897-903, Oct. 2010. (SCI, EI)
32. Jiann-Jong Chen, Bo-Han Hwang, and **Yuh-Shyan Hwang**," A Dual-Loop Shunt Regulator Using Current-Sensing Feedback Techniques," *Microelectronics Journal*, Vol. 41, No. 12, pp. 840-844, Dec. 2010. (SCI, EI)
33. **Yuh-Shyan Hwang** and Ho-Cheng Lin," A New CMOS Analog Front End for RFID Tags," *IEEE Trans. on Industrial Electronics*, Vol. 56, No. 7, pp. 2299-2307, July 2009. (SCI, EI)
34. **Yuh-Shyan Hwang**, Che-Min Kung, Ho-Cheng Lin, and Jiann-Jong Chen," Low-Sensitivity, Low-Bounce, High-Linearity Current-Controlled Oscillator Suitable for Single-Supply Mixed-Mode

Instrumentation System," *IEEE Trans. on Ultrasonics, Ferroelectrics, and Frequency Control*, Vol. 56, No. 2, pp. 254-262, Feb. 2009. (SCI, EI)

35. Jiann-Jong Chen, Fong-Cheng Yang, Chien-Chih Lai, **Yuh-Shyan Hwang**, and Ren-Guey Lee," A High-Efficiency Multimode Li-Ion Battery Charger With Variable Current Source and Controlling Previous-stage Supply Voltage," *IEEE Trans. on Industrial Electronics*, Vol. 56, No. 7, pp. 2469-2478, July 2009. (SCI, EI)
36. Jiann-Jong Chen, Ho-Cheng Lin, Che-Min Kung, **Yuh-Shyan Hwang**, and Juing-Huei Su," Integrated Class-D Amplifier with Active Current Sensing Suitable for Alternating Current Switches," *IEEE Trans. on Industrial Electronics*, Vol. 55, No. 8, pp. 3141-3149, Aug. 2008. (SCI, EI)
37. **Yuh-Shyan Hwang**, Shu-Chen Wang, Fong-Cheng Yang, and Jiann-Jong Chen," New Compact CMOS Li-Ion Battery Charger Using Charge-Pump Technique for Portable Applications," *IEEE Trans. on Circuits and Systems - part I: Regular papers*, Vol. 54, No. 4, pp. 705-712, Apr. 2007. (SCI, EI)

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

近五年內之主要研究成果包括國外期刊論文共 32 篇，國內外研討會論文共 36 篇。計畫主持人並時常擔任國內外知名 IEEE 及其他 SCI 期刊之 reviewer，目前擔任 *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*、*IEEE Transactions on Circuits and Systems- part II* 及 *IEEE Access* online mega-journal 之 Associate Editor，並擔任 *Active and Passive Electronic Components*、*Journal of Engineering*、*Far East Journal of Electronics and Communications* 以及 *ISRN Electronics* 等 International Journal 之 Editorial Board，並為 *VLSI Design/CAD Symposium* 之 Technical Program Committee Member，國科會/科技部微電子學門複審委員，以及教育部智慧電子應用設計聯盟之召集人，貢獻所學。

陳建中 教授

實驗 (研究) 室名稱：電源轉換積體電路設計實驗室

聯絡電話：2244，2240 或 2255

e-mail：jjchen@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~enlab206/index.htm

研究聚焦領域：□ H：健康科技　□ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長：1. 積體電路設計 2. 電源轉換 3. 電力電子 4. 訊號處理

1.近年重要論文及著述

(a) 期刊論文

1. Yuh-Shyan Hwang, Yi-Tsen Ku, An Liu, Chia-Hsuan Chen, and Jiann-Jong Chen," A New Efficiency-Improvement Low-Ripple Charge-Pump Boost Converter Using Adaptive Slope Generator with Hysteresis Voltage Comparison Techniques," IEEE Trans. on Very Large Scale Integration (VLSI) Systems, 2014. (SCI, EI) (Accepted)
2. Yuh-Shyan Hwang, An Liu, Yi-Tsen Ku, Yuan-Bo Chang, and Jiann-Jong Chen," A Fast Transient Response Flying-Capacitor Buck-Boost Converter Utilizing Pseudo-Current Dynamic Acceleration Techniques," IEEE Trans. on Very Large Scale Integration (VLSI) Systems, 2014. (SCI, EI) (Accepted)
3. Yuh-Shyan Hwang, An Liu, Yuan-Bo Chang, and Jiann-Jong Chen," A High-Efficiency Fast-Transient-Response Buck Converter with Analog-Voltage-Dynamic-Estimation Techniques," IEEE Trans. on Power Electronics, Vol. 30, No. 7, pp. 3720-3730, July. 2015. (SCI, EI)
4. Yuh-Shyan Hwang, Chia-Cheng Lei, Yao-Wei Yang, Jiann-Jong Chen, and Cheng-Chieh Yu," A 13.56 MHz Low-Voltage and Low-Control-Loss RF-DC Rectifier Utilizing Reducing Reverse Loss Technique," IEEE Trans. on Power Electronics, Vol. 29, No. 12, pp. 6544-6554, Dec. 2014. (SCI, EI)

5. Yuh-Shyan Hwang, Hsaio-Hsing Chou, Yuan-Bo Chang, and Jiann-Jong Chen, " A High-Efficiency DC-DC Converter with Wide Output Range using Switched-Capacitor Front End Techniques," IEEE Trans. on Industrial Electronics, Vol. 61, No. 5, pp. 2244-2251, May. 2014. (SCI, EI)
6. Yuh-Shyan Hwang, An Liu, Chia-Hsuan Chen, Yi-Tsen Ku, Jiann-Jong Chen, and Cheng-Chieh Yu," A Continuous Conduction Mode Low-Ripple High-Efficiency Charge-Pump Boost Converter," Analog Integrated Circuits and Signal Processing, Vol. 79, no. 2, pp. 355-369, May. 2014. (SCI, EI)
7. Yuh-Shyan Hwang, Jian-Hong Shen, Jiann-Jong Chen, and Ming-Ren Fan," A THD-Reduction High-Efficiency Audio Amplifier Using Inverter-Based OTAs with Filter-Output Feedback," Microelectronics Journal, Vol. 45, No. 1, pp. 102-109, Jan. 2014. (SCI, EI)
8. Jiann-Jong Chen, Jui-Hsuan Hsu, Yuh-Shyan Hwang, and Cheng-Chieh Yu," A DC-DC Buck Converter with Load-Regulation Improvement Using Dual-Path-Feedback Techniques," Analog Integrated Circuits and Signal Processing, Vol. 79, no. 1, pp. 149-159, Apr. 2014. (SCI, EI)

9. Hsaio-Hsing Chou, Yuh-Shyan Hwang, and Jiann-Jong Chen," An Adaptive Output Current Estimation Circuit for Primary-Side Controlled LED Driver," IEEE Trans. on Power Electronics, Vol. 28, No. 10, pp. 4811-4819, Oct. 2013. (SCI, EI)
10. Yuh-Shyan Hwang, Bo-Han Hwang, Ho-Cheng Lin, and Jiann-Jong Chen," PLL-Based Contactless Energy Transfer Analog FSK Demodulator Using High Efficiency Rectifier," IEEE Trans. on Industrial Electronics, Vol. 60, No. 1, pp. 280-290, Jan. 2013. (SCI, EI)
11. Jiann-Jong Chen, Pin-Nan Shen, and Yuh-Shyan Hwang," A High-Efficiency Positive Buck-Boost Converter with Mode-Select-Circuit and Feed-Forward Techniques," IEEE Trans. on Power Electronics, Vol. 28, No. 9, pp. 4240-4247, Sept. 2013. (SCI, EI)
12. Jiann-Jong Chen, Ming-Xiang Lu, Tse-Hsu Wu, and Yuh-Shyan Hwang," Sub-1-V Fast-Response Hysteresis-Controlled CMOS Buck Converter Using Adaptive Ramp Techniques," IEEE Trans. on Very Large Scale Integration (VLSI) Systems, Vol. 21, No. 9, pp. 1608-1618, Sept. 2013. (SCI, EI)
13. Yuh-Shyan Hwang, Jian-Hong Shen, and Jiann-Jong Chen," A high-efficiency fast-transient-response V2-controlled boost converter with small ESR capacitor," IET Electronics Letters, Vol. 49, No. 22, pp. 1402-1404, Oct. 2013. (SCI, EI)
14. Yuh-Shyan Hwang, Jian-Hong Shen, Jiann-Jong Chen, and Ming-Ren Fan," Performance Comparison of Integrated Fully-Differential Filterless Class-D Amplifiers with Different Feedback Techniques," Analog Integrated Circuits and Signal Processing, Vol. 76, no. 2, pp. 167-177, Aug. 2013. (SCI, EI)
15. Yuh-Shyan Hwang, An Liu, San-Fu Wang, Ssu-Che Yang, and Jiann-Jong Chen," A tunable Butterworth low-pass filter with digitally controlled DDCC," Radioengineering Journal, Vol. 22, No. 2, pp. 511-517, June 2013. (SCI)
16. Yuh-Shyan Hwang, Yi-Tsen Ku, Jiann-Jong Chen, and Cheng-Chieh Yu," Inverter-Based Low-Voltage CCII- Design and Its Filter Application," Radioengineering Journal, Vol. 22, No. 4, pp. 1026-1033, Dec. 2013. (SCI)
17. Yuh-Shyan Hwang, Yi-Tsen Ku, Jiann-Jong Chen, and San-Fu Wang," A low-voltage current conveyor using inverter-based error amplifier and its oscillator application," IEICE Electronics Express, Vol. 10, No. 24, pp. 1-7, Dec. 2013. (SCI)
18. Jiann-Jong Chen, Bo-Han Hwang, Yan-Chong Jhang, Yuh-Shyan Hwang, and Cheng-Chieh Yu," A New Fast-Response Buck Converter Using Accelerated Pulse-Width-Modulation Techniques," International Journal of Circuit Theory and Applications, Vol. 41, No. 8, pp. 854-865, Aug. 2013. (SCI, EI)
19. Yi-Hsiang Tseng, Chung-Cheng Chen, Chung-Huo Lin, and Yuh-Shyan Hwang," Tracking controller design for diving behavior of an unmanned underwater vehicle," Mathematical Problems in Engineering, Vol. 2013, paper ID: 504541, Mar. 2013. (SCI)
20. Y.-S. Hwang, S.-C. Chen, C.-C. Chen, W.-L. Chen, Y.-Y. Shih, and Y.-L. Chen," Development of digitized apparatus for upper limb rehabilitation training," Technology and Health Care, Vol. 21, No. 6, pp. 571-579, Dec. 2013. (SCI)
21. Shu-Hui Tu, Yuh-Shyan Hwang, Jiann-Jong Chen, Ahmed M. Soliman, and Chun-Ming Chang," OTA-C Arbitrary-Phase-Shift Oscillators," IEEE Trans. on Instrumentation and Measurement, Vol. 61, No. 8, pp. 2305-2319, Aug. 2012. (SCI, EI)
22. Yuh-Shyan Hwang, Jian-Hong Shen, Jiann-Jong Chen, Yi-Rong Du, and Cheng-Chieh Yu," Implementation of THD-Reduction Stereo Audio Amplifier Using Compensators and Sigma-Delta Modulators," Analog Integrated Circuits and Signal Processing, Vol. 73, no. 1, pp. 243-253, Oct. 2012. (SCI, EI)
23. Jiann-Jong Chen, Bo-Han Hwang, Yao-Ren Guo, Yuh-Shyan Hwang, and Cheng-Chieh Yu," A High-Efficient WLED Driver Using Light-Balanced-Controlled Techniques with Current-Locked Loops," Analog Integrated Circuits and Signal Processing, Vol. 72, No. 2, pp. 363-373, Aug. 2012.

(SCI, EI)

24. Jiann-Jong Chen, Bo-Han Hwang, Jui-Hsuan Hsu, Yuh-Shyan Hwang, and Cheng-Chieh Yu," Fast-Response Single-Inductor Dual-Output Hysteresis-Current-Controlled DC-DC Buck Converter," Analog Integrated Circuits and Signal Processing, Vol. 70, No. 3, pp. 405-415, Mar. 2012. (SCI, EI)
25. Yuh-Shyan Hwang, Dong-Shiuh Wu, Ho-Cheng Lin, Jiann-Jong Chen, and Cheng-Chieh Yu," A New Inverter-Based Charge Pump Circuit with High Conversion Ratio and High Power Efficiency," Microelectronics Journal, Vol. 42, No. 8, pp. 982-987, Aug. 2011. (SCI, EI)
26. San-Fu Wang, Yuh-Shyan Hwang, Shou-Chung Yan, and Jiann-Jong Chen," A New CMOS Wideband Low Noise Amplifier with Gain Control," Integration - the VLSI Journal, Vol. 44, No. 2, pp. 136-143, Mar. 2011. (SCI, EI)
27. Jiann-Jong Chen, Che-Min Kung, and Yuh-Shyan Hwang," A New Current-Mode Fast-Transient-Response Shunt Regulator Using CMOS Technology," Analog Integrated Circuits and Signal Processing, Vol. 66, No. 2, pp. 189-195, Feb. 2011. (SCI, EI)
28. Bo-Han Hwang, Yan-Chong Jhang, Jiann-Jong Chen, and Yuh-Shyan Hwang," A Dual-Mode Fast-Transient Average-Current-Mode Buck Converter Without Slope-Compensation," Microelectronics Journal, Vol. 42, No. 2, pp. 291-298, Feb. 2011. (SCI, EI)
29. Yuh-Shyan Hwang, San-Fu Wang, Shou-Chung Yan, and Jiann-Jong Chen," An Inductorless Wideband Noise-Cancelling CMOS Low Noise Amplifier with Variable-Gain Technique for DTV Tuner Application," AEU International Journal of Electronics and Communications, Vol. 64, No. 11, pp. 1009-1014, Nov. 2010. (SCI, EI)
30. Yuh-Shyan Hwang, San-Fu Wang, and Jiann-Jong Chen," A Differential Multi-Band CMOS Low Noise Amplifier with Noise Cancellation and Interference Rejection," AEU International Journal of Electronics and Communications, Vol. 64, No. 10, pp. 897-903, Oct. 2010. (SCI, EI)
31. Jiann-Jong Chen, Bo-Han Hwang, and Yuh-Shyan Hwang," A Dual-Loop Shunt Regulator Using Current-Sensing Feedback Techniques," Microelectronics Journal, Vol. 41, No. 12, pp. 840-844, Dec. 2010. (SCI, EI)

(b) 研討會論文

1. Jiann-Jong Chen, Wei-Ting Hsu, Jih-Hua Yu, Yuh-Shyan Hwang, Cheng-Chieh Yu," A Fast-Transient-Response Buck Converter with Split-Type III Compensation and Charge-Pump Circuit Technique," IEEE International Power Electronics Conference (IPEC), Hiroshima, Japan, May 2014. (EI)
2. Yi-Tsen Ku, An Liu, Yuh-Shyan Hwang, Jiann-Jong Chen," A New Multi-Function Wave Generator Based on Multiple-Output Second-Generation Current Conveyors," IEEE International Conference on Consumer Electronics (ICCE-Taiwan), Taipei, Taiwan, May 2014. (EI)
3. Yi-Tsen Ku, An Liu, Yuh-Shyan Hwang, Jiann-Jong Chen," Inverter-Based Low-Voltage Current Feedback Amplifier," IEEE International Conference on Consumer Electronics (ICCE-Taiwan), Taipei, Taiwan, May 2014. (EI)
4. Chia-Cheng Lei, Jian-Fong Liou, Yuh-Shyan Hwang, Jiann-Jong Chen," A New Driver Scheme for Supply Noise Rejection and Uniformity Enhancement of AMOLED Displays," IEEE International Conference on Consumer Electronics (ICCE-Taiwan), Taipei, Taiwan, May 2014. (EI)
5. Tse-Hsu Wu, Jiann-Jong Chen, Yuh-Shyan Hwang,"A High-Efficiency Hysteresis Buck Converter Using Auto Selectable Frequency - Locked Techniques," IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC), Hongkong, June 2013. (EI)
6. Chang-I Chou, Tse-Hsu Wu, Jiann-Jong Chen, Yuh-Shyan Hwang, Cheng-Chieh Yu,"An Ultra-Low Input Flyback Converter with Wide Conversion Ratio Utilizing Zero-Current Switching

Techniques," IEEE International Conference on Power Electronics and Drive Systems (PEDS), Japan, Apr. 2013. (EI)

7. Hong-Yi Yang, Tse-Hsu Wu, Jiann-Jong Chen, Yuh-Shyan Hwang, Cheng-Chieh Yu,"An Omnipotent Li-Ion Battery Charger with Multi-Mode Controlled Techniques," IEEE International Conference on Power Electronics and Drive Systems (PEDS), Japan, Apr. 2013. (EI)
8. Bo-Han Hwang, Bin-Nan Sheen, Jiann-Jong Chen, Yuh-Shyan Hwang, Cheng-Chieh Yu," A Low-Voltage Positive Buck-Boost Converter Using Average-Current-Controlled Techniques," IEEE International Symposium on Circuits and Systems (ISCAS), pp. 2255-2258, Seoul, Korea, May 2012. (EI)
9. Bo-Han Hwang, Jay-Ann Yo, Jiann-Jong Chen, Yuh-Shyan Hwang, Cheng-Chieh Yu," A Low-Voltage Low-Noise DC-DC Flyback Converter with Delta-Sigma Modulation," IEEE International Symposium on Circuits and Systems (ISCAS), pp. 2251-2254, Seoul, Korea, May 2012. (EI).
10. Chih-Hong Chou, Shih-Hsiang Ciou, Yuh-Shyan Hwang, Chih-Chen Che, Shih-Ching Chen, Yu-Luen Chen," Development of a Human Computer Interface (HCI) based on Tongue Movement," International Conference on Bioinformatics and Biomedical Engineering, Shanghai, China, May 2012. (EI)
11. Chih-Hong Chou, Jyun-Yuan Luo, Chih-Chen Chen, Yuh-Shyan Hwang, Shih-Ching Chen, Sheng-Wen Hong, Ying-Ying Shih, Yu-Luen Chen," The Study of Virtual Reality System in upper Extremity Rehabilitation," International Conference on Cellular, Molecular Biology, Biophysics and Bioengineering, Qiqihar, China, Dec. 2011. (EI)
12. Ho-Cheng Lin, Dong-Shiuh Wu, Che-Min Kung, Yuh-Shyan Hwang, and Jiann-Jong Chen," New CMOS Inverter-Based Voltage Multipliers," IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC), 5C-1, Hongkong, Dec. 2010. (EI)
13. Ming-Xiang Lu, Bo-Han Hwang, Jiann-Jong Chen, and Yuh-Shyan Hwang," A Sub-1V Voltage-Mode DC-DC Buck Converter Using PWM Control Technique," IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC), 1B-2, Hongkong, Dec. 2010. (EI)
14. Jiann-Jong Chen, Chuan-Hong Zheng, and Yuh-Shyan Hwang," A New Single-Inductor Triple-Output Buck Converter Using CMOS Technology," IEEE International Power Electronics Conference (IPEC), pp. 82-85, Sapporo, Japan, June 2010. (EI)
15. Jiann-Jong Chen, Bo-Han Hwang, Che-Min Kung, Wei-Yu Tai, and Yuh-Shyan Hwang," A New Single-Inductor Quadratic Buck Converter Using Average-Current-Mode Control Without Slope-Compensation," IEEE Conference on Industrial Electronics and Applications (ICIEA), pp. 1082-1087, Taiwan, June 2010. (EI)

段裘慶 教授

實驗 (研究) 室名稱：網路應用實驗室(Applied Networks Lab.)

聯絡電話：02-27712171 Ext. 2261

e-mail：cctuan@ntut.edu.tw

網址：http://140.124.72.4/

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技

□ G：綠色科技　□ H：人文與創新元素

專長

1. 行動計算	2. WSN & IoT	3. 生醫資訊處理	4.資料庫系統

1. 近年重要論文及著述

(a) 期刊論文

[1] **C.-C. Tuan** and Y.-C. Wu, "Cluster Fault Data Diagnosis in Wireless Sensor and Actuator Networks," ***Journal of Internet Technology***, Vol. 16, No. 2, pp. 245-254, 2015. (**SCI**/**EI**, IF=0.408, ISSN: 1207-9264)

[2] W.-T. Huang, C.-H. Chen, C.-N. Hung, **C.-C. Tuan**, Y.-J. Chang, "Implementation of a Parallel-Beam Optical-CT Apparatus for Three Dimensional Radiation Dosimetry Using a High-Resolution CCD Camera," *Nuclear Instruments and Methods in Physics Research A*, No. 784, pp. 590-596, Apr. 2015. (**SCI**, IF= 1.316, ISSN: 0168-9002)

[3] W.-T. Huang, C.-N. Hung, S.-Y. Tan, **C.-C. Tuan**, C.-H. Chen, W.-T. Sung, "Exquisite CCD Camera Design for an Optical Computed Tomography Scanner," *Measurement*, Vol. 61, pp. 192-205, Jan. 2015.
(**SCI**, IF= 1.526, ISSN: 0263-2241)

[4] W.-C. Lin, T.-F. Lee, S.-Y. Lin, L.-F. Wu, H.-Y. Wang, L. Chang, J.-M. Wu, J.-C. Jiang, **C.-C. Tuan**, M.-F. Horng, C.-S. Shieh, P.-J. Chao "Non-invasive Knee Osteoarthritis Diagnosis via Vibroarthrographic Signal Analysis," *Journal of Information Hiding and Multimedia Signal Processing*, Vol. 5, No. 3, Jul. 2014.
(**EI**, IF= 0.604, ISSN: 1582-7445)

[5] **C.-C. Tuan** and Y.-C. Wu, "Coverage and Connectivity Aware Clustering Algorithm within *k*-Hops in Wireless Sensor and Actor Networks," *Science China Information Sciences*, Vol. 57, No. 6, Jun. 2014.
(**SCI**/**EI,** IF=0.706, ISSN: 1674-733X, e-ISSN: 1869-1919**)**

[6] W.-T. Huang, S.-Y. Tan, C.-W. Chiou, **C.-C. Tuan**, and C.-H. Chang, "On-line Error Detection in a Polynomial Basis Multiplier over GF(2m) Using Self-Checking Alternating Logic," *Journal of Computers*, Vol. 24, Issue 2, pp. 46-58, 2013. (**EI**, ISSN: 1796-203X)

[7] C.-S. Cheng, S.-W. Lin, and **C.-C. Tuan**, "Grey System Applied to Select Tablet PCs," *International Journal of Advanced Information Technology,* Vol. 7, No.1, pp. 47-50, 2013. (ISSN: 1996-2568)

[8] **C.-C. Tuan** and Y.-C. Wu, "Temporal Event Ordering with Fault Tolerance for Wireless Sensor and Actuator Networks," *Wireless Personal Communications*, Vol. 68, Issue 3, doi: 10.1007/s11277-011-0476-3, pp. 679-695, 2013.
(**SCI**, IF=0.428, ISSN: 1572-834X)

[9] W.-T. Huang, C.-N. Hung, **C.-C. Tuan**, Y.-R. Wen, W.-T. Huang, and C.-H. Chen, "Dynamic

License Plate Localization for Vehicles on Multi-lane Using Single Camera," *Applied Mechanics and Materials*, Vols. 300-301 (2013), pp.740-745, Feb. 2013. (**EI**, ISSN: 1662-7482)

[10] W.-T. Huang, C.-N. Hung, Y.-M. Yu, Q.-M. Wu, and **C.-C. Tuan**, "Exquisite Design of a CCD Analog Front End Module," *Applied Mechanics and Materials*, Vols. 300-301, pp. 414-418, Feb. 2013. (**EI**, ISSN 1660-9336, 1662-7482)

[11] W.-T. Huang, C.-K. Wang, G.-M. Sung, and **C.-C. Tuan**, "Design and Implementation of a Low-Cost Scalar Multiplier-on-Chip for Elliptic Curve Cryptosystem," *Applied Mechanics and Materials*, Vols. 284-287, pp. 3395-3400, Jan. 2013. (**EI**, ISSN 1660-9336, 1662-7482)

[12] **C.-C. Tuan** and Y.-C. Wu, "IP Address Exchanging Scheme for Vehicle Ad Hoc Networks," *Advances in Intelligent Systems and Applications*, Vol. 20, No. 1, pp. 409-418, 2013. (**EI**, ISSN 1660-9336, 1662-7482)

[13] **C.-C. Tuan** and Y.-C. Wu, "Partial messages ordering by double confirmation in wireless sensor and actuator networks," *IET Networks*, Vol. 1, Issue 4, pp. 257-268, 2012. (ISSN 2047-4954, e-ISSN 2047-4962)

[14] T.-F. Lee, P.-J. Chao, C.-Y. Wang, W.-L. Huang, **C.-C. Tuan**, M.-F. Horng, J.-M. Wu, S.-A. Yeh, F.-M Fang, and S.-W. Leung, "An Intelligent System Approach Using Artificial Neural Networks to Evaluate the Quality of Treatment Planning for Nasopharyngeal Carcinoma," *Scientific Research and Essays*, Vol. 7 (23), pp. 2076-2088, 2012. (**SCI**, IF=0.445, ISSN: 1992-2248)

[15] **C.-C. Tuan**, H.-L. Tseng, Y.-J. Chang, C.-H. Chen, H.-D. J. Jeong, W.-T. Huang, "A Highly Reliable Platform with a Serpentine Antenna for IEEE 802.15.4 over a Wireless Sensor Network," WSEAS Transactions on Circuits and Systems, Vol. 11, Issue 1, pp. 182-197, 2012. (**EI**)

[16] **C.-C. Tuan** and Y.-C. Wu, "Triangular Energy Saving Cache-based Routing Protocol by Energy Sieving," *International Journal of Distributed Sensor Networks*. Vol. 2012, Article ID 602159, pp. 1-11, 2012. (**SCI**/**EI**, IF=0.203, ISSN: 1550-1329, e-ISSN: 1550-1477)

[17] **C.-C. Tuan**, Y.-C. Wu, W.-S. Chang, and W.-T. Huang, "Sensing Fault Tolerance by Quartile and Outlier Method in Multi-Hops Wireless Sensor and Actor Networks," *International Journal of Ad Hoc & Sensor Wireless Networks*, Vol. 15, Issue 1, pp. 83-105, 2012. (**SCI**, IF=0.309, ISSN: 1551-9899)

[18] **C.-C. Tuan** and Y.-C. Wu, "Grid Header Election by Predetermining in Mobile Ad-hoc Networks," *Journal of Applied Science and Engineering*, Vol. 15, No. 1, pp. 69-78, 2012. (**EI**, ISSN: 1560-6686)

[19] **C.-C. Tuan**, K.-Y. Chen, and Y.-C. Wu "Preventive Security Mechanism based on AODV," *Advanced Materials Research*, Vol. 225-226, pp. 565-568, June 2011.
(**EI**, ISSN: 1022-6680)

[20] **C.-C. Tuan** and Y.-C. Wu, "Event Ordering by Double Confirmation in Wireless Sensor and Actor Networks," ***IEEE Sensors Journal***, Vol. 11, No. 3, pp. 829-836, March 2011. (**SCI**/**EI**, IF=1.581, ISSN: 1530-437X)

[21] T.-F. Lee, P.-J. Chao, H.-M. Ting, S.-H. Lo, Y.-W. Wang, **C.-C. Tuan**, F.-M. Fang, and T.-J. Su, "Comparative Analysis of Smart Arc-based Dual Arc Volumetric Modulated Arc Radiotherapy (VMAT) versus Intensity-Modulated Radiotherapy for Nasopharyngeal Carcinoma," *Journal of Applied Clinical Medical Physics*, pp. 158-174, 2011. (**SCI**, IF=1.008, ISSN: 1526-9914)

[22] T.-F. Lee, S.-W. Leung, L.-M. Sun, M.-H. Chu, M.-H. Liou, **C.-C. Tuan**, W.-P. Chen, and T.-W. Yu, "Health-related Quality of Life Outcome Evaluation for Intensity-Modulated

Radiotherapy versus Helical Tomotherapy using EORTC QLQ-C30 and EORTC QLQ-HN35 Core Questionnaires for Nasopharyngeal Carcinomas," *Scientific Research and Essays*, Vol. 6, Issue 16, pp. 3389-3398, 2011. (**SCI**, IF=0.445, ISSN: 1992-2248)

[23] Y.-J. Chang, **C.-C. Tuan**, C.-H. Chen, J.-J. Chen, and W.-T. Huang, "Development of Cloud Computing Platform Applied on Telecare System with Virtualization Technology," *International Journal of Advanced Information Technologies*, Vol. 4, No. 1, pp.167-180, 2010. (ISSN:1996-2568)

[24] W.-T. Huang, S.-Y. Tan, Y.-J. Chang, and **C.-C. Tuan**, "A Novel Design for Evaluating Simultaneous Switching Noise within an Enhanced IBIS Model," *WSEAS Transactions on Circuits and Systems*, Vol. 9, No. 1, pp.42-59, 2010.
(**EI**, ISSN: 1109-2734)

(b) 研討會論文

類型/年分	2014	2013	2012	2011	2010	合計
國際研討會	5	7	4	6	3	25
國內研討會	10	3	5	8	8	34
合 計(篇)	15	10	9	14	11	59

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

- 103-101 年國科會(三年期)：建構頭頸癌放射治療之口乾症(Xerostomia)正常組織併發症機率(NTCP)與生活品質(QoL)之智慧型演算法分析與預測平台。
- 102 年國科會(一般型)：具動態時段之位置相依協同式過濾推薦機制於行動 Apps 設計與實現。
- 101 年國科會(一般型)：位置相依協同式過濾推薦機制於行動 Apps 之設計與實現。
- 099 年國科會(產學案)：基於 CCD 感測器具 30-FPS Full-HD 之兩百萬像素網路攝影機實作。
- 098 年國科會(產學案)：基於低成本與高彈性 XMOS 平台實作具情境感知遠距照護閘道器於無線感測網路。
- 102 年中科院產學案：智慧型廚衛浴遠端監控人機介面的研製。
- 101 年中科院產學案：智慧感測控制與人機界面研製、測試與驗證。
- 099 年~102 年：兼任創圓科技(股)公司-獨立董事(三年)。

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

- 臺北聯合大學系統2014年校園APP創意競賽**第二名**：自適性位置相依協同過濾行動推薦系統之APP。
- 臺北科大電資學院2014年金手獎競賽**佳作**：自適性位置相依協同過濾行動推薦系統之APP。
- 美國匹茲堡2013年國際發明展**銀牌**：Non-Invasive Osteoarthritis Diagnosis System," Jun. 2013.
- 瑞士日內瓦第41屆國際發明展**銅牌**：Non-Invasive Osteoarthritis Diagnosis System," Apr. 2013.
- 臺北科大電子系2013年專題競賽**甲等**：自適性位置相依協同過濾行動推薦系統之APP。
- 生物醫學工程學會2012年創意競賽**鐿鈦技術獎**：掌部術後恢復評估系統。
- 臺北科大電子系2010年專題競賽**佳作**：少女祈禱資源回收車線上通報系統。

2. **其他表現**(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

- 擔任國際學術期刊論文審查、研討會論文審查/議程委員、場次主持人等。
- 擔任國科會年度研究計畫案審查委員；國內科技大學教師升等案審查委員。
- 擔任考試院法務部調查局特種考試之專業考科命題、閱卷、口試委員。
- 擔任國家教育研究院(前國立編譯館)高職電機電子學群教科書審查委員。
- 擔任研訓機構代辦公民營機構人員遴選考試之命(審)題、閱卷、口試主持人。
- 受邀於校內外專題演講、校內外博士/碩士學位論文口試委員。
- Distinguished/Best Paper Award

  1. "Improving Face Recognition Performance using Similarity Feature-based Selection and Classification Algorithm," in *Proc. of 2013 Int'l Conf. on Robot, Vision and Signal Processing*, Kitakyushu, Japan, Dec. 10-12, 2013. (ISSN: 978-1-4799-3184-2/13, IEEE)
  2. "Location-based Collaborative Filtering Recommendation System with Dynamic Time Periods," in *Proc. of 2012 Int'l Conf. on e-CASE & e-Tech*, Hong Kong, Mar. 30-Apr. 1, 2012. (ISSN: 2074-5710).
  3. "Location *Dependent* Collaborative Filtering Recommendation System," in *Proc. of 2011 Int'l Conf. on e-CASE & e-Tech*, Tokyo, Japan, Jan. 18-20, 2011. (ISSN: 2074-5710)

李宗演 教授

實驗 (研究) 室名稱：軟硬共同設計實驗室

聯絡電話：02-2771-2171 轉 2251

e-mail：tylee@ntut.edu.tw

網址：http://www.ntut.edu.tw/~tylee

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. FPGA 嵌入式系統設計 2.汽車電子 3.節能系統設計 4.數位系統設計

1.近年重要論文及著述

(a) 期刊論文

1. **Trong-Yen Lee*** and Chi-Han Huang, "Design of Smart Power-Saving Architecture for Network on Chip," *VLSI Design*, vol. 2014, Article ID 531653, 10 pages, 2014. doi:10.1155/2014/531653, August 6, 2014. **《EI》**
2. Chia-Chun Tsai, Chung-Chieh Kuo, Feng-Tzu Hsu, and **Trong-Yen Lee**, "Discharge-Path-Based Antenna Effect Detection and Fixing for X-Architecture Clock Tree," *Integration, the VLSI Journal*, Vol. 45, No. 1, pp. 76-90, Jan. 2012. **《SCI》** ISSN: 0167-9260, I.F.= 0.663, Ranking: 33/48(68.75%). Subject Categories: Computer Science, Hardware & Architecture.
3. Chia-Chun Tsai*, Sheng-Bin Dai, and **Trong-Yen Lee**, "The RF Circuit Design of Power and Data Contactless Transmission for ISO/IEC 14443-2 Type B," *Journal of Circuits, Systems, and Computers*, Vol. 20, No. 8, pp. 1637-1658, December 2011. **《SCI》** ISSN: 02181266, I.F.= 0.215, Ranking: 46/48. Subject Categories: Computer Science, Hardware & Architecture.
4. Yang-Hsin Fan*, **Trong-Yen Lee**, Chiu-Chuan Yao, "Timing Waveform-Based Verification for Reconfigurable Systems," *Journal of Convergence Information Technology (JCIT)*, Vol. 6, No. 10, pp. 96-105, October 2011. **《EI》** ISSN: 1975-9320. Computer Science: Computer Networks and Communications, Computer Science: Hardware and Architecture.
5. Chia-Chun Tsai*, Chung-Chieh Kuo and **Trong-Yen Lee**, "High Performance Buffered X-Architecture Zero-Skew Clock Tree Construction With Via Delay Consideration," *International Journal of Innovative Computing, Information and Control (IJICIC)*, Vol. 7, No. 9, pp. 5145-5162, September 2011. **《SCI(E)》** ISSN: 1349-4198. Subject Categories: Automation and Control Systems.
6. Yang-Hsin Fan* and **Trong-Yen Lee**, "Grey Relational Hardware-Software Partitioning for Embedded Multiprocessor FPGA Systems," *Journal of Advances in Information Sciences and Service Sciences* (AISS), Vol. 3, No. 3, pp. 32-39, April 2011. **《EI》** ISSN: 1976-3700. Subject Area: Computer Science: Hardware and Architecture.
7. **Trong-Yen Lee***, Che-Cheng Hu, Yang-Kun Huang, and Chia-Chun Tsai, "Adaptive Frame Length Method for Hardware Context-switching in Dynamic Partial Self-reconfigurable Systems," *International Journal of Innovative Computing, Information and Control (IJICIC)*, Vol. 7, No. 3, pp. 1427-1442, March 2011. ISSN: 1349-4198, **《SCI(E)》** Subject Categories: Automation and Control Systems.
8. Yang-Hsin Fan*, **Trong-Yen Lee** and Tsung-Hsun Yang, "RCG: Retargetable Code Generation Methodology for Embedded Processors," *Journal of Convergence Information Technology*

(JCIT), Vol. 6, No. 2, pp. 260-271, Feb. 2011. 《**EI**》 ISSN: 1975-9320. Subject Area: Computer Science: Hardware and Architecture.

9. Chia-Chun Tsai, Chung-Chieh Kuo*, and **Trong-Yen Lee**, "Post-Routing Double-Via Insertion for X-Architecture Clock Tree Yield Improvement," *IEICE Trans. on Fundamentals of Electronics, Communications and Computer Sciences*, Vol. E94-A, No. 2, pp. 706-716, February 2011. 《**SCI**》 ISSN: 0916-8508. Impact Factor = 0.291, Ranking: 44/48, Subject Categories: Computer Science, Hardware & Architecture.
10. **Trong-Yen Lee***, Che-Cheng Hu, and Shiau-Jiun Tseng, "Multiprotocol driver for hardware context-switching in reconfigurable systems," *Innovative Computing, Information and Control Express Letters, Part B: Applications*, Vol. 1, No. 2, pp. 119-124, December 2010. 《**EI**》ISSN: 2185-2766. Subject Area: Computer Science.
11. **Trong-Yen Lee***, Che-Cheng Hu, Li-Wen Lai, and Chia-Chun Tsai, "Hardware context-switch methodology for dynamically partially reconfigurable systems," *Journal of Information Science and Engineering*, Vol. 26, No. 4, pp. 1289-1305, July 2010. 《**SCI**》 ISSN: 1016-2364. Subject Categories: Computer Science, Information Systems. I.F. = 0.270, Ranking: 122/128.
12. **Trong-Yen Lee***, Yang-Hsin Fan and Chia-Chun Tsai, "Adaptive Multi-Constraints in Hardware-Software Partitioning for Embedded Multiprocessor FPGA Systems," *WSEAS Transaction on Computers*, Issue 2, Volume 8, pp. 334-343, February 2009. 《**EI**》 ISSN: 1109-2750. Subject Area: Computer Science.
13. Chung-Chieh Kuo, Chia-Chun Tsai*, and **Trong-Yen Lee**, "Pattern-matching-based X-architecture zero-skew clock tree construction with X-Flip technique and via delay consideration," *Integration, the VLSI Journal*, Vol. 44, No. 1, pp. 87-101, Jan. 2011. 《**SCI**》 ISSN: 0167-9260. I.F.= 0.663, Ranking: 33/48. Subject Categories: Computer Science, Hardware & Architecture.
14. Chia-Chun Tsai, Chung-Chieh Kuo, and **Trong-Yen Lee**, "Jumper insertion for antenna avoidance in X-clock routing," *Far East Journal of Electronics and Communications*, Vol. 4, No. 2, pp. 123-132, June, 2010. 《**EI**》ISSN: 0973-7006. Computer Science, Hardware & Architecture.

(b) 研討會論文

International Conference Papers (with ISBN): 國際研討會論文

15. Trong-Yen Lee*, Wei-Cheng Chen, and Chi-Han Huang, "Design of Low-Complexity 4-Path Dynamic Reconfigurable MDC FFT Processor," in *Proceedings of The International Computer Symposium* (ICS 2014), Taichung TAIWAN, December 12-14, 2014, pp. 239-249.
16. Pin-Han HUANG, Sai-Wang, Jones WAN, Trong-Yen LEE*, Yuen-Lam SIN, and Wei-Cheng CHEN, "Self-sufficient Automatic Lighting System," in *Proceedings of The International Symposium on Technology for Sustainability* (ISTS 2014), Taipei TAIWAN, November 19-21, 2014, Paper No. 409.
17. Trong-Yen Lee, Kun-Feng Xie, Che-Cheng Hu, and Chi-Han Huang, "Design of FPGA-based Partial Dynamic Reconfigurable Hardware Scheduler," in *Proceedings of The **Seoul International Conference on Applied Science and Engineering*** **(SICASE 2014),** pp. 312-320, *August 29-31, 2014, Seoul, KOREA.* (ISBN: 978-986-89536-5-9) ***(Best Paper Award: Electrical, Electronic and Computer)***
18. Trong-Yen Lee, Chi-Han Huang, Bo-Hao Wang, Cheng-Hsiu Kang , Jen-Yao Chen, and I-Hsin Chou, "Energy-Saving LED Control Module for Agent-Based Micro-Grid Systems," in *Proc. of IEEE International Conference on Consumer Electronics - Taiwan (IEEE 2014 ICCE-TW)*, pp. 127-128, May 26-28, 2014, Taipei TAIWAN, (ISBN: 978-1-4799-3830-8) 《EI》
19. **Trong-Yen Lee**, Nian-You Lin, Wei-Cheng Chen, and Haixia Wu, "An Efficient Task Placement Method for Reconfigurable FPGA Systems," in *Proc. of the 2013 Seventh International Conference on Complex, Intelligent, and Software Intensive Systems*, pp. 451-455, 3–5 July, 2013, Taichung, Taiwan, ISBN 978-0-7695-4992-7. 《EI》

20. **Trong-Yen Lee**, Min-Jea Liu, Chia-Chen Fan, Chia-Chun Tsai, and Haixia Wu, "Low Complexity Digit-serial Multiplier Over GF(2^m) Using Karatsuba Technology," in *Proc. of the 2013 Seventh International Conference on Complex, Intelligent, and Software Intensive Systems*, pp. 461-466, 3–5 July, 2013, Taichung, Taiwan, ISBN 978-0-7695-4992-7. 《EI》
21. **Trong-Yen Lee** and Chi-Feng Lee, "Microcontroller Based Automatic Parking System," in *Proc. of the IEEE International Conference of Machine Learning and Cybernetics (ICMLC)*, Vol. 3, pp. 875-879, July 15-17, 2012, Xi'an, Shaanxi. China. ISBN: 978-1-4673-1485-5. 《EI》
22. Chia-Chun Tsai, Chung-Chieh Kuo, and **Trong-Yen Lee**, "Voltage-Island Aware X-Clock Tree Construction for Power Minimization," in *Proc. of **International Conference on** Computer Science and Service System*, pp. 4132-4135, June 27-29, 2011, Nanjing, Mainland China. ISBN: 978-142449763-8. 《EI》
23. Chia-Chun Tsai, Chung-Chieh Kuo, Feng-Tzu Hsu, Lin-Jeng Gu, and **Trong-Yen Lee**, "X-Architecture Zero-Skew Clock Tree Construction with Performance and DFM Considerations," in *Proc. of IEEE International SoC Design Conference* (*ISOCC-2010*), pp. 294-297, Incheon, Korea, Nov. 2010. ISBN: 978-142448633-5. 《EI》
24. **Trong-Yen Lee**, Xi-Shing Lin, and Chia-Chun Tsai, "Design and Implementation of an Efficient Scheduling Scheme for Circuit-Switched Network-on-Chip," in *Proc. of the International Conference High-Speed Circuits Design*, Oct. 28-29, 2010, Taichung, Taiwan, pp. 123-127. (Excellent Paper Award) ISBN: 978-957-21-7823-2.
25. **Trong-Yen Lee**, Shiau-Jiun Tseng, and Che-Cheng Hu, "Adaptive hardware context-switching approach for reconfigurable systems," in *Proceedings of the IEEE Asia Symposium on Quality Electronic Design*, August 3-4, 2010, pp. 140-145. ISBN: 978-142447808-8. 《EI》
26. Chia-Chun Tsai, Chung-Chieh Kuo, Lin-Jeng Gu, and **Trong-Yen Lee**, "Double-via Insertion Enhanced X-Architecture Clock Routing for Reliability," in *Proc. IEEE International Symposium on Circuits and Systems* (*ISCAS-2010*), pp. 3413-3416, Paris, France, May 2010. ISBN: 978-142445308-5. 《EI》
27. **Trong-Yen Lee**, Che-Cheng Hu, and Chia-Chun Tsai, "Adaptive free space management of online placement for reconfigurable systems," in *Proceedings of the International MultiConference of Engineers and Computer Scientists*, March 17-19, 2010, pp. 322-326. ISBN: 978-988170128-2. 《EI》
28. Chia-Chun Tsai, Chung-Chieh Kuo, Lin-Jeng Gu, and **Trong-Yen Lee**, "Antenna Violation Avoidance/Fixing for X-Clock Routing," in *Proc. IEEE the 11th International Symposium on Quality Electronic Design* (*ISQED-2010*), pp. 508-514, March 2010. ISBN: 978-142446455-5. 《EI》

National Conferences : 國內研討會論文

29. 陳任曜、李宗演、黃啟翰，"應用於智慧電網之可調式多金鑰 AES 演算法"， 2014 智慧電子應用設計研討會(2014 IED)，Paper No. 56，高雄、台灣，Dec. 4，2014。
30. 李宗演、陳明昌、劉明傑，"FlexRay / CAN 車載網路之閘道器封包驗證系統"，2014 民生電子研討會 (2014 WCE)，pp. 102-107，台中、台灣，Nov. 29，2014。
31. 林秉諺、李宗演、黃啟翰，"ZigBee 無線網路應用於停車場車輛導引系統"，2014 民生電子研討會 (2014 WCE)，pp. 96-101，台中、台灣，Nov. 29，2014。
32. 張光華、李宗演、黃啟翰，"雲端伺服器之節能動態配置策略"，2014 民生電子研討會 (2014 WCE)，pp. 90-95，台中、台灣，Nov. 29，2014。
33. 何俊瑋、吳孟屏、李宗演、陳韋証，"智慧型導盲杖"，2014 民生電子研討會 (2014 WCE)，pp. 108-113，台中、台灣，Nov. 29，2014。
34. 郭家瑋、王于彰、李宗演、陳韋証，"防路口塞車之智慧型交通號誌輔助控制系統"，2014 民生電子研討會 (2014 WCE)，pp. 353-358，台中、台灣，Nov. 29，2014。
35. **Trong-Yen Lee**, Jhen-Syuan Chen and Chi-Han Huang "Design of High Throughput Adaptive Instruction Codec Architecture for Network-on-Chip," in *Proceedings of the 25th VLSI Design/CAD Symposium*, Paper No. S01-08, Taichung, Taiwan, August 5-8, 2014.
36. 李宗演、葉明瑋、劉明傑、蔡文琪，"基於 FPGA 之 STB 自動測試系統"，第九屆智慧生活科技研討會(ILT 2014)，pp. 414-420，台中，台灣，June 6，2014。ISBN/978-957-21-9400-3。積體電路設計領域:**論文佳作。**
37. Trong-Yen Lee, Jiun Huang, Ruihan Yin, and Chi-Han Huang, "High-speed FlexRay-CAN Gateway for In-Vehicle Network," 第九屆智慧生活科技研討會(ILT 2014)，pp. 439-442，台中，台灣，June 6，2014。ISBN/978-957-21-9400-3。
38. **李宗演**、洪宗華、劉明傑，"FlexRay 容錯系統之可靠性排程"，2013 智慧電子應用設計研討會 (2013 IED)，pp. 314-317，台中、台灣，Dec. 13，2013。ISBN: 978-957-21-9205-4

39. **李宗演**、陳振軒、黃啟翰，“應用於晶片網路之可調式指令編解碼架構設計”，2013 智慧電子應用設計研討會 (2013 IED)，pp. 270-277，台中、台灣，Dec. 13，2013。ISBN: 978-957-21-9205-4 (論文佳作)
40. **李宗演**、陳韋証、黃啟翰，“高效率 FFT 處理器核心設計”，2013 智慧電子應用設計研討會 (2013 IED)，pp. 258-261，台中、台灣，Dec. 13，2013。ISBN: 978-957-21-9205-4
41. **李宗演**、黃雋、黃啟翰，“應用於車用網路之快速閘道設計”，2013 智慧車用電子研討會 (2013 IAE)，中壢、台灣，Dec. 10，2013。
42. **Trong-Yen Lee** and Guan-Zhi Liou, “Vehicle Automatic Parking System and Chip Design,” in *Proceedings of the 24th VLSI Design/CAD Symposium*, Paper No. P1-14, Kaohsiung, Taiwan, August 6-9, 2013.

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

時間	名稱或項目	榮譽事項
2014 年 8 月 29 日至 31 日	國際會議論文競賽: *The* ***Seoul International Conference on Applied Science and Engineering*** **(SICASE 2014)**	「 *Electrical, Electronic and Computer* 」: **最佳論文**
2014 年 3 月 19 初賽, 4 月 30 日決賽	2014 全國大學校院積體電路(IC)設計競賽大學可程式邏輯設計組	指導學生參賽，獲設計完整獎
2014 年 6 月 2012 年 6 月 2011 年 6 月	指導碩士生參加 The 9th 7th 及 6th Intelligent Living Technology Conference, ILT 2014, ILT 2012, ILT 2011 論文競賽	獲積體電路設計組 論文**佳作獎**
2014 年 6 月	電資學院 103 年度服務績優評選	獲教師服務優良獎
2014 年 5 月	指導大學部學生參加台北科技大學林宏裕專題製作競賽	優等獎
2014 年 5 月	指導大學部學生參加台北科技大學林宏裕專題製作競賽	佳作獎
2014 年 4 月	指導大學部學生參加教育部 IC 設計競賽 E 組:可程式邏輯設計	進入決賽
2013 年 9 月	台北科大 101 學年度導師優良評選	獲台北科大優良導師
2013 年 6 月	電資學院 101 學年度教學績優評選	獲傑出教學獎

蔡偉和 教授

多媒體訊號處理實驗室
聯絡電話：02-27712171 ext. 2258
e-mail：whtsai@ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~whtsai/
http://140.124.72.88/LAB/MSPLab.html

研究聚焦領域：□H：健康科技■ I：智慧整合科技□ G：綠色科技□ H：人文與創新元素

專長: 1.數位訊號處理 2.音訊辨識 3.圖型辨識 4.資訊檢索

1.近年重要論文及著述

(a)期刊論文

1. Wei-Ho Tsai, Cin-Hao Ma, and Yi-Po Hsu (2015, May). Automatic Singing Performance Evaluation Using Accompanied Vocals as Reference Bases, *Journal of Information Science and Engineering*, vol. 31, no. 3, pp. 821-838.
2. Wei-Ho Tsai, Yeong-Yuh Xu, and Wei-Cheng Lin (2014, Nov). Bird Species Identification Based on Timbre and Pitch Features of Their Vocalization, *Journal of Information Science and Engineering*, vol. 30, no. 6, pp. 1927-1944.
3. Wei-Ho Tsai and Sung-How Sue (September 2014). Unsupervised Clustering of Heart Sound Recordings for Cardiac Auscultation Database Indexing, *Journal of Information Science and Engineering*, vol. 30, no. 4, pp. 1655-1668
4. Wei-Ho Tsai, Yeong-Yuh Xu, Jun-Hao Chien, and Wen-Tzeng Huang (2014, Jan). Blind Clustering of Fingerprints for Database Indexing, *Journal of Information Science and Engineering*, vol. 30 no. 1, pp. 195-212. (SCI).
5. Wei-Ho Tsai, Jun-Wei Lin, and Der-Chang Tseng (2013, Sep). Unsupervised Fingerprint Recognition. *IEICE Transactions on Information and Systems*, vol.E96-D, no.9, pp.2115-2125. (SCI).
6. Wei-Ho Tsai*, Yu-Ming Tu, and Cin-Hao Ma (2012, Dec). An FFT-based fast melody comparison method for query-by-singing/humming systems. *Pattern Recognition Letters*, vol. 33, no. 16, pp. 2285–2291. (SCI).
7. Wei-Ho Tsai* and Hsin-Chieh Lee (2012, Oct). Singer Identification Based on Spoken Data in Voice Characterization. *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 20, no. 8. (SCI).
8. Wei-Ho Tsai* and Hsin-Chieh Lee (2012, Aug). Automatic Singer Identification Based on Speech-drived Models. *International Journal of Future Computer and Communication*, vol. 1, no. 2, pp. 94-96.
9. Wei-Ho Tsai* and Hsin-Chieh Lee (2012, May). Automatic Evaluation of Karaoke Singing Based on Pitch, Volume, and Rhythm Features. *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 20, no. 4, pp.1233-1243. (SCI).
10. Wei-Ho Tsai* and Hao-Pin Lin (2011, Jul). Background Music Removal Based on Cepstrum Transformation for Popular Singer Identification. *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 19, no. 5, pp.1196-1205. (SCI).
11. Wei-Ho Tsai* and Hsin-Chieh Lee (2011, Jun). Performance Evaluation of Speaker-Identification Systems for Singing Voice Data. *International Journal of Computational Linguistics and Chinese Language Processing*. (THCI Core).
12. Wei-Ho Tsai* and Duo-Fu Bao (2010). Clustering Music Recordings Based on Genres. *Journal of Information Science and Engineering*, vol. 26, pp.2059-2074. (SCI).
13. Wei-Ho Tsai* and Shih-Jie Liao (2010). Speaker Identification in Overlapping Speech. *Journal of*

Information Science and Engineering, vol. 26, pp.1891-1903. (SCI).

14. Wei-Ho Tsai* and Wei-Che Hsieh (2010). Clustering Unknown Music Recordings Based on Audio Fingerprinting. *International Journal of Computer Science and Software Technology*, vol. 3, pp.119-130.
15. Yi-Hsiang Chao, Wei-Ho Tsai*, Hsin-Min Wang, and Ruei-chuan Chang (2009, Jul). Improving the Characterization of the Alternative Hypothesis via Minimum Verification Error Training with Applications to Speaker Verification. *Pattern Recognition*, vol. 42, no. 7, pp. 1351-1360. (SCI).
16. Yi-Hsiang Chao, Wei-Ho Tsai*, and Hsin-Min Wang (2009, Jul). Improving GMM-UBM Speaker Verification Using Discriminative Feedback Adaptation. *Computer Speech and Language*, vol. 23, no. 3, pp. 376-388. (SCI).
17. Wei-Ho Tsai* and Hsin-Min Wang (2009). Evolutionary Minimization of the Rand Index for Speaker Clustering," *Computer Speech and Language*, vol. 23, pp. 165-175. (SCI).

(b)研討會論文

1. Wei-Ho Tsai*, Sung-How Su, and Cin-Hao Ma (2013, Oct). Unsupervised Classification of Heart Sound Recordings. *Proc. APSIPA Annual Summit and Conference*, Kaohsiung, Taiwan.
2. Wei-Ho Tsai* and Cin-Hao Ma (2013, Jul). Fingerprint Clustering for Forensic Data Indexing. *The 5th IEEE International Workshop on Computer Forensics in Software Engineering*, Kyoto, Japan.
3. Wei-Ho Tsai*, Yeong-Yuh Xu, and Wei-Cheng Lin (2013, Jul). Bird Species Identification Based on Timbre and Pitch Features. *Proc. IEEE International Conference on Multimedia and Expo*, San Jose, California, USA . NSC 101-2219-E-027-007.
4. Wei-Ho Tsai* and Yu-Ming Tu (2012, Jul). An Efficient Query-By-Singing/Humming System Based on Fast Fourier Transforms of Note Sequences. *Proc. IEEE Conference on Multimedia and Expo*, Melbourne, Australia.
5. Wei-Ho Tsai* and Hsin-Chieh Lee (2012, Jun). Automatic Singer Identification Based on Speech-Derived Models. *Proc. International Conference on Advancements in Information Technology*, Hong Kong.
6. Wei-Ho Tsai* and Hsin-Chieh Lee (2011). An Automated Singing Evaluation Method For Karaoke Systems. *Proc. IEEE Conference on Acoustics, Speech, and Signal Processing*, Prague, Czech Republic.
7. Wei-Ho Tsai* and Duo-Fu Bao (2010). Clustering Music Recordings Based on Genres. *Proc. International Conference on Information Science and Applications*, Seoul, Korea. NSC 96-2221-E-027-097-MY3.
8. Wei-Ho Tsai* and Hao-Ping Lin (2010). Popular singer identification based on cepstrum transformation. *Proc. IEEE Conference on Multimedia and Expo (ICME)*, Singapore. NSC 96-2221-E-027-097-MY3.
9. Wei-Ho Tsai* and Hsin-Chieh Lee (2010). Identification of Simultaneous Speakers. *Proc. International Conference on Computer Engineering and Technology*, Chengdu, China. NSC 96-2221-E-027-097-MY3.
10. Yi-Hsiang Chao, Wei-Ho Tsai*, Hsin-Min Wang (2010). Speaker Verification Using Support Vector Machine with LLR-based Sequence Kernels. *Proc. International Symposium on Chinese Spoken Language Processing (ISCSLP)*, Tainan, Taiwan. NSC 96-2221-E-027-097-MY3.
11. Wei-Ho Tsai* and Wei-Che Hsieh (2009, Sep). Blind Clustering of Music Recordings Based on Audio Fingerprinting. *Proc. International Conference on Intelligent Information Hiding and Multimedia Signal Processing*, Kyoto, Japan. NSC 96-2221-E-027-097-MY3.

(c)專利

1. 蔡偉和，「基於語音辨識的互動式廣告系統」，中華民國發明專利 I411973，專利期間：201310~202912
2. 蔡偉和、黎欣捷，「歌唱評分系統」，中華民國發明專利 I419150，專利期間：201312~203103

(d)技術移轉

1. 「應用於廣場電子看板之互動式遊戲的語音辨識技術研發」，方寸經緯股份有限公司 201108~201208

2. 「以語音辨識為基礎的互動式行動廣告服務」，方寸經緯股份有限公司 200911~201010

(e)專書及專章

1. 蔡偉和、盧怡仁，「單晶片數位訊號處理平台之開發速成寶典」，五南出版社，2012/08/01，ISBN：978-957-11-6740-4

(f)作品

無

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

計畫名稱	委託機構	起訖日期	執行情形	計畫內擔任工作	經費總額
以視訊與音訊內容為基礎之鳥類辨識系統之研發(二)(102-2221-E-241-016-)	科技部	2013/08/01~2014/07/31	執行中	共同主持人	751,000 元
以語音和影像為基礎之聯網電視多使用者自然人機介面(101-2219-E-027-007-)	科技部	2012/10/01~2013/10/31	已結案	共同主持人	2,683,000 元
以視訊與音訊內容為基礎之鳥類辨識系統之研發(101-2221-E-241-017-)	科技部	2012/08/01~2013/07/31	已結案	共同主持人	662,000 元
「錄音資料之關鍵詞偵測技術研發」	德鴻科技	2012/6/1 ~2013/5/31	已結案	主持人	306,800 元
自動歌唱評分方法研究(3/3)(101-2628-E-027-001-)	科技部	2012/08/01~2013/07/31	已結案	主持人	714,000 元
利用音樂療法並結合腦波分析及音訊辨識技術進行駕駛疲勞度改善研究(101-2221-E-027-128-MY2)	科技部	2012/08/01~2014/07/31	執行中	主持人	1,089,000 元
自動歌唱評分方法研究(2/3)(100-2628-E-027-002-)	科技部	2011/08/01~2012/07/31	已結案	主持人	714,000 元
應用於廣場電子看板之互動式遊戲的語音辨識技術研發(100-2622-E-027-012-CC3)	科技部	2011/06/01~2012/05/31	已結案	主持人	394,000 元
教育部網路通訊人才培育先導型計畫—「100 年度課程發展計畫」:影音娛樂服務平台整合	教育部	2011/4/1 ~2012/3/31	已結案	主持人	1,195,440 元
自動歌唱評分方法研究(99-2628-E-027-005-)	科技部	2010/08/01~2011/07/31	已結案	主持人	714,000 元

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 國科會工程處 101 年度應用型產學成果展示優良獎
2. 「教育部網路通訊人才培育先導型計畫」101 年第二季最佳論文獎
3. 「教育部網路通訊人才培育先導型計畫」101 年第三季最佳論文獎
4. 「102 年第四季網通國家型計畫」優良論文獎

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

本人近五年的研究工作著重於語音及音樂信號處理研究與技術開發，代表性成果包括：

(1)語者辨認（Speaker Recognition）

其中發表 1 篇長篇論文於「IEEE Transactions on Audio, Speech, and Language Processing」，該期刊於 SCI 所收錄之 Acoustics 類別期刊中排名前 26%，亦為所屬研究領域中最頂尖的期刊。另亦發表 1 篇長篇論文於「Pattern Recognition」，該期刊於 SCI 所收錄之 Engineering, Electrical & Electronic 類別期刊中排名前 12%。有別於之前相關研究，我們著重於探討有關語音資料有限或不足的情況下如何設計系統。現階段語者確認最普遍的方法是使用高斯混合分類器(Gaussian Mixture Classifier)，利用已知身份的語音資料分別產生用戶語者模型(Client-Speaker Model)與非用戶語者模型(Anti-Speaker Model)，藉以判斷待測語音較像何種模型。我們提出多項改善非用戶語者模型的方法，主要概念是進行多種非用戶語者模型表示法的最佳化結合。此種最佳化考慮到如何使各用戶語者與非用戶語者的聲音特性空間能儘可能地分離。我們所提出的方法具有很好的可移植性。

(2)音樂資訊檢索(Music Information Retrieval)

其中發表 2 篇長篇論文於「IEEE Transactions on Audio, Speech, and Language Processing」，該期刊於 SCI 所收錄之 Acoustics 類別期刊中排名前 26%，亦為所屬研究領域中最頂尖的期刊。具體研究成果為哼唱式歌曲查詢(Query-By-Humming/Singing)、翻唱歌曲查詢(Cover Song Retrieval)、歌唱語言辨識(Sung Language Identification)、與重唱歌手辨識(Duet Singer Identification)等，其中特別重視音樂內含歌聲(Singing)的資訊抽取問題。我們也建置了若干雛形系統，可供技術移轉於實際產業。

(3)歌唱評分(Singing Performance Evaluation)

鑒於市面上雖已有許多卡拉 OK 設備內含歌唱評分功能，但其評分能力仍十分粗淺不可靠，往往無法反映實際的歌唱程度，本研究提出利用「音高」、「音量」、與「節奏」等三種線索進行評分的方法。我們透過錄製各種不同歌唱能力的清唱樣本進行分析，並藉由卡拉 OK VCD 音樂中的歌聲萃取做為比較參考，使機器學習判斷歌唱好壞。實驗結果顯示本研究所提出之自動歌唱評分方法與專家評分的結果相近。該研究發表國內外第一篇探討卡拉 OK 自動歌唱評分的期刊論文於「IEEE Transactions on Audio, Speech, and Language Processing」，該期刊為所屬研究領域中最頂尖的 SCI 期刊。

本團隊研發之哼唱式找歌與歌唱評分系統(iOS 版本)及 TVBS 新聞採訪報導。

范育成 教授

實驗 (研究) 室名稱：系統整合實驗室 Integrated System Lab.
聯絡電話：02-27712171 ext 2246
e-mail：skystar@ntut.edu.tw
網址：http://www.ntut.edu.tw/~skystar

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1.數位積體電路設計 2.多媒體晶片與系統設計專長 3.三維立體電視系統設計 4.三維互動系統設計

1.近年重要論文及著述

(a)期刊論文

1. Yu-Cheng Fan, and Da-Che Lo, "A New Method for High-Speed Dynamic TSPC Memory by Low-Temperature Poly Silicon TFT Technology," *IEEE Transactions on Magnetics*, vol. 45, issue 5, pp. 2312-2315, May 2009. (SCI, EI)
2. Yu-Cheng Fan, and Yi-Chun Chen, "Oblique Memory Array Design Method," *IEEE Transactions on Magnetics*, vol. 45, issue 5, pp. 2316-2319, May 2009. (SCI, EI)
3. Yu-Cheng Fan, and Yi-Cheng Liu, "High Speed Memory Cell Circuit Design Based on Low Temperature Poly Silicon TFT Technology," *IEEE Transactions on Magnetics*, vol. 45, issue 5, pp. 2320-2323, May 2009. (SCI, EI)
4. Yu-Cheng Fan, and Jan-Hung Shen "DFT-Based SoC/VLSI IP Protection and Digital Rights Management Platform," *IEEE Transactions on Instrumentation and Measurement*, vol. 58, issue 6, pp. 2026-2033, June 2009. (SCI, EI)
5. Yu-Cheng Fan, and Chia-Hao Chung, "Spatial-Temporal Correlation-Assisted Motion Estimation," *IEEE Transactions on Circuit and Systems for Video Technology*, vol. 19, issue 7, pp. 932-944, July 2009. (SCI, EI)
6. Yu-Cheng Fan, Jung-Ching Chiou, and Yan-Hong Jiang, "Hole-Filling Based Memory Controller of Disparity Modification System for Multi-view Three Dimensional Video," *IEEE Transactions on Magnetics*, vol. 47, issue 3, pp. 679-682, March 2011. (SCI, EI)
7. Yu-Cheng Fan, Yu-Ting Kung, and Bing-Lian Lin, "Three-Dimensional Auto-Stereoscopic Image Recording, Mapping and Synthesis System for Multi-view 3D Display," *IEEE Transactions on Magnetics*, vol. 47, issue 3, pp. 683-686, March 2011. (SCI, EI)
8. Yu-Cheng Fan, Shu-Fen Wu, and Bing-Lian Lin, "Three-Dimensional Depth Map Motion Estimation and Compensation for 3D Video Compression," *IEEE Transactions on Magnetics*, vol. 47, issue 3, pp. 691-695, March 2011. (SCI, EI)
9. Yu-Cheng Fan, Chang-Wei Fan, Wei-Chun Ting, and Guan-Fu Lee, "Interactive Remote Control System for Three Dimensional Displays," *Applied Mechanics and Materials*, vol. 145, pp. 73-77, Jan. 2012. (EI)
10. Yu-Cheng Fan, Shan-Ann Chen, Kuo-Gi Wu, and Jun-Lin You, "3D-DCT Chip Design for 3D Multi-view Video Compression," *Applied Mathematics and Information Sciences*, vol. 6, number 2-S, pp. 573-578, May 2012. (SCI, EI)
11. Yu-Cheng Fan, and Jan-Hung Shen, "Low Luminance Dynamic Range Conversion Component for Image Process System," *Elsevier International Journal of Advancements in Computing Technology*, vol. 4, no. 19, pp. 307-316, Oct. 2012. (EI)
12. Yu-Cheng Fan, and Jan-Hung Shen, "Low Luminance Dynamic Range Converter for Vehicle Application," *Applied Mechanics and Materials*, vol. 284-287, pp. 2171-2175, Jan. 2013. (EI)
13. Yu-Cheng Fan, Yi-Feng Chiang, and Ching-Min Lee, "Three Dimensional Vision Conversion Based on Cloud Computing," *Applied Mechanics and Materials*, vol. 284-287, pp. 3492-3496, Jan. 2013. (EI)
14. Yu-Cheng Fan, and Yi-Feng Chiang, "Discrete Wavelet Transform on Color Picture Interpolation of Digital Still Camera," *VLSI Design*, vol. 2013, pp. 1-9, Jan. 2013. (EI)

15. Yu-Cheng Fan, Yi-Feng Chiang, and Yin-Te Hsieh, "Constant-hue Based Color Filter Array Demosaicking Sensor for Digital Still Camera Implementation," *IEEE Sensors Journal*, vol. 13, issue 7, pp. 2586-2594, July 2013. (SCI, EI)
16. Yu-Cheng Fan, Chun-Chang Lu, Di-Wei Syu, Sin-Hong Chen, and Yun-Ting Shie, "3-D Holographic Data Storage Circuit Design," *IEEE Transactions on Magnetics*, vol. 50, issue 7, pp.3500301~3500305, July 2014. (SCI, EI)
17. Yu-Cheng Fan, Jun-Lin You, Jan-Hung Shen, and Chun-Hung Wang, "Luminance and Color Correction of Multi-view Image Compression for 3DTV System" *IEEE Transactions on Magnetics*, vol. 50, issue 7, pp. 3500401~3500404, July 2014. (SCI, EI)
18. Yu-Cheng Fan, Chih-Kang Lin, Shih-Ying Chou, Hung-Kuan Liu, Shu-Hsien Wu, and Chun-Hung Wang, "Predictable Power Saving Memory Controller Circuit Design for Embedded Static Random Access Memory," *IEEE Transactions on Magnetics*, vol. 50, issue 7, pp. 8600101~8600105, July 2014. (SCI, EI)
19. Yu-Cheng Fan, Chih-Kang Lin, Shih-Ying Chou, Chun-Hung Wang, Shu-Hsien Wu, and Hung-Kuan Liu, "Engineering Change Orders Design Using Multiple Variables Linear Programming for VLSI Design," *VLSI Design*, vol. 2014, Article ID 698041, pp. 1~5, Aug. 2014. (EI)
20. Yu-Cheng Fan, Yi-Chun Chen, and Shih-Ying Chou, "Vivid-DIBR Based 2D to 3D Image Conversion System for 3D Display," *IEEE/OSA Journal of Display Technology*, vol. 10 , issue 10, pp. 887-898, Oct. 2014. (SCI, EI)
21. Yu-Cheng Fan, Qiaoyan Yu, Thomas Schumann, Ying-Ren Chien, and Chih-Cheng Lu, "Advanced VLSI Architecture Design for Emerging Digital Systems," *VLSI Design*, vol. 2014, Article ID 746132, pp. 1~2, Dec. 2014. (EI)
22. Yu-Cheng Fan, Pin-Kang Huang, and Hung-Kuan Liu, "VLSI Design of a Depth Map Estimation Circuit Based on Structured Light Algorithm," accepted, *IEEE Transactions on Very Large Scale Integration Systems*, vol. , issue , pp. , . (SCI, EI)
23. Yu-Cheng Fan, and Yu-Yao Hsu, "Novel Fragile Watermarking Scheme Using an Artificial Neural Network for Image Authentication," *Applied Mathematics and Information Sciences*, vol. 9, number 5, pp. 1-9, Sept. 2015. (SCI, EI)

(b)研討會論文

共計發表 61 篇研討會論文，其中四篇獲得最佳論文獎。

(c)專利

1. Yu-Cheng Fan, and Yin-Te Hsieh, "Integrated Circuit Package," United States Patent 7923832, April 12, 2011.
2. 范育成, 陳易群, "交通資訊系統以及其提供方法與電腦程式產品," 中華民國專利 I390472, Mar. 21, 2013.
3. 范育成, 謝胤德, "積體電路封裝體," 中華民國專利 I405310, Aug. 11, 2013.
4. 賴金輪, 范育成, "視訊編碼系統及方法、視訊解碼系統及方法、視訊顯示系統及方法," 公告編號：201101839, 中華民國專利, 公告日：Jan. 1, 2011.
5. 范育成, 張立承, 劉弘寬, 二維至三維的深度影像建立方法及裝置(Method of 2D-to-3D depth image construction and device thereof), 中華民國專利申請中, 2013.
6. 范育成, 沈展弘, 王竣弘, 多視角影像的修正裝置及其方法(Method and Apparatus for Correcting the Multi-view Images), 中華民國專利申請中, 2013.
7. 范育成, 黃聖翔, 周世穎, 利用手勢與手指的遙控方法及遙控裝置, 中華民國專利申請中, 2013.
8. 范育成, 沈德威, 吳書賢, 用以建立立體影像之深度影像的修補方法(Repairing Method of the Depth Image for Establishing the Three-Dimensional Image), 中華民國專利申請中, 2013.

(d)技術移轉

1. 技術名稱：應用於互動電視之手勢遙控器電路設計
   技轉廠商：彩飛有限公司(102.06.01~ 103.5.31)
2. 技術名稱：應用於多視角立體顯示系統之 DIBR 轉換電路設計
   技轉廠商：彩飛有限公司(101.06.01~ 102.5.31)

3. 技術名稱：應用於數位相機之管線式固定色調插值核心電路設計
技轉廠商：彩飛有限公司(98.11.01~ 99.10.31)

(e)專書及專章

(f)作品

(g)研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

共計執行 23 件計畫：

1. 科技部一般型計畫 9 件
2. 科技部產學計畫 4 件
3. 教育部 10 件

(h)獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 榮獲「104 年度國立臺北科技大學 Dr. Shechtman 年輕學者研究獎」，March 24, 2015.
2. 指導學生周世穎榮獲「2014 年中華民國資訊學會最佳碩博士論文獎」，Dec. 27, 2014.
3. 指導學生劉弘寬榮獲「2014 年中華民國資訊學會最佳碩博士論文獎」，Dec. 27, 2014.
4. 指導學生王竣弘榮獲「3DIDA 第一屆學術碩博士論文碩士組優秀獎」，Dec. 22, 2014.
5. 指導學生張立承榮獲「3DIDA 第一屆學術碩博士論文碩士組優秀獎」，Dec. 22, 2014.
6. 指導學生劉弘寬、林益興、許宇曜榮獲「教育部 103-104 年度智慧電子跨領域應用專題系列課程計畫之 4C 電子領域競賽-優良專題作品組優等獎」，題目：基於三維深度之手勢手指互動系統與晶片設計，Dec. 13, 2014.
7. 指導學生周世穎同學榮獲「2014 年中華民國民生電子學會碩士論文獎」，論文題目: 基於深度與色彩資訊之三維自然使用者介面設計與晶片實現，Nov. 29, 2014.
8. 指導學生吳書賢、林益興榮獲「2014 年第四屆全研科技論文獎」優良創意作品獎，論文題目: 應用色彩校正演算法強化全景接圖顯示系統，Nov. 1, 2014.
9. 榮獲「103 年度科技部工程司技術及知識應用型產學合作計畫-電子資通領域」產學成果傑出獎，Oct. 29, 2014.
10. 指導學生王竣弘同學榮獲「2014 年第 11 屆台灣資訊儲存碩士班學生論文獎」，論文題目: 基於複雜背景資訊之手勢互動介面設計與晶片實現，Oct. 20, 2014.
11. 指導學生呂俊璋、王思婋同學榮獲「2014 年科技部運用於高階量測儀器之積體電路設計競賽-數位電路設計組」優等獎，Sept. 19, 2014.
12. 102 學年度國立台北科技大學電資學院優良教學獎，June 18, 2014.
13. 指導學生參加台北科技大學電子工程系「102 學年度林宏裕校友實務專題製作競賽」榮獲優等獎，獲獎學生姓名：王昱程、黃柏豪、鄭麗娟，競賽題目：虛擬指揮家(Virtual Conductor), May 30, 2014.
14. 榮獲「張孫堆先生鼓勵教師實務研究優良成果獎勵」，Feb. 14, 2014.
15. 102 學年度國立臺北科技大學陽光獎助金競賽成績優良獎，2013.
16. 指導學生黃聖翔榮獲「2013 年中華民國資訊學會最佳碩博士論文獎」，Dec. 28, 2013.
17. 指導學生黃聖翔、劉弘寬榮獲「2013 年第三屆全研科技論文獎」優良創意作品獎，論文題目: 雙手自然使用者介面設計與系統實現，Oct. 19, 2013.
18. 榮獲「102 年度國科會工程處技術與知識應用型產學合作計畫-電子資通領域」產學成果傑出獎，Oct. 18, 2013.
19. 指導學生張立承同學榮獲「2013 年第 10 屆台灣資訊儲存碩士班學生論文獎」，論文題目:基於深度影像重建技術實現二維至三維轉換系統與晶片設計，Oct. 22, 2013.
20. 指導學生張立承同學榮獲「2013 年中華民國民生電子學會碩士論文獎」，論文題目:基於深度影像重建技術實現二維至三維轉換系統與晶片設計，Sept. 16, 2013.
21. 指導學生黃聖翔同學榮獲「2013 年中華民國民生電子學會碩士論文獎」，論文題目: 雙手自然使用者介面設計與晶片實現，Sept. 16, 2013.
22. 指導學生黃聖翔、沈德威、張立承榮獲第十三屆旺宏金矽獎設計組優勝獎，競賽題目：立體清明上河圖互動展示系統與晶片實現(Chip Implementation of Three-dimensional “Along the River During the Qingming Festival” Generator and Interactive Exhibition System) , July 27, 2013.

23. 指導學生劉弘寬、沈德威榮獲第十三屆旺宏金矽獎設計組優勝獎，競賽題目：結構光法近物深度量測重建系統與晶片實現(Structured Light Chip Design for Depth Map Measurement for Three Dimensional Image System) , July 27, 2013.
24. 榮獲 IEEE Senior Member, April 27, 2013.
25. 2013 IEEE ISNE Best Paper Award (IEEE ISNE 最佳論文獎), "Stereoscopic Visual System for 2D to 3D Conversion System," *2013 IEEE International Symposium on Next-Generation Electronics*, ISNE 2013, Kaohsiung, Taiwan, February 25-26, 2013.
26. 指導學生陳玠霖榮獲「2012 年中華民國資訊學會最佳碩博士論文獎」, Nov. 14, 2012.
27. 指導學生呂志益(Chih-I Lu)榮獲 2012 International Innovation and Invention Conference Thesis Award (Honorable Mention), Taipei, Taiwan, Aug. 16,2012.
28. 100 學年度國立臺北科技大學陽光獎助金競賽成績優良獎, 2011.
29. 榮獲「98 及 99 年度國科會工程處技術與知識應用型產學合作計畫-電資通訊領域」產學成果傑出獎，Nov. 1, 2011.
30. 指導學生參加「2011 年教育部大學院校積體電路 IC 設計競賽」榮獲「研究所組標準元件數位電路設計」之設計完整獎，獲獎學生姓名：陳玠霖、邱奕誌，July 15, 2011.
31. 指導學生參加台北科技大學電子工程系「99 學年度林宏裕校友實務專題製作競賽」榮獲優等獎，獲獎學生姓名：范正緯、李冠甫，競賽題目：三維立體互動式影像遙控系統, June 3, 2011.
32. 2010 APDSC Outstanding Poster Award (APDSC 最佳論文獎), "3D Auto-stereoscopic Image Recording, Mapping and Synthesis System for Multi-view 3D Display," *2010 International Asia-Pacific Data Storage Conference*, APDSC 2010, Hualien, Taiwan, Oct. 27~29, 2010.
33. 2010 CIASPCD Best Paper Award (CIASPCD 最佳論文獎), "Chip Design and Implementation of Depth Map Reconstruction for 3DTV System," *2010 Conference on Innovative Applications of System Prototyping and Circuits Design*, Taoyuan, Taiwan, Oct. 15, 2010.
34. 2010 CIASPCD Best Paper Award (CIASPCD 最佳論文獎), "Multiple Motion Objects Detection for Intelligence Surveillance System," 2010 Conference on Innovative Applications of System Prototyping and Circuits Design, Taoyuan, Taiwan, Oct. 15, 2010.
35. 98 學年度國立台北科技大學電子系傑出教學獎(電子系頒發), 2010.
36. 指導學生參加台北科技大學電子工程系「98 學年度林宏裕校友實務專題製作競賽」榮獲優等獎，獲獎學生姓名：廖翊君、王齡毅、張柏勛，競賽題目：三維立體影像轉換晶片。
37. 指導學生參加台北科技大學電子工程系「98 學年度林宏裕校友實務專題製作競賽」榮獲佳作獎，獲獎學生姓名：康耀中，競賽題目：Cell-Based 基本數位像框 IC 設計與雲端技術運用。
38. 指導學生參加台北科技大學電子工程系「98 學年度林宏裕校友實務專題製作競賽」榮獲佳作獎，獲獎學生姓名：陳泳旭、鐘仁甫，競賽題目：巡邏自走車之避障規劃與遠端呈現。
39. 98 年度國立台北科技大學電資學院研究躍升獎, 2010.
40. Certificate of Who's Who in the World (Marquis Who's Who), 2010.
41. Certificate of Who's Who in the World (Marquis Who's Who), 2009.

(i)其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

王多柏 教授

實驗 (研究) 室名稱：無線通訊實驗室

聯絡電話：ext: 2284

e-mail：tpwang@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~tpwang/

研究聚焦領域：☐ H：健康科技　■ I：智慧整合科技
☐ G：綠色科技　☐ H：人文與創新元素

專長：1. 射頻、微波、毫米波積體電路設 2. 低耗電電子電路設計

1.近年重要論文及著述

(a) 期刊論文**國外期刊論文: (通訊作者加註*)**

1 **T. P. Wang*** and Y. M. Yan, "A low-voltage low-power wide-tuning-range hybrid class-AB/class-B VCO with robust start-up and high-performance FOM_T," *IEEE Transactions on Microwave Theory and Techniques***.** vol. 62, no. 3, pp. 521-531, Mar. 2014. **(SCI) (EI)** (Impact Factor: 2.943, **Cited: 1**) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=30/247(12.15%)**)

2 **T. P. Wang***, "Minimized device junction leakage current at forward-bias body and applications for low-voltage quadruple-stacked common-gate amplifier," ***IEEE Transactions on Electron Devices***, vol. 61, no. 5, pp. 1231-1236, May 2014. **(SCI) (EI)** (Impact Factor: 2.358) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=44/247(17.8%)**)

3 **T. P. Wang*** and Z. W. Li, "Significant reduction of electromagnetic interference for fine-motion control rod drive in a nuclear reactor," ***IEEE Transactions on Industrial Electronics*****,** vol. 61, no. 10, pp. 5582-5589, Oct. 2014. **(SCI) (EI)** (Impact Factor: 6.5) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=2/247(0.8%)**)

4 **T. P. Wang*** and S. Y. Wang, "Frequency-tuning negative-conductance boosted structure and applications for low-voltage low-power wide-tuning-range VCO," ***IEEE Transactions on Very Large Scale Integration (VLSI) Systems*****,** (Accepted) (June 17, 2014). **(SCI) (EI)** (Impact Factor: 1.142,) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=136/247(55%)**)

5 **T. P. Wang***, Z. W. Li, and H. Y. Tsai, "Performance Improvement of 0.18-μm CMOS microwave amplifier using micromachined suspended inductors: theory and experiment," ***IEEE Transactions on Electron Devices***, vol. 60, no. 5, pp. 1738-1744, May 2013. **(SCI) (EI)** (Impact Factor: 2.358, **Cited: 1**) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=44/247(17.8%)**)

6 **T. P. Wang*, "**A CMOS Colpitts VCO Using Negative-Conductance Boosted Technology," ***IEEE Transactions on Circuits and Systems-Part I, Regular Papers***, vol. 58, no. 11, pp. 2623-2635,

Nov. 2011. **(SCI) (EI)** (Impact Factor: 1.97, **Cited: 6**)) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=52/245(21.22%)**)

7 **T. P. Wang***, "A fully integrated W-band push-push CMOS VCO with low phase noise and wide tuning range," ***IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*****,** vol. 58, no. 7, pp. 1307-1319, July 2011. **(SCI) (EI)** (Impact Factor: 1.694, **Cited: 5**) (ENGINEERING, ELECTRICAL & ELECTRONIC, **IF Ranking=63/245(25.7%)**) (ACOUSTICS, **IF Ranking=6/30(20%)**)

李文達 副教授

實驗 (研究)室名稱：超大型積體電路設計實驗室

聯絡電話：(02)27712171 轉 2233

e-mail：wtlee@mail.ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~wtlee/

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. 積體電路設計 2. 通訊 IC 設計 3._____ 4._____

1.近年重要論文及著述

(a) 期刊論文

[1] **Wen-Ta Lee** and Yao-Chang Chang, "Turbo Decoder Design Employing a New Phase Estimation Hard Decision Stopping Criterion Method," *International Journal of Computer Theory and Engineering*, Vol. 4, No. 6, pp. 963-966, December 2012.

[2] **Wen-Ta Lee** and Yi-Zhen Liao, "A NOVEL MULTI-FUNCTION FILTER CHIP USING DDCC AND OTA," *Far East Journal of Electronics and Communications*, Vol. 3, Issue 3, pp.217-225, 2009. (EI)

[3] Yi-Zhen Liao, Hua-Pin Chen, and **Wen-Ta Lee**, "Versatile universal voltage -mode filter employing minimum components," IEICE Electronics Express, Vol. 6, No. 17, pp.1246-1252, 2009.(SCI, EI)

[4] Yi-Zhen Liao, Hua-Pin Chen, and **Wen-Ta Lee**, "Voltage-mode highpass, bandpass and lowpass filters using plus-type DDCCs and grounded passive components," *Far East Journal of Electronics and Communications*, Vol. 3, Issue 3, pp.251-259, 2009. (EI)

[5] Hua-Pin Chen, Yi-Zhen Liao, and **Wen-Ta Lee**, "Tunable mixed-mode OTA-C universal filter," *Analog Integrated Circuits and Signal Processing*, Vol. 58, Issue 2, pp.135-141 2009. (SCI, EI)

(b) 研討會論文

[1] **Wen-Ta Lee**, 鄭炘元和林敬傑, "類比式一維及新型二維正規化最小和低密度同位元校驗碼解碼器晶片設計," in Proc. of *The 2013 Workshop on Consumer Electronics*, Paper-ID CC-047, Nov. 22-23. 2013.

[2] **Wen-Ta Lee**, Sheng-Sung Chiu and Yu-Shi Ke, "IC Design of a Low-power Analog LDPC Decoder Employing New Stopping Iteration Method," in *Proc. of The 2013 IEEE International Conference on Green Computing and Communications(IEEE GreenCom 2013)*, Aug. 20-23, 2013, Beijing, China, pp. 311-313. (EI)

[3] **Wen-Ta Lee**, 洪坤榮和林敬傑, "具快速暫態響應之無輸出電容低電壓調整器晶片設計," in Proc. of *2012 Workshop on Consumer Electronics*, Nov. 16, 2012, SII3-3.

[4] **Wen-Ta Lee**, 黃紹瑋和林敬傑, "具高電流單頻電荷之幫浦晶片研製," in Proc. of *2012 Workshop on Consumer Electronics*, Nov. 16, 2012, SII4-1.

[5] **Wen-Ta Lee**, 邱筠賀和林敬傑, "供 D 類放大器用之高取樣脈波寬度調變晶片設計," in Proc. of *2012 Workshop on Consumer Electronics*, Nov. 16, 2012, SIV1-3.

[6] **Wen-Ta Lee**, Sheng-Sung Chiu and Yu-Xi Ke, "IC Design of an Analog Min-Sum LDPC Decoder Employing New Stopping Iteration Method," in Proc. of *2012 Conference on Photonics and Communications*, Taiwan, Oct. 26, 2012, pp. 352-356.

[7] **Wen-Ta Lee**, Sheng-Sung Chiu and Cheng-Hao Tsai, "Chip Implementation of an Analog Array Sum-Product Decoder for (8,4) LDPC codes," in Proc. of *2012 Conference on Photonics and Communications*, Taiwan, Oct. 26, 2012, pp. 361-366.

[8] **Wen-Ta Lee**, Min-Sheng Chang and Wei-Chieh Shen, "A New Low Latency Parallel Turbo Decoder Employing Parallel Phase Decoding Method," in Proc. of *2012 Algorithms and Architectures for Parallel Processing*, Sep. 4-7, 2012, pp. 130-139, Fukuoka, Japan. (EI)

[9] **Wen-Ta Lee**, Wei-Chieh Shen and Min-Sheng Chang, "A New Low Latency Parallel Turbo Decoder with Synchronous Output," in Proc. of *2012 VLSI Design _CAD symposium*, Taiwan, Aug. 7-10, 2012, P-2

[10] **Wen-Ta Lee** and S. E. Hong, "Chip Implementation of a Capacitor-Free LDO with Improved Immunity against Process Variations," in Proc. of *2012 VLSI Design _CAD symposium*, Taiwan, Aug. 7-10, 2012, P-24.

[11] **Wen-Ta Lee**, Lung-Sheng Chang and Hsin-Yuan Cheng, "Chip Design of New Analog LDPC Decoder," in Proc. of *2012 National Symposium on Telecommunications*, Taiwan, Nov. 16-17, 2012, C5-3.

[12] **Wen-Ta Lee** and Jian-Liang Che, "Chip Design of an Analog Sum-Product Decoder for (8,4) LDPC Codes," in Proc. of *2011 VLSI Design/CAD Symposium*, Aug 2-5, 2011, pp. 456-459.

[13] **Wen-Ta Lee** and Yao-Chang Chang, "Turbo Decoder Design Employing a New Phase Estimation Hard Decision Stopping Criterion Method," in Proc. of *2011 4th IEEE International Conference on Computer Science and Information Technology (ICCSIT 2011)*, Chengdu, China, 10-12 June 2011, pp. 237-240.

[14] **Wen-Ta Lee**, Liang-Hong Lin and Yuh-Shyan Hwang, "Chip Design of Low-Quiescent-Current Pseudo-Digital Error Amplifier Low Dropout Voltage Regulator with Damping Detection Circuit," in Proc. of *2010 International Conference on High-Speed Circuits and Design*, Taiwan, 28-29 Oct. 2010, pp. 98-102.

[15] **Wen-Ta Lee**, Wen-Cheng Chen, and Kai-Tzeng Chiou, "A 3g sample/s modified low power flash ADC with frequency synthesizer," in Proc. of *2010 International Conference on High-Speed Circuits and Design*, Taiwan, 28-29 Oct. 2010, pp. 90-93.

[16] **Wen-Ta Lee**, Yu-Pin Wang, and Yi-Zhen Liao "Chip Design of a New Voltage-mode Multi-function Biquad Filter Using Current-mode Elements," in Proc. of *2010 Innovative*

Applications of System Prototyping and Circuit Design, Ching Yun University, 15 Oct. 2010, pp.49-52.

[17] **Wen-Ta Lee**, Guo-Cun Jheng, and Kai-Tzeng Chiou, "Chip design of 1MHz ~ 2GHz for universal frequency synthesize," in Proc. of *2010 Innovative Applications of System Prototyping and Circuit Design*, Ching Yun University, 15 Oct. 2010, pp.246-250.

[18] **Wen-Ta Lee** and Chi-Wei Chang, "Chip design of analog iterative decoder for a (8,4) LDPC code," in *proc. of 2010 VLSI Design/CAD Symposium*, Aug 3-6, 2010, pp. 287-290.

[19] **Wen-Ta Lee** and Kai-Tzeng Chiou, "Chip Design of New Low Power Flash ADC Employing Voltage Reference-Selection Method" in *Proc. of The 25th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2010)*, pp. 672-675, July 4-7, 2010, Pattaya, Thailand.

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

- **學生曾獲之獎項及特出之表現：**

1. 指導四技部學生王信傑參加2014年國立台北科技大學林宏裕校友實務專題競賽**榮獲佳作獎**，題目：改良型快速暫態及低負載調整率之低壓降電壓調整器設計。(6/2014)
2. 指導四技部學生鄭翰揚參加2014年國立台北科技大學林宏裕校友實務專題競賽**榮獲佳作獎**，題目：定電流穩定單頻電荷幫浦之積體電路架構設計。(6/2014)
3. 指導四技部學生陳泓翰參加2013年國立台北科技大學林宏裕校友實務專題競賽**榮獲優等獎**，題目：具快速暫態及高電源拒斥之無輸出電容低壓降電壓調整器。(6/3/2013)
4. 指導四技部學生陳泓翰參加2013 電子,信號,與通訊創新科技研討會**榮獲優良壁報論文獎**，題目：具快速暫態及高電源拒斥之無輸出電容低壓降電壓調整器。(5/31/2013)
5. 指導四技部學生洪祥恩參加2012年國立台北科技大學第六屆電資學院實務專題競賽－**競賽榮獲金手獎佳作獎**。題目：抗製程變異無輸出電容之低壓降電壓調整器設計。(4/27/2012)
6. 指導四技部學生洪坤榮參加2012年國立台北科技大學林宏裕校友實務專題競賽**榮獲甲等獎**，題目：快速瞬態響應之無輸出電容低壓降電壓調整器設計。(6/1/2012)
7. 指導四技部學生黃紹瑋參加2012年國立台北科技大學林宏裕校友實務專題競賽**榮獲佳作獎**，題目：高電流單頻電荷幫浦。(6/1/2012)
8. 指導四技部學生邱筠賀參加2012年國立台北科技大學林宏裕校友實務專題競賽**榮獲佳作獎**，題目：高取樣D類放大器之脈波寬度調變系統晶片設計。(6/1/2012)

9. 指導四技部學生張傑參加2012年國立台北科技大學林宏裕校友實務專題競賽**榮獲佳作獎**，題目：應用於生醫系統之類比前端電路之電流模式儀表放大器的改良與模擬。(6/1/2012)
10. 指導四技部學生洪祥恩參加2011年國立台北科技大學林宏裕校友實務專題競賽**榮獲優等獎**，題目：抗製程變異無輸出電容之低壓降電壓調整器設計。(6/1/2011)
11. 指導四技部學生王渝頻，參加2011年國立台北科技大學第四屆電資學院實務專題競賽－**競賽榮獲金手獎第二名**。 (5/16/2011)
12. 指導四技部學生陳欣壯，參加2008年國立台北科技大學第四屆電資學院實務專題競賽－**競賽榮獲金手獎第一名**。 (3/26/2010)
13. 指導四技部學生邱凱增，參加2008年國立台北科技大學第四屆電資學院實務專題競賽－**競賽榮獲金手獎第二名**。 (3/26/2010)
14. 指導四技部學生洪祥恩參加2011年國立台北科技大學林宏裕校友實務專題競賽**榮獲優等獎**，題目：抗製程變異無輸出電容之低壓降電壓調整器設計。(6/1/2011)
15. 指導四技部學生林良鴻，參加2010年國立台北科技大學林宏裕校友實務專題競賽**榮獲甲等獎**,題目：具有阻尼感測電路的低功率虛擬數位式低壓降穩壓器及切換式直流-直流轉換器晶片設計。(6/1/2010)
16. 指導四技部學生王渝頻，參加2010年國立台北科技大學林宏裕校友實務專題競賽**榮獲甲等獎**,題目：運用電流式元件組合新型二階多功能電壓式濾波器晶片設計。(6/1/2010)
17. 指導四技部學生陳文政，參加2010年國立台北科技大學林宏裕校友實務專題競賽**榮獲佳作獎**，題目：內含頻率合成器之每秒取樣三十億次改良型低功率快閃式類比數位轉換器。(6/1/2010)

李士修 副教授

實驗 (研究) 室名稱：電磁波實驗室

聯絡電話：02-2771-2171 轉 2285

e-mail：ericli@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~ericli/

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技

□ G：綠色科技 □ H：人文與創新元素

專長：1. 電磁波散射 2. 微波電路 3. 雷達遙測 4. 高頻量測及校正技術

1.近年重要論文及著述

(a)期刊論文

1. **Li*, Eric S.**, Jui-Ching Cheng, and Yu-Cheng Lin, "Measurement Technique for Symmetrical Reciprocal Three-Port Devices Using Two-Port Vector Network Analyzer," *IEEE Trans. Instrum. Meas.*, Vol. 62, No. 10, pp. 2773-2783, Oct. 2013.
2. **Li*, Eric S.**, Gui-Xiang Tong, and Dow Chih Niu, "Full *W*-Band Waveguide-to-Microstrip Transition with New *E*-Plane Probe," *IEEE Microw. Wireless Compon. Lett.*, Vol. 23, No. 1, pp. 4-6, Jan. 2013.
3. **Li, Eric S.**, Jui-Ching Cheng, and Wei-Yu Tai, "Extending the Operation Frequencies of Standard Coaxial-to-Microstrip Connectors," *Microw. Opt. Technol. Lett.*, Vol. 54, No. 12, pp. 2716-2719, Dec. 2012.
4. Cheng, Jui-Ching, **Eric S. Li***, and Yu Jia Huang, "Designs of Bandwidth-Controllable Impedance Transformers Using Dual Transmission Lines," *Electron. Lett.*, Vol. 48, No. 15, pp. 931-932, July 2012.
5. Cheng, Jui-Ching and **Eric S. Li***, "Method of Moments with an Equivalent Green's Function Technique for Modelling Broadband Cavity-coupled Microstrip Vertical Transitions," *IET Microwaves Antenna & Propag.*, Vol. 5, Iss. 15, pp. 1863-1871, Dec. 2011.
6. Cheng, Jui-Ching, **Eric S. Li***, and Chin-Chung Chuang, "Application of Microstrip Cavity Couplers for Wideband Bandpass Filters," *Microw. Opt. Technol. Lett.*, Vol. 53, No. 12, pp. 2814-2817, Dec. 2011.
7. Cheng, Jui-Ching, **Eric S. Li***, Wen-Fu Chou, and Kuan-Lin Huang, "Improving the High-Frequency Performance of Coaxial-to-Microstrip Transitions," *IEEE Trans. Microw. Theory Tech.*, Vol. 59, No. 6, pp. 1468-1477, June 2011.

(b)研討會論文

1. Lan, W.-S., D.-C. Niu, and **Eric S. Li***, "'Designs for Multi-Port Bifurcated Waveguide Power Dividers at Millimeter-Wave Frequencies," *USNC/URSI National Radio Science Meeting*, Orlando, Florida, July 2013.

2. Liu, Y.-S., D.-C. Niu, and **Eric S. Li***, "Three-Port *E*-Plane Bifurcated Waveguide Power Divider at Millimeter-Wave Frequencies," *Proc. Asia-Pacific Microw. Conf.*, Kaohsiung, Taiwan, Dec. 2012.
3. Yeh, W.-H., T.-C. Chiu, **Eric S. Li***, Y.-A. Liou, M.-Q. Chen, and C.-Y. Huang, "Ray Tracing Simulations for GPS Radio Occultation in Non-spherically Symmetric Atmosphere with ECMWF Analysis," *Proc. IEEE Int. Geosci. Remote Sensing Symp.*, Munich, Germany, July 2012.
4. **Li*, Eric S.** and C.-P. Chou, "Broad-Band Microstrip Power Dividers Using a Cavity Coupler," *Proc. IEEE Int. Antennas Propagat. Symp.*, Spokane, Washington, July 2011.
5. **Li*, Eric S.** and C.-P. Chou, "Designs for Broad-Band Cavity-Coupled Microstrip Directional Couplers," *Proc. IEEE Int. Antennas Propagat. Symp.*, Spokane, Washington, July 2011.

(c)專利

1. "Connector Used for Connecting a Coaxial Cable and a Microstrip," U.S.A., patent no. 8152534B1, Apr. 10, 2012.
2. "連接器" 中華民國，專利號碼 **I381599**，中華民國 102 年 1 月 1 日。
3. "Coaxial Line to Microstrip Connector Having Slots in the Microstrip Line for Receiving an Encircling Metallic Plate," U.S.A., patent no. 8384492 B2, Feb. 26, 2013.
4. "應用於電子元件之電容式連接結構" 中華民國，專利號碼 I470752，中華民國 104 年 1 月 21 日。

(d)技術移轉

(e)專書及專章

(f)作品

(g)研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

1. Designs for Broadband Transdirectional Coupled-line Couplers, MOST 103-2221-E-027 -013 -.
2. Design for Five-Port *E*-Plane Bifurcated Waveguide Power Divider, CSIST, 2013.
3. Designs of Narrow-band, Broad-band, and Dual-band Impedance Transformers Using Periodical Structures, NSC 101-2221-E-027 -101.
4. Design for Three-Port *E*-Plane Bifurcated Waveguide Power Divider, CSIST, 2012.
5. Enhancing the 1-dB Passband of Coaxial-to-Planar Transmission Line Transitions Using Substrate-Integrated Waveguides, NSC 100-2221-E-027 -104.
6. On the Critical Technology Research for Extremely High-Frequency Components, NSC 100-2623-E-009 -005 -D.
7. On the Critical Technology Research for Radar Electronic Protection, NSC 98-2623-E-009-002-D.
8. Designs for Broadband Cavity-Coupled Microstrip Impedance Transformers, Power Dividers, and Directional Couplers, NSC 97-2221-E-027-015-MY3.

(h)獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 國立臺北科技大學-電資學院 100 年度研究躍升獎。

2. 國立臺北科技大學-電子工程系 101 年度林宏裕校友實務專題競賽佳作獎。
3. 國立臺北科技大學-電子工程系 102 年度林宏裕校友實務專題競賽佳作獎。

(i)其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

國立臺北科技大學百週年校慶成果展－各式 SMA 接頭。

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

廖元甫 副教授

實驗 (研究) 室名稱：語音訊號處理實驗室
聯絡電話：02-27712171 ext. 2247
e-mail：yfliao@ntut.edu.tw
網址：http://www.ntut.edu.tw/~yfliao

專長

1.語音訊號處理	2.音訊訊號處裡	3.語音辨認	4.語音合成

1.近年重要論文及著述

(a)期刊論文

(1) Yuan-Fu Liao, Jyh-Her Yang and Sin-Horng Chen, "Soft-decision A Priori Knowledge Interpolation for Robust Telephone Speaker Identification", Journal of the Chinese Institute of Engineers, 2009/8

(2) 方偉德、林修德、廖元甫, 基於機率線性鑑別分析之強健式語者驗證系統, International Journal of Science and Engineering (IJSE), Vol. 4, Issue 1, pp.331-334, 2014

(3) Chen, S.-H. , Hsieh, C.-H. ; Chiang, C.-Y. ; Hsiao, H.-C. ; Wang, Y.-R. ; Liao, Y.-F. ; Yu, H.-M., Modeling of Speaking Rate Influences on Mandarin Speech Prosody and Its Application to Speaking Rate-controlled TTS, IEEE Trans. on Audio, Speech and Language Processing, Vol. 22, Issue 7, 1158 - 1171, 2014

(b)研討會論文

(1) Yuan-Fu Liao, Shuan-Chen Yeh, Ming-Feng Tsai, Wei-Hsiung Ting, and Sen-Chia Chang, Latent Prosody Model-Assisted Mandarin Accent Identification, ROCLING'2009

(2) Chia-yu Chiu , Yuan-fu Liao , Daniel K?lls , Hansjoerg Mixdorff , Shing-lung Chen, A Preliminary Study on Corpus Design for Computer-Assisted German and Mandarin Language Learning, O-COCOSDA'2009

(3) Chia-yu Chiu, Yuan-fu Liao, Hansjoerg Mixdorff, Hue-San Do, Shing-lung Chen, Perceptual Evaluation on Mandarin Production of German Secondary Language Learner, International Symposium on Asian Speech Resources 2009

(4) Yuan-Fu Liao and Ming-Long Wu, The NTUT Blizzard Challenge 2009 Entry, Blizzard Challenge Workshop 2009

(5) 楊志民、王瑞璟、廖元甫，基於機率主成份分析之強健性語音辨認, NST'2009

(6) 林家興、陳彥廷、廖元甫，基於改良特徵參數之強健性聲音事件辨識系統, NST'2009

(7) 陳仕錚、吳明龍、廖元甫，快速次頻帶最大概似機率麥克風陣列演算法, NST'2009

(8) 許溢允、陳韋宇、廖元甫，次頻帶最小語音辨認錯誤率波束成形演算法, NST'2009

(9) 蔡明峰、丁偉雄、廖元甫，NTUT LRE 2009 語言辨認系統, NST'2009

(10) You-Yu Lin, Yih-Ru Wang, Yuan-Fu Liao, PHONE BOUNDARY DETECTION USING SAMPLE-BASED ACOUSTIC PARAMETERS, InterSpeech'2010

(11) Yuan-Fu Liao, Ming-Long Wu and Shao-He Lyu, The NTUT Blizzard Challenge 2010 Entry, Blizzard Challenge Workshop 2010

(12) Yuan-Fu Liao and I-Yun Xu, SUBBAND MINIMUM CLASSIFICATION ERROR BEAMFORMING FOR SPEECH RECOGNITION IN REVERBERANT ENVIRONMENTS, ICASSP'2010

(13) 黃重傑、呂紹禾、廖元甫基於調頻諧波加雜訊模型之強健性基頻求取，NST2010

(14) 林家興、方偉德、廖元甫、林政賢，基於鑑別式特徵參數求取之強健性聲音事件分類，NST2010

(15) 陳仕錚、莊皓程、廖元甫、廖憲正，快速次頻帶最大概似機率之麥克風陣列演算法之進一步改良，NST2010

(16) 李文森、丁偉雄、廖元甫、涂家章，基於聯合因素分析之語者辨認系統 NST2010

(17) 王瑞璟、吳聖堂、廖元甫、林政賢，基於聯合語者與雜訊環境因素分析之強健性語音辨認，NST2010

(18) Chia-yu Chiu, Yuan-fu Liao, Hansj?rg Mixdorff , Hue-San Do, Shing-lung Chen, TaiwanL2 German Database Design for Computer Assisted Language Learning, O-COCOSDA'2010

(19) Yuan-Fu Liao, Chia-Hsing Lin, We-Der Fang, Minimum Classification Error Based Spectro-Temporal Feature Extraction For Robust Audio Event Classification, InterSpeech'2011

(20) Chen-Yu Chiang, Jyh-Her Yang, Ming-Chieh Liu, Yih-Ru Wang, Yuan-Fu Liao, Sin-Horn Chen, A New Model-based Mandarin-speech Coding System, InterSpeech'2011

(21) Hsien-Cheng Liao, Yuan-Fu Liao, Chin-Hui Lee, Maximum Confidence Measure Based Interaural Phase Difference Estimation for Noise Masking in Dual-Microphone Robust Speech Recognition, InterSpeech'2011
(22) 吳明龍、林佳琪、廖元甫，以理解度為基礎之雜訊環境語音合成，NST'2011
(23) 陳彥廷、黃貞倫、廖元甫，以韻律參數為基礎之德語重音/非重音音節辨認初步研，NST'2011
(24) Po-Hsin Huang, Sheue-Ling Hwang, Jan Li Wang and Yuan-Fu Liao, The Interface Development of Chinese DAISY Player Operation Procedure, the International Symposium on Computer, Consumer and Control (IS3C), 2012
(25) Tzu-Hsuan Chiu, Chen-Yu Chiang, Yuan-Fu Liao, Jyh-Her Yang, Yih-Ru Wang and Sin-Horng Chen, Prosody-dependent Acoustic Modeling for Mandarin Speech Recognition, Speech Prosody 2012
(26) Yuan-Fu Liao, Yan-Ting Chen and Jhen-Lun Huang, Multi-Stage Feature Normalization for Robust German Stressed/Unstressed Syllable Classification, Speech Prosody 2012
(27) Yuan-Fu Liao, Chia-Chi Lin and Jiun-Yan Pan, The NTUT Blizzard Challenge 2012 Entry, Blizzard Challenge Workshop 2012
(28) Hussein Hussein, Hansj¨org Mixdorff, Yuan-Fu Liao and R¨udiger Hoffmann, HMM-BASED MANDARIN TONE RECOGNITION - APPLICATION IN COMPUTER-AIDED LANGUAGE LEARNING SYSTEM FOR MANDARIN, ESSV 2012
(29) Yih-Ru Wang, Yuan-Fu Liao, A Conditional Random Field-based Traditional Chinese Base-Phrase Parser for SIGHAN Bake-off 2012 Evaluation, The 2nd CIPS-SIGHAN Joint Conference on Chinese Language Processing 2012
(30) 林佳琪，潘俊言，廖元甫，適用於 DAISY 數位有聲書之中英夾雜語音合成系 統初步實作，NST2012
(31) 李文森，方偉德，廖元甫，基於 Total Variability 之語言驗證系統，NST2012
(32) Yuan-Fu Liao, Ming-Long Wu and Jia-Chi Lin, MAXIMUM INTELLIGIBILITY-BASED CLOSE-LOOP SPEECH SYNTHESIS
(33) FRAMEWORK FOR NOISY ENVIRONMENTS, ICASSP 2013 Yuan-Fu Liao and Jiun-Yan Pan, The NTUT Blizzard Challenge 2013 Entry, Blizzard Challenge Workshop 2013
(34) Yih-Ru Wang, Yuan-Fu Liao, Liang-Chun Chang, Yeh-Kuang Wu, Conditional Random Field-based Parser and Language Model for Traditional Chinese Spelling Checker, The 7th SIGHAN Workshop on Chinese Language Processing (SIGHAN-7) 2013

(c)專利

(1) 張森嘉 Chang Sen Chia Tw, 廖元甫 Liao Yuan Fu Tw, 林政賢 Lin Jeng Shien Tw: 語音辨識的前級偵測系統與方法. / Pre-stage detecting system and method for speech recognition. 財團法人工業技術研究院 Technology Research Institute 新竹縣竹東鎮中興路 4 段 195 號 Tw Jan, 1 2010: TW 094134669
(2) 張森嘉，林政賢，廖元甫，"System and method for detecting the recognizability of input speech signals"， 工研院資通所，美國專利:US7,933,771 B2, date of patent: Apr. 26, 2011
(3) 涂家章 TU JIA JANG, 廖元甫 LIAO YUAN FU: 語音模型的調整方法及其調整模組. / Modifying method for speech model and modifying module thereof. 財團法人工業技術研究院 Technology Research Institute 新竹縣竹東鎮中興路 4 段 195 號 : TW 096144116，Publication Date: 2009-06-01
(4) 涂家章，廖元甫，"語音模型的調整方法及其調整模組"， 工研院資通所，大陸專利: ZL 2007 1 0197138.5
(5) 涂家章，廖元甫，"語音模型的調整方法及其調整模組"， 工研院資通所，美國專利: US 8,126,711 B2, date of patent Feb. 28, 2012

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

(1) 國科會專題研究計畫 98-2221-E-027-081-MY3 先進電腦輔助外國語學習 - 跨華語與德語之口語韻律與發音熟練度評量/測試研究 (2/3)
(2) 國科會專題研究計畫 98-2221-E-027-081-MY3 先進電腦輔助外國語學習 - 跨華語與德語之口語韻律與發音熟練度評量/測試研究 (3/3)
(3) 國科會專題研究計畫 NSC99-2219-E-155-002 應用於遠距協同作業之多模態人機智慧型互動關鍵技術研究--子計畫一：協同作業環境下結合語音與視覺事件偵測之先進議程紀錄與後製系統(I)
(4) 國科會其他案件 99-2911- I-027 -001 NSC-DAAD PPP 以跨語言韻律與發音變異模型為基礎之第二 外國語口語能力測試
(5) 國科會專題研究計畫 100-2631-S-327-003- 適用於德語為母語者及符合歐盟規範之華語旅遊會話教材及教學法暨其學習輔助軟體的整合設計與開發 III--子計畫四:研發任務型華語會話實作及評量系統(1/2)
(6) 國科會專題研究計畫 100-2221-E-009-147- 電腦輔助語言學習中關鍵語音技術之發展

(7) 國科會產學計畫案 100-2631-S-327-004-CC2　產學合作計畫-研發 LiveABC 多人線上第二外語會話評量電玩系統-以輔助悉德國學生學習華語為例 1/2 國科會專題研究計畫 預核案　適用於德語為母語者及符合歐盟規範之華語旅遊會話教材及教學法暨其學習輔助軟體的整合設計與開發 III--子計畫四:研發任務型華語會話實作及評量系統(2/2)

(8) 國科會專題研究計畫　101-2221-E-027-129-　基於篇章韻律模型與最大化內容理解度，適合視障者使用之 DAISY 數位有聲書語音合成系統

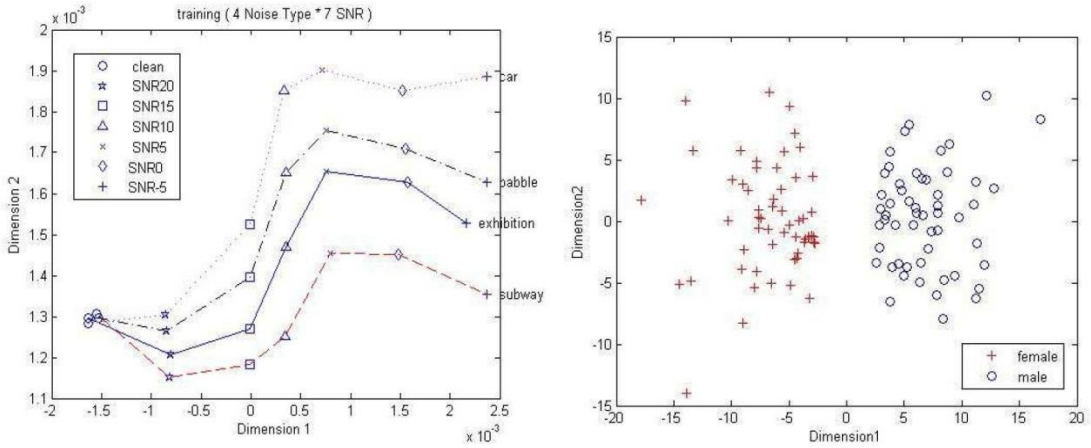
(9) 國科會專題研究計畫　101-2221-E-009-149-MY2　電腦輔助語言學習系統之發展 1/2

(10) 國科會專題研究計畫　101-2221-E-009-149-MY2　電腦輔助語言學習系統之發展 2/2

(11) 國科會專題研究計畫　102-2221-E-027 -070　基於篇章韻律模型與最大化內容理解度，適合視障者使用之 DAISY 數位有 聲書語音合成系統之進一步研究 - 多層式 RST 自動分析標注與語音合成系統 音高音長調適

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

I. 目前處理雜訊問題多使用參數前處理方法，但我們認為使用隱藏式因素分析與 online model adaptation 方法來調整語音辨認模型，可以得到更好的結果，因此我們研究使用先驗知識特徵分析方法，建構如下圖之語言（暫略），語者（左圖）與環境特徵（右圖）空間：

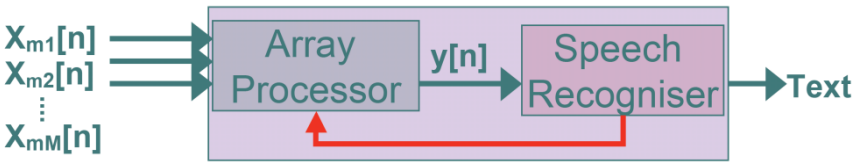


並使其可以在只使用一句測試語料下，大幅提升語音辨認率，所嘗試過的方法包括

(1) Reference model weighting (RMW)，
(2) Eigen-MLLR Environment/Speaker Compensation （Eigen-MLLR）
(3) Reference Eigen-Environment and Speaker Weighting (RESW)
(4) Within-Class Feature normalization (WCFN)
(5) Joint Linguistic, Speaker and Environment analysis (JLSE)

以上結果皆已發表於重要國際會議，JLSE 部分並已投稿至 Electronics Letters 。

II. 目前處理麥克風陣列問題多分開使用語音訊號增強前級與辨認器後級，但我們認為必須直接整合麥克風陣列前級與語音辨認器後級，才可以得到更好的語音辨認結果，因此研究如何將辨認器的錯誤率直接回饋到麥克風調適前級，建構如下圖之整合架構：



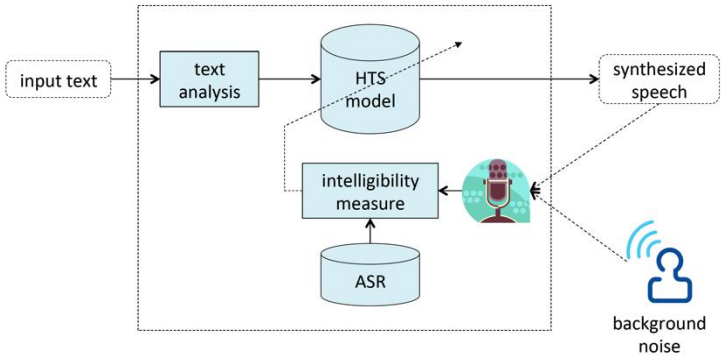
並發展出一監督式與一非監督式方法，包括

- Subband Minimum Classification Error Beamforming for Speech Recognition in Reverberant Environments
- Maximum Confidence Measure Based Interaural Phase Difference Estimation for Noise Masking in Dual-Microphone Robust Speech Recognition
- Maximum confidence measure-based dual-microphone beamforming algorithm for robust speech recognition

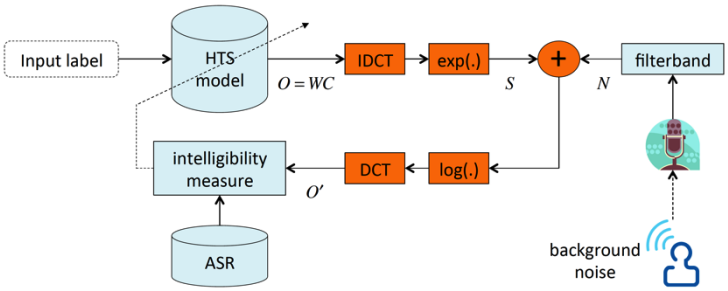
以上結果皆已發表於重要國際會議（ICASSP'2010 與 InterSpeech'2011）。近期並將投稿至期刊

與 Electronics Letters 。

III. 目前在研究語音合成時，多以合成語音之自然度與相似度為出發點。但我們認為在實際日常應用中，反而必須優先考慮使用者對合成語音的實際理解度感受。因此我們為語音合成系統額外加上一收音麥克風與一語音辨認系統，建構出如下圖之最大理解度語音合成架構：

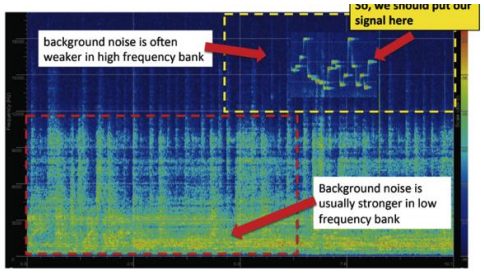


並先針對 HTS 之頻譜模型，發展出如下圖之以最大理解度為基礎之 online 語音合成模型調試方法：



實驗結果顯示使用者的確較容易理解此系統之合成語音，此結果並已發表在重要國際會議（ICASSP'2013）

IV. 2013 年與資策會創新應用服務研究所合作，提出利用聲音做為無線傳輸媒介，其利用人耳聽覺特性，將所要傳送的資訊，埋藏在人耳無法感知之高頻音訊（18～24 kHz）裡，並實際應用在行動裝置資料傳輸上，使商家可以使用既有之揚聲器播放消費資訊，讓消費者在靠近店家時，可即時用手機收到該店家的產品或服務資訊。整個系統已經成功實現在 iOS 裝置上，且確實可以成功傳遞解碼商家訊息。預計將進一步往室內定位與電子信標應用發展。



曾德樟 副教授

實驗 (研究) 室名稱：通訊系統研究室

聯絡電話：(02)2771-2171 ext. 2236

e-mail：dctseng@ntut.edu.tw

網址：http://cce.ntut.edu.tw/files/15-1044-5664,c2679-1.php

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技

□ G：綠色科技 □ H：人文與創新元素

專長：1. 語音加密系統 2. 通訊系統 3. 數位語音信號處理

1.近年重要論文及著述

(a) 期刊論文

[1] Wei-Ho TSAI, Jun-Wei LIN, and Der-Chang TSENG*, "Unsupervised Fingerprint Recognition," IEICE Trans. Inf. and Syst., Vol. E96-D, No. 9, pp. 2115-2125, Sep. 2013. (**SCI, EI**)

[2] Der-Chang Tseng and Jung-Hui Chiu, "An OFDM-based speech encryption system without residual intelligibility," IEICE Trans. Inf. and Syst., Vol. E91-D, No. 11, pp. 2742-2745, Nov. 2008. (**SCI, EI**)

(b) 研討會論文

[1] 林郁璋、曾德樟"利用 LabVIEW 實現新型之資訊藏密技術" in *Proceeding of* NST 2014, pp. 1-4.

[2] 邱俊旺、曾德樟"利用路徑估測法估測多輸入多輸出正交分頻多工系統"in 2011 智慧型數位生活研討會, 2011, pp. 91-96.

[3] 吳星蔚、曾德樟 "結合語音及雜訊統計估測改進之語音增強" in 2011 智慧型數位生活研討會, 2011, pp. 233-239.

[4] D. C. Tseng and J. H. Chiu, "An OFDM speech scrambler without residual intelligibility," in *Proceeding of IEEE TENCON 2007*, 2007, pp. 1-4.

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

獲得各類教學獎項；所指導之學生曾獲之獎項及特出之表現：

[1] 指導四技部學生陳昶毅、王光毅參加 2011 年國立台北科技大學林宏裕校友實務專題競賽榮獲甲等獎，題目 : 機車車牌辨識系統。

[2] 指導四技部學生陳國勝、胡瀚仁參加 2011 年國立台北科技大學林宏裕校友實務專題競賽榮獲佳作獎，題目：使用離散餘弦轉換之數位影像浮水印。

[3] 指導四技部學生林于翔、李鋆洧參加 2011 年國立台北科技大學林宏裕校友實務專題競賽榮獲佳作獎，題目：居家照護無線脈搏量測研究。

譚巽言 副教授

實驗 (研究) 室名稱：嵌入式生醫系統實驗室

聯絡電話：02-27712171-2205

e-mail： sytan@ntut.edu.tw

網址： http://www.ntut.edu.tw/~sytan

專長

1. 計算機結構(如計算機組織、積體電路設計、系統晶片設計、微處理機、數位訊號處理器、記憶體、低功率電路、分散式共享記憶體、多核心系統等)	2. 嵌入式系統(如嵌入式軟體、即時系統、即時作業系統、嵌入式作業系統、微核心作業系統等)	3.非同步邏輯技術	4.VLSI 系統設計

1.近年重要論文及著述

(a)期刊論文

1. Hung-Li Tseng, Chao-Nan Hung, Sun-Yen Tan, Chiu-Ching Tuan, Chi-Ping Lee, Wen-Tzeng Huang* (2013, Aug). Single Camera For Multiple Vehicles License Plate Localization And Recognition On Multilane Highway. *Applied Mechanics and Materials*, Vol. 418, pp 120-123.
2. Wen-Tzeng Huang*, Chao-Nan Hung, Sun-Yen Tan, Chiu-Ching Tuan, Chin-Hsing Chen, Xing-Bao Wang (2013, Aug). IPs Design of FPGA for High-resolution Image Process. *Applied Mechanics and Materials*, Vol. 418, pp 257-260.
3. W.T. Huang, S.Y. Tan, C.W. Chiou, C.C.Tuan, C.H Chang (2013, Jul). On-line Error Detection in a Polynomial Basis Multiplier over GF(2m) Using Self-Checking Alternating Logic. *Journal of Computers*, 24(2), 46-58..
4. W.T. Huang, S.Y. Tan, C.W. Chiou, C.C.Tuan, C.H Chang (2013, Jul). On-line Error Detection in a Polynomial Basis Multiplier over GF(2m) Using Self-Checking Alternating Logic. *Journal of Computers*, Vol. 24, No. 2, pp. 46-58.
5. Chin-Hsing Chen, Yao-Ming Yu, Sun-Yen Tan, Hung-Li Tseng, and Wen-Tzeng Huang* (2013, Feb). Design and Analysis of a Non-vision-based System for Detecting Unstable Gait. *Applied Mechanics and Materials*, Vols. 300-301 (2013) pp 561-565.
6. Hung-Li Tseng, Chin-Hsing Chen, Yuan-Jen Chang, Sun-Yen Tan and Wen-Tzeng Huang* (2013, Feb). The Research of Applying Parallel Streaming Technology on developing Cloud Computing Platform for Delivering Medical Images. *Applied Mechanics and Materials*, Vols. 300-301, pp 1640-1644.
7. Yuan-Jen Chang*, Hung-Li Tseng, Chin-Hsing Chen, Sun-Yen Ta, Bor-Tsung Hsieh,Wei-Lun Chang and Wen-Tzeng Huang (2013, Feb). Development of A CCD-based Optical Computed Tomography Scanner Used in 3D Gel Dosimetry. *Applied Mechanics and Materials* , Vols. 300-301, pp 1632-1635.
8. Yuan-Jen Chang, Hung-Li Tseng, Chin-Hsing Chen, Sun-Yen Tan, Bor-Tsung Hsieh, Wei-Lun Chang and Wen-Tzeng Huang (2013, Feb). Development of A CCD-based Optical Computed Tomography Scanner Used in 3D Gel Dosimetry. *Applied Mechanics and Materials*, 300-301,1632-1635..
9. Chiu-Ching Tuan, Sun-Yen Tan, Hung-Li Tseng, Wen-Tzeng Huang (2013, Jan). Twisted-overlap Differential-pair Approach to Increase Available Layout Space and Reliability in PCB Design. *Applied Mechanics and Materials*, Vols. 284-287, pp. 2531-2537.

10. W. T. Huang*, C. H. Chang, C. W. Chiou, S. Y. Tan, (2011, Sep). Non-XOR approach for low-cost bit-parallel polynomial basis multiplier over GF(2m). *IET Information Security*, 5(3), 152–162..
11. SUN-YEN TAN, WEN-TZENG HUANG (2011, May). An optimization for the design of a simple asynchronous processor. *WSEAS TRANSACTIONS on COMPUTERS*, Issue 5, Volume 10, pp. 156-167. 本人為第一作者、通訊作者.
12. SUN-YEN TAN, WEN-TZENG HUANG (2011, Jan). An evaluation for the design of asynchronous systems. *WSEAS TRANSACTIONS on CIRCUITS and SYSTEMS*, Issue 1, Volume 10, pp. 26-38. 本人為第一作者、通訊作者.
13. Wen-Tzeng Huang , Sun-Yen Tan*, and Yuan-Jen Chang (2010, Oct). A Novel Design Methodology for Reducing Simlutaneous Switching Noise Evaluated by a Differential-IBIS Structure. *Journal of Circuits, Systems, and Computers*, Vol. 19, No. 6, pp. 1275-1297. 本人為通訊作者.
14. Sun-Yen Tan* and Wen-Tzeng Huang (2010, May). A VHDL-based design methodology for asynchronous circuits. *WSEAS TRANSACTIONS on CIRCUITS and SYSTEMS*, , Vol. 9, Issue 5, pp. 315-324. 本人為第一作者、通訊作者.
15. Sun-Yen Tan*, Wen-Tzeng Huang, Chin-Hsing Chen, and Yuan-Jen Chang (2010, May). A Sweeping Fingerprint Verification System using the Template Matching Method. *WSEAS TRANSACTIONS on COMPUTERS*, Vol. 9, Issue 5, pp. 516-525. 本人為第一作者、通訊作者.
16. Wen-Tzeng Huang, Sun-Yen Tan*, Yuan-Jen Chang, and Chin-Hsing Chen (2010, May). A Robust Watermarking Technique for Copyright Protection Using Discrete Wavelet Transform. *WSEAS TRANSACTIONS on COMPUTERS*, Vol. 9, Issue 5, pp. 485-495. 本人為通訊作者.
17. Wen-Tzeng Huang, Sun-Yen Tan*, Yuan-Jen Chang, and Chiu-Ching Tuan (2010, Jan). A Novel Design for Evaluating Simultaneous Switching Noise within an Enhanced IBIS Model. *WSEAS TRANSACTIONS on CIRCUITS and SYSTEMS*, Vol. 9, Issue 1, pp. 42-59. 本人為通訊作者.
18. Wen-Tzeng Huang, Sun-Yen Tan, and Yuan-Jen Chang（2010 年 09 月）。Journal of Circuits, Systems, and Computers (JCSC)。**Journal of Circuits, Systems, and Computers (JCSC)**，19(6), 1275-1297。

(b)研討會論文

1. Sun-Yen Tan and Wen-Tzeng Huang (2010, Oct). The Design of a simple asynchronous processor. The 12th WSEAS International Conference on MATHEMATICAL METHODS AND COMPUTATIONAL TECHNIQUES IN ELECTRICAL ENGINEERING, Timisoara, Romania. 本人為第一作者、通訊作者.
2. Sun-Yen Tan and Wen-Tzeng Huang (2010, Oct). The Design of sharing resources for asynchronous systems. The 12th WSEAS International Conference on MATHEMATICAL METHODS AND COMPUTATIONAL TECHNIQUES IN ELECTRICAL ENGINEERING, Timisoara, Romania. 本人為第一作者、通訊作者.
3. Sun-Yen Tan and Wen-Tzeng Huang (2010, Feb). The Design of an Asynchronous Blocksorter. The 12th International Conference on Networking, VLSI and Signal Processing, University of Cambridge, UK. 本人為第一作者、通訊作者.
4. Sun-Yen Tan, Wen-Tzeng Huang, Chin-Hsing Chen, Yuan-Jen Chang (2010, Feb). Sweeping Fingerprint Verification System Based on Template Matching. The 12th International Conference on Networking, VLSI and Signal Processing, University of Cambridge, UK. 本人為第一作者、通訊作者.
5. Wen-Tzeng Huang, Sun-Yen Tan, Yuan-Jen Chang, Chin-Hsing Chen (2010, Feb). A Discrete Wavelet Transform Based Robust Watermarking for Copyright Protection. The

12th International Conference on Networking, VLSI and Signal Processing, University of Cambridge, UK. 本人為通訊作者.

6. Wen-Tzeng Huang, Sun-Yen Tan, Chin-Hsing Chen, Chiu-Ching Tuan (2009, Dec). A Noise-aware Design and an Enhanced IBIS Model for Evaluating Simultaneous Switching Noise. The 8th WSEAS International Conference on Circuits, Systems, Electronics, Control & Signal Processing, Puerto De La Cruz, Tenerife, Canary Islands, Spain. 本人為通訊作者.
7. 譚巽言, 黃文增*, 曾宏立, 李紀萍, 吳青翰（2013 年 03 月）。高解析度影像感測器之 AFE 模組設計 。2013 資訊教育與科技應用研討會，僑光科技大學, Taiwan。本人為第一作者。
8. 黃文增*, 譚巽言, 洪超男, 段裘慶, 王星堡（2013 年 03 月）。基於 FPGA 之高解析度影像處理 IP 設計。2013 資訊教育與科技應用研討會，僑光科技大學, Taiwan。
9. 曾宏立, 陳錦杏, 王星堡, 譚巽言, 黃文增*（2012 年 04 月）。30-FPS CCD 高畫質攝影機設計高畫質攝影機設計。2012 資訊科技國際研討會暨第二屆網路智能與應用 (2012 AIT)，Taiwan。
10. 黃文增*, 吳稚羚, 譚巽言, 李紀萍, 曾宏立（2012 年 03 月）。具臨床應用價值之可適性感知椅墊的按摩輪椅實作。2012 資訊教育與科技應用研討會，中臺科技大學, 臺中, Taiwan。
11. 曾宏立, 溫又儒, 譚巽言, 黃文增*（2012 年 02 月）。單攝影機-多車道之牌定位演算法設計。2012 智慧電子應用設計研討會，桃園, Taiwan。
12. 林明憲、譚巽言、黃文增、陳建中（2009 年 06 月）。以動態範圍校正實現適應性對比強化。第四屆智慧生活科技研討會，國立勤益科技大學工程館, Taichung, Taiwan。

邱弘緯 副教授

實驗 (研究) 室名稱：無線傳電及生醫晶片系統實驗室

聯絡電話：27712171#2250

e-mail：hwchiu@ntut.edu.tw

網址：https://sites.google.com/site/wirelesspowerlab/

專長

1.無線傳電電力系統	2.生醫晶片系統	3.射頻積體電路	4.專利取得與攻防

1.近年重要論文及著述

(a)期刊論文

1. M.-L. Lin, W.-T. Lin, R.-Y. Huang, T.-C. Chen, S.-H. Huang, C.-H. Chang, S.-Y. Tsai, **H.-W. Chiu**, G.-C. Yeh, C.-W. Lin, Y.-R. Wen, "Pulsed radiofrequency inhibited activation of spinal mitogen-activated protein kinases and ameliorated early neuropathic pain in rats ", European Journal of Pain, Oct., 2013.
2. **H. W. Chiu***, Chien-Chi Lu, Jia-min Chuang, Wei-Tso Lin, Chii-Wann Lin, Ming-Chien Kao and Mu-Lien Lin, "A Dual-Mode Highly Efficient Class-E Stimulator Controlled by a Low-Q Class-E Power Amplifier through Duty Cycle," IEEE Transactions on Biomedical Circuits and Systems, vol. 7, pp. 243-255, June 2013. (SCI) Impact Factor=2.73, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=27/242
3. **H. W. Chiu***, Jia-min Chuang, Chien-Chi Lu, Wei-Tso Lin, Chii-Wann Lin and Mu-Lien Lin, "In situ Measurement of Tissue Impedance Using an Inductive Coupling Interface Circuit," IEEE Transactions on Biomedical Circuits and Systems, vol. 7, pp. 225-235, June 2013 . (SCI) Impact Factor=2.73, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=27/242
4. **H. W. Chiu***, M. L. Lin, C. W. Lin, I. H. Ho, W. T. Lin, P. H. Fang, Y. C. Lee, Y. R. Wen, and S. S. Lu, "Pain Control on Demand Based on Pulsed Radio-Frequency Stimulation of the Dorsal Root Ganglion Using a Batteryless Implantable CMOS SoC," ***IEEE*** *Transactions on Biomedical Circuits and Systems*, vol. 4, pp. 350-359, Dec 2010. (SCI) Impact Factor=2.73, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=27/242
5. Y. H. Wang, K. T. Lin, T. Wang, **H. W. Chiu**, H. C. Chen, and S. S. Lu*, "A 2.1 to 6 GHz Tunable-band LNA With Adaptive Frequency Responses by Transistor Size Scaling," ***IEEE*** *Microwave and Wireless Components Letters*, vol. 20, pp. 346-348, Jun 2010. (SCI) Impact Factor=1.913, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=50/246, Times Cited=0.
6. H. C. Chen and **H. W. Chiu***, "VCO with Miller theorem-based varactors," *IET Electronics Letters*, vol. 46, pp. 990-U52, Jul 2010. (SCI) Impact Factor=0.970, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=124/246, Times Cited=0.
7. H. C. Chen, T. Wang, **H. W. Chiu**, Y. C. Yang, T. H. Kao, G. W. Huang, and S. S. Lu, "A 5-GHz-Band CMOS Receiver With Low LO Self-Mixing Front End," ***IEEE*** *Transactions on Circuits and Systems*

I-Regular Papers, vol. 56, pp. 705-713, Apr 2009. (SCI) Impact Factor=1.420, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=80/246, Times Cited=0.

8. H. C. Chen, T. Wang, **H. W. Chiu**, T. H. Kao, and S. S. Lu, "0.5-V 5.6-GHz CMOS Receiver Subsystem," ***IEEE*** *Transactions on Microwave Theory and Techniques*, vol. 57, pp. 329-335, Feb 2009. (SCI) Impact Factor=2.076, ENGINEERING, ELECTRICAL & ELECTRONIC, Ranking=39/246, Times Cited=0.

(b)研討會論文

1. Chien-Chi Lu, Wan-Ting Tseng, Yi-Li Tseng, Shi-Hang Lin, Kun-Ying Yeh, Shey-Shi Lu , Chen-Tung Yen, Mu-Lien Lin4 and Hung-Wei Chiu, "A High Voltage Stimulator Using a Low-Q Class-E Pulsed Radiofrequency Driver for Animal Study of Relieving Trigeminal Neuralgia Pain", IEEE ISBB, Feb, 2014.
2. P-H.Kuo, J-Y.Hsieh, Y-C. Huang, Y-J.Huang, R-D. Tsai, T.Wang, H-W. Chiu, S-S.Lu, "A Remotely Controlled Locomotive IC Driven by Electrolytic Bubbles and Wireless Powering", IEEE ISSCC, Feb, 2014.
3. Chien-Chi Lu, Yung-Chin Wang and Hung-Wei Chiu, "A Differential Frequency Detector using single PLL for Sensing a Dual-Channel Quartz Crystal Microbalance in Liquids," in Proc. of 2011 IEEE Sensors Conference, pp.1240~1243.Oct. 2012.
4. 斉藤 賢一,呉 銘芳, 邱 弘緯,"ELF 照射がマウスの生理機能におよぼす影響,(The physiological effects of ELF irradiation in mice) ", 第３１回宇宙エネルギーシンポジウムプログラム, Tokyo, Japan , Feb., 2012.
5. 呉 銘芳, 邱 弘緯, 斉藤 賢一, " マイクロ波照射がマウスにおよぼす影響（病理所見からの検討）,(Physiological effects of microwave irradiation in mice) ", 第３１回宇宙エネルギーシンポジウムプログラム,Tokyo, Japan , Feb., 2012.
6. C.-W. Lin, H.-W. Chiu, M.-L. Lin, C.-H. Chang, I-H. Ho, P. -H. Fang, C. -L. Wang, Y. -C Li, Y. -R Wen and S.-S. Lu ,"Pain Control On Demand Based on Pulsed Radio-Frequency Stimulation of the Dorsal Root Ganglion Using a Batteryless Implantable CMOS SoC" IEEE, ISSCC, Feb. 2010. (EI)
7. M.-L. Lin, Chang C.-H., C.-W. Lin, H.-W. Chiu,. Y.-R. Wen, S.-H. Lin, ''Implantable Pulsed-RF on Dorsal Root Ganglion for Treatment of Neuropathic Pain -- Animal study'',WIP 2009, New York. 2009. (c)專利

(d)技術移轉

(e)專書及專章

林佑昇、邱弘緯、梁效彬，2010 年，「RFID 晶片設計」，高立出版社，(ISBN : 9789864128037)。

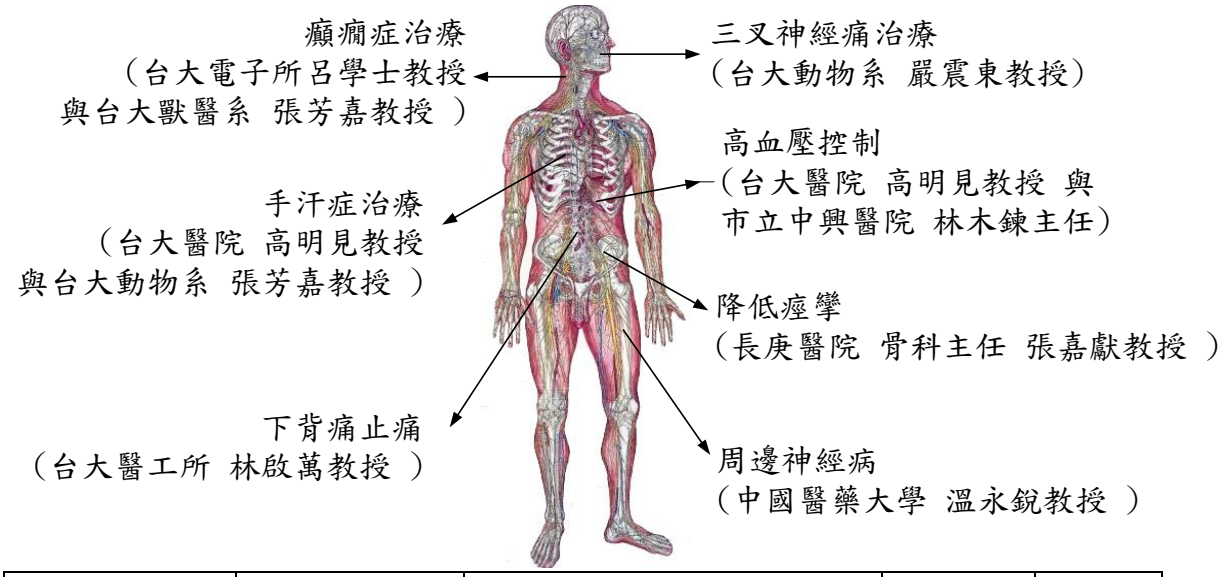
2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

1. 植入式晶片設計:

- **Hung-Wei Chiu***, Mu-Lien Lin, Chii-Wann Lin, I-Hsiu Ho, Wei-Tso Lin, Po-Hsiang Fang, Yi-Chin Lee, Yeong-Ray Wen, and Shey-Shi Lu "Pain Control on Demand Based on Pulsed Radio-Frequency Stimulation of the Dorsal Root Ganglion Using a Batteryless Implantable CMOS SoC", ***IEEE TRANSACTIONS ON BIOMEDICAL CIRCUITS AND SYSTEMS***, vol. 4, no. 6, Dec., 2010

- **Hung-Wei Chiu***, Member, IEEE, Jia-min Chuang, Chien-Chi Lu, Wei-Tso Lin, Chii-Wann Lin and Mu-Lien Lin ,"In situ Measurement of Tissue Impedance Using an Inductive Coupling Interface Circuit", ***IEEE Trans. Biomedical Engineering*** (Accepted , officially published on IEEExplore).
- **Hung-Wei Chiu***, Chien-Chi Lu, Wei-Tso Lin, Chii-Wann Lin and Jia-Min Chuang," A Dual-Mode Highly Efficient Class-E Stimulator Controlled by a Low Q Class-E Power Amplifier through Duty Cycle", ***IEEE Trans. Biomedical Engineering*** (Accepted , officially published on IEEExplore).

- **與各校及研究單位建立生醫植入相關國科會計劃案:**申請人已經陸續與動物實驗及臨床醫師團隊建立合作關係，將完成之刺激器實際應用如下圖之疾病治療當中。下列計畫列表為申請人確定通過實質進行的生物合作計畫，本系邱弘緯教授並皆列為共同主持人，陸續還有計畫申請中。藉由這些前瞻的研究計畫的成果及累積的經驗，期望 植入式生醫系統其未來可以廣泛實現的一日。



主持人	補助單位及專案	計劃名稱	治療之位置	治療之疾病
本系邱弘緯教授	國科會工程處	治療高血壓及手汗症之植入式生醫晶片(II)	交感神經	高血壓及手汗症
台大醫工所 林啟萬教授	國科會鑽石起飛生技專案(執行中)	DRG 植入式射頻脈衝電刺激無線系統晶片於疼痛控制之應用 NSC 99-2321-B-002-034	背根神經節	下背痛
長庚大學骨科教授/長庚醫骨科主任 張嘉獻醫師	國科會一般型計劃(執行中)	植入式射頻脈衝電刺激無線系統晶片於降低痙攣之應用	脊椎	中風，腦麻。
市立聯合聯院 林木鍊醫師	台北市衛生局(執行中)	射頻脈衝電刺激於高血壓控制之研究	腎神經	高血壓
台大獸醫系張芳嘉教授	國科會 101 年度「轉譯醫學研究暨實驗動物模式之建立」(已通過)	植入式交感神經阻斷電刺激晶片在手汗症治療之應用—動物實驗	交感神經	手汗症

2. 射頻電路設計

- **Hung-Wei Chiu**, Yo-Sheng Lin, Yi-Cheng Liu and Shey-Shi Lu, "Temperature and Substrate

Effects in Monolithic RF Inductors on Silicon With 6-um Thick Top Metal for RFIC Applications", ***IEEE Trans. On Semiconductor Manufacturing, vol.19, no.3,pp.316-330, August 2006.***(SCI&EI)

- **H. W. Chiu**, S. S. Lu and Y. S. Lin, "**A 2.17 dB NF, 5 GHz Band Monolithic CMOS LNA with 10 mW DC Power Consumption**," ***IEEE Tran. on Microwave Theory and Technique***, vol.53, no.3, pp.813-824, Mar. 2005
  (Scopus Citation No. > 90)

➢ 本論文在當時完成了全世界最低 2.17db 雜音指數之低雜訊放大器及其理論之描述，

3. 無線傳電技術：開發了多年的實務技術，時常受邀至業界演講。

- P-H.Kuo, J-Y.Hsieh, Y-C. Huang, Y-J.Huang, R-D. Tsai, T.Wang, **H-W. Chiu**, S-S.Lu, "A Remotely Controlled Locomotive IC Driven by Electrolytic Bubbles and Wireless Powering", ***IEEE ISSCC***, ***Feb, 2014.***
- Chien-Chih Lu, I-Hsiu Ho, and **Hung-Wei Chiu***, "A closed-loop wireless charging system using a 89% efficiency rectifier and a 370mA Li-Ion battery charger", 23th VLSI Design / CAD Symposium, Keng-Ting, Taiwan, 2012. **(Best paper candidate)**
- Chii-Wann Lin(台大醫工所), **Hung-Wei Chiu**, etc., ''Pain Control On Demand Based on Pulsed Radio-Frequency Stimulation of the Dorsal Root Ganglion Using a Batteryless Implantable CMOS SoC", ***IEEE, ISSCC, Feb. 2010.***
- I-Hsiu Ho , Jia-min Chung, Hsiao-Chin Chen , **Hung-Wei Chiu***, "A Battery-less Tire Pressure Monitoring System", ***IEEE 69th Vehicular Technology Conference*** ,2009.

黃士嘉副教授

實驗 (研究) 室名稱：多媒體系統實驗室(Multimedia Systems Laboratory)

聯絡電話：+886 2 2771 2171 ext 2289 or 2232

e-mail：schuang@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~schuang/

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技

□ G：綠色科技　□ H：人文與創新元素

專長：1.image and video coding 2.wireless video transmission 3.video surveillance 4.cloud computing

1.近年重要論文及著述

(a) 期刊論文

1. **S. C. Huang**, B. H. Chen and W. J. Wang, "Visibility Restoration of Single Hazy Images Captured in Real-World Weather Conditions," IEEE Transactions on Circuits and Systems for Video Technology, vol. 24, no. 10, pp. 1814-1824, Oct. 2014. [Impact factor: 2.549, rank: 50/248=20.16%]
2. **S. C. Huang**, M. K. Jiau and C. A. Hsu, "A High-Efficiency and High-Accuracy Fully Automatic Collaborative Face Annotation System for Distributed Online Social Networks," IEEE Transactions on Circuits and Systems for Video Technology, vol. 24, no. 10, pp. 1800-1813, Oct. 2014. [Impact factor: 2.549, rank: 50/248=20.16%]
3. **S. C. Huang**, B. H. Chen, and Y. J. Cheng, "An Efficient Visibility Enhancement Algorithm for Road Scenes Captured by Intelligent Transportation Systems," IEEE Transactions on Intelligent Transportation Systems, vol. 15, no. 5, pp. 2321-2332, Oct. 2014. [Impact factor: 2.935, Rank: 8/124=6.45%]
4. **S. C. Huang** and W. C. Chen, "A New Hardware-Efficient Algorithm and Reconfigurable Architecture for Image Contrast," IEEE Transactions on Image Processing, 2014, vol. 23, no. 10, pp. 4426-4437, Oct. 2014. [Impact factor: 3.925, Rank: 27/248=10.88%]
5. B. H. Chen, and **S. C. Huang**, "An Advanced Moving Object Detection Algorithm for Automatic Traffic Monitoring in Real-World Limited Bandwidth Networks," IEEE Transactions on Multimedia, vol. 16, no. 3, pp. 837-847, April, 2014. [Impact factor: 2.344, Rank: 15/105=14%]
6. **S. C. Huang**, and B. H. Chen, "Automatic Moving Object Extraction Through a Real World Variable-Bandwidth Network for Traffic Monitoring Systems," IEEE Transactions on Industrial Electronics, vol. 61, no. 4, pp. 2099-2112, April, 2014. [Impact factor: 6.515, Rank: 2/248=0.8%]
7. **S. C. Huang**, and B. H. Do, "Radial Basis Function Based Neural Network for Motion Detection in Dynamic Scenes," IEEE Transactions on Cybernetics, vol. 44, no. 1, pp. 114-125, Jan., 2014 [Impact factor: 4.657, Ranking: 1/24=4.17%]
8. **S. C. Huang**, and B. H. Chen, "Highly Accurate Moving Object Detection in Variable-Bit-Rate Video-Based Traffic Monitoring Systems," IEEE Transactions on Neural Networks and Learning Systems, vol. 24, no. 12, pp. 1920-1931, Dec., 2013. [Impact factor: 4.370, Rank: 2/102=1.96%]
9. **S. C. Huang**, and C. H. Yeh, "Image Contrast Enhancement for Preserving Mean Brightness without Losing Image Features," ELSEVIER Engineering Applications of Artificial Intelligence, vol. 26, no. 5, pp. 1487-1492, May, 2013. [Impact factor: 1.844, Ranking: 10/90=11%]

10. **S. C. Huang**, F. C. Cheng, and Y. S. Chiu, "Efficient Contrast Enhancement Using Adaptive Gamma Correction with Weighting Distribution," IEEE Transactions on Image Processing, vol. 22, no. 3, pp. 1032-1041, Mar. 2013. [Impact factor: 3.925, Rank: 27/248=10.88%]
11. F. C. Cheng, and **S. C. Huang**, "Efficient Histogram Modification Using Bilateral Bezier Curve for the Contrast Enhancement," IEEE/OSA Journal of Display Technology, vol. 9, no. 1, pp. 44-50, Jan. 2013. [Impact factor: 1.891, Rank: 82/248=33.06%]
12. **S. C. Huang**, and F. C. Cheng, "Motion Detection with Pyramid Structure of Background Model for Intelligent Surveillance Systems," ELSEVIER Engineering Applications of Artificial Intelligence, vol. 25, no. 7, pp. 1338-1348, Oct. 2012. . [Impact factor: 1.844, Ranking: 10/90=11%]
13. F. C. Cheng, **S. C. Huang**, and S. J. Ruan, "Illumination-Sensitive Background Modelling Approach for Accurate Moving Object Detection," IEEE Transactions on Broadcasting, vol. 57, no. 4, pp. 794-801, Dec. 2011. [Impact factor: 1.894, rank: 19/78=24%]
14. F. C. Cheng, **S. C. Huang**, and S. J. Ruan, "Scene Analysis for Object Detection in Advanced Surveillance Systems using Laplacian Distribution Model", IEEE Transactions on Systems, Man, and Cybernetics - Part C: Applications and Reviews, vol. 41, no. 5, pp. 589-598, Sept. 2011. [Impact factor: 2.397, rank: 3/20=15%]
15. **S. C. Huang**, "An Advanced Motion Detection Algorithm with Video Quality Analysis for Video Surveillance Systems," IEEE Transactions on Circuits and Systems for Video Technology, vol. 21, no. 1, pp. 1-14, Jan. 2011. [Impact factor: 3.012, rank: 24/246=10%]
16. F. C. Cheng, **S. C. Huang**, and S. J. Ruan, "Foreground-Adaptive Motion Detection in Broad Surveillance Environments," IEICE Transactions on Fundamentals, Vol.E93-A No.11 pp.2096-2097, Nov. 2010. [Impact factor: 0.325, rank: 211/247=85%]

(b) 研討會論文

1. A. Larin, O. Seredin, A. Kopylov, S. Y. Kuo, **S. C. Huang**, and B. H. Chen, "Parametric Representation of Objects in Color Space Using One-Class Classifiers," Springer Machine Learning and Data Mining in Pattern Recognition (LNCS MLDM), St. Petersburg, Russia, July 21-24, 2014.
2. C. C. Cheng, F. C. Cheng, P. H. Lin and **S. C. Huang**, "A Block-Based Switch Median Filter for Removing High Density Salt-and-Pepper Noises," IEEE International Conference on Consumer Electronics (IEEE ICCE), Taipei, Taiwan, May 26-28, 2014.
3. C. C. Cheng, F. C. Cheng, P. H. Lin and **S. C. Huang**, "A L0 Norm Transmission Model for Defogging Images," IEEE International Conference on Consumer Electronics (IEEE ICCE), Taipei, Taiwan, May 26-28, 2014.
4. C. C. Cheng, W. L. Cheng, F. C. Cheng and **S. C. Huang**, "A Cloud-Computing Local Histogram Construction Algorithm for Big Image Data," IEEE BigData 2014 Taipei Satellite Session (IEEE BigData 2014), Taipei, Taiwan, May 28-30, 2014.
5. Y. H. Jian, M. K. Jiau and **S. C. Huang**, "Automatic Face Annotation System Used Pyramid Database Architecture for Online Social Networks," IEEE International Conference on Ubiquitous Intelligence and Computing (IEEE UIC 2013), Vietri sul Mare, Italy, Dec. 18-20, 2013.
6. C. A. Hsu, M. K. Jiau and **S. C. Huang**, "An Automatic Face Annotation System Featuring High Accuracy for Online Social Networks," IEEE International Conference on Ubiquitous Intelligence and Computing (IEEE UIC 2013), Vietri sul Mare, Italy, Dec. 18-20, 2013.
7. B. H. Chen, and **S. C. Huang**, "Improved Visibility of Single Hazy Images Captured in Inclement Weather Conditions," IEEE International Symposium on Multimedia (IEEE ISM 2013), California, USA Dec. 9-11, 2013.

8. B. H. Chen, and **S. C. Huang**, "Accurate Detection of Moving Objects in Traffic Video Streams over Limited Bandwidth Networks," IEEE International Symposium on Multimedia (IEEE ISM 2013), California, USA Dec. 9-11, 2013. **[Best Student Paper Award]**
9. W. J. Wang, B. H. Chen, and **S. C. Huang**, "A Novel Visibility Restoration Algorithm for Single Hazy Images," IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2013), Manchester, UK, Oct. 13-16, 2013.
10. Y. J. Cheng, B. H. Chen, **S. C. Huang**, S. Y. Kuo, A. Kopylov, O. Seredint, L. Mestetskiy, B. Vishnyakov, Y. Vizilter, O. Vygolov, C. R. Lian, and C.T. Wu, "Visibility Enhancement of Single Hazy Images Using Hybrid Dark Channel Prior," IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2013), Manchester, UK, Oct. 13-16, 2013.
11. M. K. Jiau, **S. C. Huang**, and C. H. Lin, "Optimizing the Carpool Service Problem with Genetic Algorithm in Service-based Computing," IEEE International Conference on Services Computing (IEEE SCC 2013), CA, USA, Jun. 27- Jul. 2, 2013.
12. F. C. Cheng, B. H. Chen, **S. C. Huang**, S. Y. Kuo, B. Vishnyakov, A. Kopylov, Y. Vizilter, L. Mestetskiy, O. Seredin, and O. Vygolov "An Automatic Motion Detection Algorithm for Transport Monitoring Systems," IEEE International Symposium on Consumer Electronics (IEEE ISCE 2013), Hsinchu, Taiwan, Jun. 3 - 6, 2013.
13. B. V. Vishnyakov, I. K. Malin, Y. V. Vizilter, **S. C. Huang**, S. Y. Kuo, "Fast car/human classification methods in the computer vision tasks," SPIE Optical Metrology, Munich, Germany, May 13 - 16, 2013.
14. J. Y. Yen, B. H. Chen, and **S. C. Huang** "Enhanced Extraction of Moving Objects in Variable Bit-Rate Video Streams," ACM Multimedia (ACM MM 2012), pp. 717 - 720, Nara, Japan, Oct. 29 - Nov. 2, 2012.
15. C. H. Lin, M. K. Jiau and **S. C. Huang**, "A Cloud Computing Framework for Real-time Carpooling Services," Information Science and Service Science and Data Mining (ISSDM 2013), pp. 266 - 271, Taipei, Taiwan, Oct. 23 - 25, 2012.
16. B. H. Chen, and **S. C. Huang**, "A Novel Moving Vehicles Extraction Algorithm over Wireless Internet," IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2012), pp. 2505 - 2509, Seoul, Korea, Oct. 14-17, 2012.
17. W. C. Chen, **S. C. Huang**, and T.Y. Lee "An Efficient Reconfigurable Architecture Design and Implementation of Image Contrast Enhancement Algorithm," IEEE International Conference on Embedded Software and Systems (IEEE ICESS 2012), pp. 1741 - 1747, Liverpool, England, UK, 25-27 June 2012.
18. Y. S. Chiou, F. C. Cheng, and **S. C. Huang**, "Efficient Contrast Enhancement Using Adaptive Gamma Correction and Cumulative Intensity Distribution," IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2011), pp. 2946 - 2950, Alaska, Oct. 9-12, 2011.
19. B. H. Dou, and **S. C. Huang**, " Dynamic Background Modeling Based on Radial Basis Function Neural Networks for Moving Object Detection," IEEE International Conference on Multimedia and Expo (IEEE ICME 2011), pp. 1 - 4, Barcelona, Jul. 11-15, 2011.
20. F. C. Cheng, S. C. Huang, and S. J. Ruan, "Advanced Background Subtraction Approach Using Laplacian Distribution Model," IEEE International Conference on Multimedia and Expo (IEEE ICME 2010), pp. 754 - 759, Singapore, Jul. 19-23, 2010, pp.755-759.
21. F. C. Cheng, **S. C. Huang**, and S. J. Ruan, "Advanced Motion Detection for Intelligent Video Surveillance Systems", ACM Symposium on Applied Computing (ACM SAC), pp. 983-984, Lausanne, Switzerland, Mar. 22-26, 2010.

(c) 專利

United States Patent

1. **S. C. Huang**, M. K. Jiau, B. H. Chen and C. H. Lin, "High safety vehicular transportation system and operational method thereof," Patent No. US 8,712,681 B2, Apr. 4, 2014.
2. **S. C. Huang**, and S. Y. Kuo, "Method for Temporal Error Concealment," Patent No. US 8,644,395 B2, Feb. 4, 2014.
3. **S. C. Huang**, and B. H. Do, "Motion detection method for complex scenes," Patent No. US 8,582,812 B2, Nov. 12, 2013.
4. **S. C. Huang**, and S. Y. Kuo, "Method for Spatial Error Concealment," Patent No. US 8,320,470 B2, Nov. 27, 2012.
5. **S. C. Huang**, and S. Y. Kuo, "Motion Estimation Approach for Real-time Embedded Multimedia Design," Patent No. US 8,243,810 B2, Aug. 14, 2012.
6. **S. C. Huang**, and S. Y. Kuo, "Low-complexity and High-quality Error Concealment techniques for video sequence transmissions," Patent No. US 8,223,846 B2, Jul. 17, 2012.
7. **S. C. Huang**, and S. Y. Kuo, "Low-Power and High-Performance Video Coding. Method for Performing Motion Estimation," Patent No. US 8,218,643 B2, Jul. 10, 2012.
8. **S. C. Huang**, and S. Y. Kuo, "Efficient Data Prediction and Data Reuse Motion Estimation Engine for System-On- Chip Design," Patent No. US 8,213,513 B2, Jul. 3, 2012.
9. **S. C. Huang**, and S. Y. Kuo, "Low-Power and High-Throughput Design of Fast Motion Estimation VLSI Architecture for Multimedia System-on-Chip Design," Patent No. US 8,184,709 B2, May 22, 2012.
10. **S. C. Huang**, and S. Y. Kuo, "Low power video compression chipset for portable application," Patent No. US 8,179,970 B2, May 15, 2012.
11. **S. C. Huang**, and S. Y. Kuo, "Seamless Wireless Video Transmission for Multimedia Applications," Patent No. US 8,155,213 B2, Apr. 10, 2012.
12. S. Y. Kuo, and **S. C. Huang**, "Efficient Adaptive Mode Selection Technique for H.264/AVC-Coded Video Delivery in Burst-Packet-Loss Networks," Patent No. US 8,116,383 B2, Feb. 14, 2012.

Taiwan Patent

1. 黃士嘉, 郭斯彥," 時間性錯誤隱藏方法,"發明專利證書號數：I401972 (Patent No. I401972), 中華民國 102 年 07 月 11 日(July 11, 2013).
2. 黃士嘉, 郭斯彥,"在多媒體系統晶片設計中的低電量且高效率的快速移動評估超大型積體電路,"發明專利證書號數：I401970 (Patent No. I401970), 中華民國 102 年 07 月 11 日(July 11, 2013).
3. 黃士嘉, 郭斯彥,"即時嵌入式多媒體設計之移動評估方法,"發明專利證書號數：I389575 (Patent No. I389575), 中華民國 102 年 03 月 11 日(Mar. 11, 2013).
4. 黃士嘉, 郭斯彥,"視訊影像傳輸中遇到封包遺失時的有效選取方法,"發明專利證書號數：I382770 (Patent No. I382770), 中華民國 102 年 01 月 11 日(Jan. 11, 2013).
5. 黃士嘉, 郭斯彥,"正確的無線網路視訊傳輸在多媒體上的應用,"發明專利證書號數：I374672 (Patent No. I374672), 中華民國 101 年 10 月 11 日(Oct. 1, 2012).
6. 黃士嘉, 郭斯彥,"影像的傳輸中的高品質且省時間的錯誤隱藏技術,"發明專利證書號數：I359617 (Patent No. I359617), 中華民國 101 年 03 月 01 日(Mar. 1, 2012).

王　紳 副教授

實驗 (研究) 室名稱：微波積體電路實驗室

聯絡電話：02-2771-2171#2286

e-mail：wangsen@ntut.edu.tw

網址：www.ntut.edu.tw/~wangsen

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長：1. 射頻電路設計　2._____　3._____　4._____

1.近年重要論文及著述

(a)期刊論文

[1] **S. Wang** and R.-X. Wang, "Q-enhanced CMOS inductor using tapped-inductor feedback," *Electronics Letters*,, Vol.47, No. 16, pp. 921-922, August, 2011.

[2] **S. Wang**, and B.-Z. Huang, "Design of CMOS active bandpass filter with three transmission zeros," *Electronics Letters*, Vol.47, No. 20, pp. 1030-1031, September, 2011.

[3] M.-J. Chiang, **S. Wang**, and C.-C. Hsu, "Miniaturized Printed Slot Antenna with Multi-Ring Technique for Dual-band and Broadband Operations," *IET Microwaves, Antennas & Propagation*, vol. 8, Iss. 6, pp. 409-414, June 2014.

[4] **S. Wang*** and C.-T. Chang, "K-band CMOS frequency doubler with high fundamental rejection," *Electronics Letters*, Vol.50, No. 17, pp. 1211-1212, Aug. 2014. (SCI、EI)

[5] **S. Wang** and Wen-Jie Lin, "A 10/24-GHz CMOS/IPD monopulse receiver for angle-discrimination radars," *IEEE Trans. Circuits Syst. I, Reg. Papers*. vol.57 no.1, pp.2999-3006, Oct. 2014.

[6] **S. Wang**, "A Low-Phase-Noise Ka-Band Push-Push VCO Using CMOS/GIPD Technologies," *IEEE Trans. on Ultrasonics, Ferroelectrics, and Frequency Control*, vol.61 no.9, pp.1456-1462, Sept. 2014.

[7] **S. Wang** and W.-J. Lin, "A C-band CMOS bandpass filter using active capacitance circuit," *IET Microwaves, Antennas & Propagation*, vol. 8, Iss. 15, pp. 1416-1422,　Dec. 2014.

[8] **S. Wang**, M.-J. Chiang, and C-T. Chang, "A novel CMOS 24-GHz in-phase power divider using synthetic coupled lines," *IEEE Trans. Components, Packaging and Manufacturing Technology,* vol. 5 no. 3, pp.398-403, Mar. 2015.

(b)研討會論文

[1] C.-T. Chang, and **S. Wang**, "A low-power CMOS low-noise amplifier for ultra-wideband applications," in *IEEE International Conference of Electron Devices and Solid-State circuits*, Hong Kong, China, Jun. 3-5, 2013, pp. 1-2. **(EI)**

[2] **S. Wang**, M.-J. Chiang, and C.-C. Hsu, "A planar dual-band slot antenna design for access point application" in *IEEE 2nd Global Conference on Consumer Electronics*, Tokyo, Japan, Oct. 1-4, 2013, pp. 258-259. **(EI)**

[3] **S. Wang**, and W.-J. Lin, "A K-band Gm-boosting differential Colpitts VCO in 0.18-um CMOS," in *IEEE Asia-Pacific Microwave Conference*, Seoul, Korea, Nov. 5-8, 2013, pp. 1042-1045. **(EI)**

[4] **S. Wang** and C.-H. Lee, "Low-phase error and high isolation CMOS active balun," in *IEEE MTT-S Int. Dig.*, Jun. 2014, pp. 1–4.

[5] C.-Y. Xiao, **S. Wang**, and W.-H. Yen, "A CMOS direct injection-locked frequency divider with locking range enhancement," in *IEEE Asia-Pacific Microwave Conference*, Sendai, Japan, Nov. 4-7, 2014, pp. 882-885. **(EI)**

[6] **S. Wang**, M.-J. Chiang, and C.-C. Hsu, "A dual-band slot antenna with two pairs of slot patches for cross-polarization reduction" in *International Symposium on Antennas and Propagation*, Kaohsiung, Taiwan, Dec. 2-5, 2014, pp. 465-466. **(EI)**

[7] R.-H. Chang, **S. Wang** and C.-C. Teng, "Two compact power-combining CMOS VCOs with excellent 2nd-harmonic rejection using three-conductor coupled-line," in *IEEE MTT-S Int. Dig.*, May 2015, pp. 1–4. **(EI)**

(c)專利

[1] 2014 年 4 月通過中華民國發明專利，發明名稱：「雙頻帶低雜訊放大器及單頻帶低雜訊放大器」，發明第 I 435539 號。發明人：**王紳**、黃柏宗(學生)

[2] 2014 年 7 月通過中華民國發明專利，發明名稱：「帶通濾波裝置及電感性模組」，發明第 I 446711 號。發明人：**王紳**、王瑞憲(學生)

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

a.提出在矽基板上耦合現象的電磁模型。此電磁模型利用龐大的場論分析，能得到此電磁耦合的定量評估，進而用來設計 CMOS 的頻率調變收發機。

b. X/K-band CMOS 頻率調變之收發晶片設計與製作。該系統晶片整合壓控振盪器、放大器、耦合器、混頻器等關鍵零組件。

c.主動式電感電路與主動帶通濾波器設計。此帶通濾波器具有低輸入損耗、低功耗、高選擇度與頻率響應的可調性。與其它文獻相比，本設計具有極高的效能指數。

d.在 IPD 製程中的玻璃基板設計出微型化且低損耗之被動電路，適合應用於積體電路的整合。

e.與中山科學研究院-系統製造中心合作，設計無線整流天線模組，以應用在砲彈火箭微型化引信裝置上。

f.與倢通科技公司成功研製出應用在數位電視之 DVB-LNA。

g.國立臺北科技大學-電資學院 100 年度傑出研究獎(獲獎日期 101/5/10)。

h.參與教育部補助 99 年度前瞻晶片系統設計(SOC)學程計畫，擔任無線傳輸積體電路課程之授課老師。

i.參與教育部 100-102 年度網路通訊人才培育計畫-通訊電路與天線學程，擔任共同主持人與授課老師。

j.參與教育部 101 年度電磁課程推廣計畫，擔任共同主持人與授課老師。

k.指導碩士班鍾杰穎同學撰寫兩篇國際會議論文，並正取 101 學年度國立台灣大學電信工程所電波組博士班。

l.指導碩士班林文傑同學撰寫一篇國際會議論文，並正取 102 學年度國立台灣大學電信工程所電波組博士班。

m.指導宋亮誼同學參與 101 學年國科會大專生參與專題研究計畫-無線功率傳輸充電模組之研究與製作。

n.指導吳秉修同學參與 102 學年國科會大專生參與專題研究計畫-雙頻段 3dB 環型耦合器。

o.指導吳秉修、游敬浩同學參與台北科大林宏裕校友實務專題競賽優等獎(獎金 2 萬元)。

p.從 102.8 起擔任教育部北區教學資源中心執行秘書迄今-協助北區 39 所技專院校計畫執行與業務推動。

鄭瑞清 副教授

實驗 (研究) 室名稱：天線與電磁模擬實驗室

聯絡電話：02-2771-2171 x 2243

e-mail：juiching@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~juiching/biography.htm

研究聚焦領域：■ H：健康科技 □ I：智慧整合科技

□ G：綠色科技 □ H：人文與創新元素

專長：1. 天線 2. 微波電路 3. 電磁模擬

1.近年重要論文及著述

(a)期刊論文

1. Xiao-Li Zhao, Jie Jin, Jui-Ching Cheng, and Lin-Gao Liang (2014, Aug). A Wideband Dual-Polarized Array Antenna With Conical Elements for Wi-Fi/WiMAX Application. IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, vol. 13, 1609-1612.
2. Lieh-Hao Chang, Wen-Cheng Lai, Jui-Ching Cheng, and Ching-Wen Hsue (2014, Jan). A Symmetrical Reconfigurable Multipolarization Circular Patch Antenna. IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, vol. 13, 87-90. 本人為通訊作者.
3. E. Li, J. Cheng, Y. Lin (2013, Oct). Technique for Measuring Symmetrical Reciprocal Three-Port Devices Using Two-Port Vector Network Analyzer Measurements. IEEE Transactions on Instrumentation and Measurement, vol. 62, iss. 10, pp 2773–2783.
4. Jiunn-Woei Liaw, Jui-Ching Cheng, Cuiman Ma , and Ruifeng Zhang (2013, Sep). Theoretical Analysis of Plasmon Modes of Au–Ag Nanocages. J. Phys. Chem. C, vol. 117, iss. 38, pp 19586–19592.
5. Cuiman Ma, Ruifeng Zhang, Jiunn-Woei Liaw and Jui-Ching Cheng (2013, Aug). Plasmonic modes of nanobox, nanocage, and nanoframe. Applied Physics A.
6. YanpinGao, RuifengZhang, Jui-ChingCheng, Jiunn-WoeiLiawc, Cuiman Maa (2013, Apr). Optical properties of plasmonic dimer, trimer, tetramer and pentamer assemblies of gold nanoboxes. Journal of Quantitative Spectroscopy & Radiative Transfer, vol. 125, pp 23–32.
7. Eric S. Li, Jui-Ching Cheng, and Wei-Yu Tai. (2012, Sep). Extending the Operation Frequencies of Standard Coaxial-to-Microstrip Connectors. Microwave and Optical Technology Letters, Volume 54, Issue 12, pages 2716–2719.. 本人為通訊作者.
8. Jui-Ching Cheng, Eric S. Li and Yu Jia Huang. (2012, Jul). Designs of bandwidth-controllable impedance transformers using dual transmission lines. ELECTRONICS LETTERS, Vol. 48, No. 15, pp. 931-932. 本人為第一作者.
9. Jingkuang Chen, Mengli Wang, Jui-Ching Cheng, Yu-Hsin Wang, Pai-Chi Li and Xiaoyang Cheng. (2012, Apr). A Photoacoustic Imager With Light Illumination Through an Infrared-

Transparent Silicon CMUT Array. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, vol. 59, no. 4, pp. 766-775..

10. C.-I. Shie, J.-C. Cheng*, S.-C. Chou, Y.-C. Chiang. (2012, Mar). Design of a New Type Planar Balun by Using Trans-Directional Couplers. IEEE Transactions on Microwave Theory and Techniques, Vol. 60, Iss. 3, pp. 471-476. (SCI).
11. J.-C. Cheng1 E.S. Li* (2011, Dec). Method of moments with an equivalent Green's function technique for modelling broadband cavity-coupled microstrip vertical transitions. IET Microwaves, Antennas & Propagation, Vol. 5, Iss. 15, pp. 1863-1871. (SCI).
12. Jui-Ching Cheng, Eric S. Li* and Chin-Chung Chuang (2011, Dec). APPLICATION OF MICROSTRIP CAVITY COUPLERS FOR WIDEBAND BANDPASS FILTERS. MICROWAVE AND OPTICAL TECHNOLOGY LETTERS, Vol. 53, No. 12, pp. 2814-2817. (SCI).
13. C. L. Tsai*, S. M. Deng, J. C. Cheng, C. H. Ling, and K. W. Liu (2011, Feb). A dual-port antenna for GPS and UWB operations. *Journal of Electromagnetic Waves and Applications*, Volume 25, Numbers 2-3, 2011 , pp. 365-377.. (SCI).
14. C.-I. Shie*, J.-C. Cheng, S.-C. Chou, and Y.-C. Chiang (2010, Jul). Design of Cmos Quadrature Vco Using on-Chip Trans-Directional Couplers. *PIER*, Vol. 106, pp 91-106. (SCI).

(b)研討會論文

1. Jui-Ching Cheng and Hung-Yu Lin (2012, Dec). Dual-Band Quadrature Hybrids Using 1/8-Wavelength Composite Right/Left-Handed Transmission Lines. 2012 Asia Pacific Microwave Conference, Kaoshiung, Taiwan.. 本人為第一作者、通訊作者

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

蕭榮修 副教授

實驗 (研究) 室名稱：情境感知應用實驗室

聯絡電話：0919383143

e-mail：rshsiao@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~rshsiao/

研究聚焦領域：☑ H：健康科技　☑ I：智慧整合科技
☑ G：綠色科技　☐ H：人文與創新元素

專長：1. 無線感控網路 2. 情境感知系統 3. 智慧整合感控系統 4. 嵌入式系統

1.近年重要論文及著述

(a) 期刊論文

1. Mekuanint Agegnehu Bitew, Rong-Shue Hsiao, Hsin-Piao Lin, Ding-Bing Lin (2015, Mar). Hybrid Indoor Human Localization System for Addressing the Issue of RSS Variation in Fingerprinting. International Journal of Distributed Sensor Networks, 2015(2015), Article ID 831423. (SCIE).
2. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Chen-Hua Chung, Fu-Chiang Kang (2014, Jul). An Integrated Deployment Planning Tool for Indoor Building Sensor Networks. Sensors and Materials, 26(5), 347-352. (SCIE). 本人為第一作者、通訊作者.
3. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng, Chen-Hua Chung (2013, Jan). A Robust Occupancy-based Building Lighting Framework using Wireless Sensor Networks. Applied Mechanics and Materials, 284-287 (2015-2020). (EI). NSC 101-2622-E-027-014-CC3. 本人為第一作者、通訊作者.
4. Rong-Shue Hsiao, Ding-Bing Lin, Hsin Piao Lin, Shu-Chun Cheng, Chen-Hua Chung (2012, May). A Robust Sensor Deployment of Wireless Sensor Networks for Home Automation. Sensor Letters, 10(5/6), 1209-1215. (SCI). 中科院: CSIST-800-V303(100). 本人為第一作者、通訊作者.

(b) 研討會論文

1. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Jin-Wang Zhou (2014, Oct). Multimodal Sensor Fusion for Indoor Occupancy Determination. The 3nd International Conference on Engineering and Technology Innovation (ICETI2014), Kenting, Taiwan. 本人為第一作者、通

訊作者.

2. Mekuanint Agegnehu Bitew, Rong-Shue Hsiao, Hsin-Piao Lin, Ding-Bing Lin (2014, Aug). Indoor Human Localization System Based on RF and PIR Sensors. 2014 IEEE 11th Vehicular Technology Society Asia Pacific Wireless Communications Symposium (APWCS2014), Ping Tung, Taiwan.
3. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Fu-Chiang Kang, Kuan-Jen Lin (2014, Aug). A Reliable Event Reporting Framework for Indoor Wireless Sensor and Actor Networks. 2014 IEEE 11th Vehicular Technology Society Asia Pacific Wireless Communications Symposium (APWCS2014), Ping Tung, Taiwan. 本人為第一作者、通訊作者.
4. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Chen-Hua Chung, Fu-Chiang Kang (2013, Oct). A Wireless Sensor Network Deployment Planning Tool to Support Building Automation . 2013 International Applied Science and Precision Engineering Conference , Nantou, Taiwan. 本人為第一作者、通訊作者.
5. Rong-Shue Hsiao, Ding-Bing Lin, Shu-Chun Cheng, Chen-Hua Chung (2013, Aug). A Probabilistic Sensing Model-Based Pyroelectric Sensor Deployment in Wireless Sensor Networks. The 10th IEEE Vehicular Technology Society Asia Pacific Wireless Communications Symposium (APWCS 2013), Seoul, Korea. NSC 101-2221-E-027-108. 本人為第一作者、通訊作者.
6. R.S. Hsiao, D.B. Lin, H.P. Lin, C.H. Chung, S.C. Cheng (2012, Dec). Integrating ZigBee Lighting Control into Existing Building Automation System. 2012 IET International Conference on Information Science and Control Engineering (ICISCE 2012), Shenzhen, China. NSC 101-2622-E-027-014-CC3. 本人為第一 作者、通訊作者. EI Compendex.
7. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng, Chen-Hua Chung (2012, Nov). A Robust Occupancy-based Building Lighting Framework using Wireless Sensor Networks. The 2nd International Conference on Engineering and Technology Innovation 2012 (ICETI2012), Kaohsiung, Taiwan. NSC 101-2622-E-027-014-CC3. 本人為第一作者、通訊作者.
8. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Chen-Hua Chung, Shu-Chun Cheng (2012, Aug). A Robust Wireless Sensor Network Framework for Building Automation Systems. The 9th IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2012), Kyoto,

Japan. NSC 101-2221-E-027-108. 本人為第一作者、通訊作者.

9. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng, Chen-Hua Chung (2011, Nov). A Robust Sensor Deployment of Wireless Sensor Networks for Home Automation. The International Conference on Engineering and Technology Innovation (ICETI 2011), Kenting, Taiwan. 中科院: CSIST-800-V303(100). 本人為第一作者、通訊作者.
10. Rong-Shue Hsiao, Ding-Bing Lin, Hsin-Piao Lin, Shu-Chun Cheng, Chen-Hua Chung (2011, Aug). Indoor Target Detection and Localization in Pyroelectric Infrared Sensor Networks. The 8th IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2011), Singapore. 中科院: CSIST-800-V303(100). 本人為第一作者、通訊作者.
11. Ding-Bing Lin, Ming-Chau Jan, Rong-Shue Hsiao, Hsin-Piao Lin (2010, May). Corrected Signal Attenuation Difference of Arrival for Wireless Location Technique. The 7th IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2010), Kaohsiung, Taiwan.
12. 蕭榮修, 林丁丙, 林信標, 康富強, 鐘振華（2013 年 08 月）。無線感測器網路與大樓自動化系統的整合與閘道器之設計與製作。第九屆無線、隨意及感測網路研討會。國科會：101-2622-E-027-014-CC3。本人為第一作者、通訊作者。
13 蕭榮修, 林丁丙, 林信標, 康富強, 周金旺（2012 年 11 月）。基於 ZigBee 無線感測網路之大樓燈光控制系統。2012 建構綠能科技與智慧節能產學園區研討會暨計畫成果觀摩會，淡水，新北市，台灣。國科會：101-2622-E-027-014-CC3。本人為第一作者、通訊作者。
14. 蕭榮修, 林丁丙, 林信標, 鐘振華, 鄭書峻（2012 年 08 月）。基於人體红外線感測器之室內位置偵測系統。第八屆無線、隨意及感測網路研討會 (WASN2012)，三峽，新北市，台灣。國科會：101-2221-E-027-108。本人為第一作者、通訊作者。
15. 蕭榮修、林信標、林丁丙、鐘振華、鄭書峻、陳泰成（2011 年 11 月）。基於無線感測網路之廚衛浴環控系統。中科院 100 年科專產學研分包研究期末論文發表會，桃園，台灣。中科院：CSIST-800-V303(100)。本人為第一作者、通訊作者。
16. 蕭榮修、林信標、林丁丙、鐘振華、鄭書峻（2010 年 12 月）。強健型的家庭無線感測器網路佈建。99 年度中山科學研究院科專計畫期末論文發表會，龍潭，台灣。中科院：CSIST-800-V215(99)。本人為第一作者、通訊作者。

(c)專利

專利名稱	專利核准號碼	核發專利之國家及日期	專利型態	專利發明人	專利權有效期間
室內無線網路感測器優化佈建系統及其方法	I432074	中華民國 103,3,21	發明	林信標 蕭榮修	16 年

(d)技術移轉

技術名稱	委託單位	技轉期間
整合無線感測網路燈光控制系統與大樓自動化系統	掌宇股份有限公司	102,4,8

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(1)開發智慧型的焦電型紅外線(PIR)感測器做為室內人員偵測及定位之用，本技術主要是透過內建的軟、硬體之融合(fusion)機制，使感測的範圍具有規則性，資料的讀值更具確定性，並具有人員不需穿戴、攜帶感測器之優點。

(2)ZigBee 無線感測網路於室內之可靠通訊機制之研究，涵蓋感測器節點之佈建策略及跨層級(cross-layer)的通訊協定，主要解決室內電波之干擾、衰退及網路壅塞等問題。本研究主要是提出創新性的方法，進行模擬予實務驗證，並已延伸至工業應用(industrial applications)等級的標準。

(3)研發基於情境感知(context-aware)應用系統的建構平台，藉由佈建各類型感測器，以讀取人體及環境資料，並藉由資料融合機制獲取更確定的資料，再以基於本體論的架構建模，使得感測資料成為更具分享性的資訊，以供資料庫存取及推理之用。

陳仲萍 副教授

實驗 (研究) 室名稱：網路性能分析實驗室

聯絡電話：27712171 轉 2221

e-mail：cpchen@ntut.edu.tw

網址：

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長：1. 網路性能分析 2. 電腦通訊網路 3._____ 4._____

1.近年重要論文及著述

(a) 期刊論文

1. **Chung-Ping Chen*** and Ying-Wen Bai, "Performance Measurement and Queueing Analysis at Medium-High Blocking Probability of Parallel Connection Servers with Identical Service Rates," *WSEAS Transactions on Communications,* Issue 12, Volume 8, pp. 1253-1262, December(2009).（EI）ISSN: 1109-2742　E-ISSN: 2224-2864

2. **Chung-Ping Chen***, Ying-Wen Bai, Hsiang-Hsiu Peng and Ying-Yu Chen, "The Equivalent Queuing Model by a Partition Algorithm for Tree Connected Servers," *WSEAS Transactions on Communications,* Issue 4, Volume 12, pp. 164-176. April (2013). (EI)　ISSN: 11092742　E-ISSN: 2224-2864

(b) 研討會論文

1. **Chung-Ping Chen***, Ying-Wen Bai, Bao-Li Hu and Cheng-Yu Chung , "Performance Measurement and Queueing Analysis of Parallel Connection Servers with Different Dispatch Probabilities," the I²MTC 2010 – IEEE International Instrumentation and Measurement Technology Conference, pp.1192-1197, Hilton Austin, Austin, TX , USA, (May 3-6, 2010).

2. **Chung-Ping Chen***, Ying-Wen Bai and Cheng-Yu Chung, "The Partition Algorithm of an Equivalent Queuing Model for Serial-Parallel Connection Servers," the 10th WSEAS International Conference on Applied Informatics and Communications (AIC '10), The Howard Plaza Hotel Taipei, Taiwan, pp. 407-412 , (August 20-22, 2010).

3. **Chung-Ping Chen***, Ying-Wen Bai, Cheng-Yu Chung and Hsiang-Hsiu Peng, “Performance Measurement and Queueing Analysis of Web Servers with a Variation of Webpage Size”, 2011 International Conference on Computer Applications and Network Security (ICCANS 2011), pp. 170-174. Maldives, (27-29 May, 2011),

4. **Chung-Ping Chen***, Ying-Wen Bai and Hsiang-Hsiu Peng, “Equivalent Bandwidth Model of Parallel Servers with a Variation of CPU Loads, System Response Time and Number of Users”, 2012 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2012) , pp. 1253-1262. Montreal, Quebec, Canada, (April 29 to May 2, 2012),

5. **Chung-Ping Chen***, Ying-Wen Bai and Hsiang-Hsiu Peng, “Equivalent Bandwidth Model of Parallel Servers with a Variation of CPU Loads, System Response Time and Number of Users”, 2012 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2012) , pp. 1253-1262. Montreal, Quebec, Canada, (April 29 to May 2, 2012),

6. **Chung-Ping Chen**, Guan-Jhong Lin, Yen-Hsing Lin, Huai-Ping Song and Ying-Wen Bai, “Performance Measurement and Queueing Model of Web Servers with a Variation of Webpage Sizes”, The 4th International Symposium on Next-Generation Electronics (IEEE ISNE 2015), Taipei, Taiwan, (May 4 to May 6, 2015)

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

高立人 副教授

實驗（研究）室名稱：視覺傳輸暨影像處理實驗室（VCIP Lab.）
聯絡電話：02-27712171 轉 2242
e-mail：ljkau@ntut.edu.tw
網址：www.ntut.edu.tw/~ljkau
研究聚焦領域：■ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素
專長：1.微處理機系統　2.訊號壓縮　3.影像與視訊處理　4.生醫資通訊技術

1.近年重要論文及著述

（a）期刊論文

[JA1] Lih-Jen Kau*, and Jia-Wei Leng (Student), "A Gradient Intensity-adapted Algorithm with Adaptive Selection Strategy for the Fast Decision of H.264/AVC Intra-prediction Modes", Accepted and to be published in ***IEEE Trans. Circuits and Systems for Video Technology*** (***TCSVT***)（**SCI** with IF 2.259, Ranking 50/247 @ 2013 in SCI Category: Engineering, Electrical & Electronic）

[JA2] Lih-Jen Kau*, and Chih-Sheng Chen (Student), "A Smart Phone-based Pocket Fall Accident Detection, Positioning and Rescue System", in ***IEEE Journal of Biomedical and Health Informatics*** (***JBHI***), Vol. 19, No. 1, Jan. 2015.（**SCI** with IF 2.072, Ranking 19/135 @ 2013 in SCI Category: Computer Science, Information Systems）

[JA3] Lih-Jen Kau*, and Tien-Lin Lee (Student), "A Three-Step Approach with Adaptive Additive Magnitude Selection for the Sharpening of Images", ***The Scientific World Journal***, Vol. 2014, Article ID 528696, 15 pages, Sept. 2014. doi:10.1155/2014/528696（**SCI Expanded** with IF 1.219, Ranking 16/55 @ 2013 in SCI Category: Multidisciplinary Sciences）

[JA4] Lih-Jen Kau*, and Tien-Lin Lee (Student), "An Efficient and Self-adapted Approach for the Sharpening of Color Images", ***The Scientific World Journal***, Vol. 2013, Article ID 105945, 18 pages, Nov. 2013. doi:10.1155/2013/105945（**SCI Expanded** with IF 1.73, Ranking 13/56 @ 2012 in SCI Category: Multidisciplinary Sciences）

[JA5] Ching-Hung Lee and **Lih-Jen Kau***, "Enhancing the Predictive Coding Efficiency with Control Technologies for Lossless Compression of Images", ***IET Image Processing***, Vol. 6, Issue 3, pp. 251-263, 2012.（**SCI** with IF 0.895, Ranking 145/243 @ 2012 in SCI Category: Engineering, Electrical & Electronic）

[JA6] Lih-Jen Kau*, Guo-Ting Jhao (Student), and Jyun-Hua Syu (Student), "Visual Surveillance System under Bad Weather Conditions," ***亞太 FPGA 應用工程期刊***, pp. 1-6, Nov. 2013.

（b）研討會論文

International Conference Papers（國際會議論文集）

[IC01] Lih-Jen Kau*, and Ming-Xian Lee (Student), "Perception-based Video Coding with Human Faces Detection and Enhancement in H.264/AVC Systems", Accepted and to be published in *Proc. 2015 IEEE 58th International Midwest Symposium on Circuits and Systems (**IEEE MWSCAS 2015**)*, Fort Collins, Colorado, Aug. 2-5, 2015.

[IC02] Lih-Jen Kau*, Wan-Lin Su (Student), Pei-Ju Yu (Student), and Sin-Jhan Wei (Student), "A Real-time Portable Sign Language Translation System", Accepted and to be published in *Proc. 2015 IEEE 58th International Midwest Symposium on Circuits and Systems (**IEEE MWSCAS 2015**)*, Fort Collins, Colorado, Aug. 2-5, 2015.

[IC03] Lih-Jen Kau*, and Chih-Sheng Chen (Student), "A Smart Phone-based Pocket Fall Accident Detection System", in *Proc. 2014 IEEE International Symposium on Bioelectronics and Bioinformatics (**IEEE ISBB 2014**)*, pp. 1-4, Taoyuan, Taiwan, April 11-14, 2014.

[IC04] Lih-Jen Kau*, and Shih-Wei Lin (Student), "High Performance Architecture for the Encoder of JPEG-LS on SOPC Platform", in *Proc. 2013 IEEE Workshop on Signal Processing Systems (**IEEE SiPS 2013**)*, pp. 272-277, Taipei, Taiwan, Oct. 16-18, 2013.

[IC05] Lih-Jen Kau*, and Jia-Wei Leng (Student), "A Gradient Intensity-adapted Algorithm for the Fast Decision of H.264/AVC Intra-prediction Modes", in *Proc. 2013 IEEE Workshop on Signal Processing Systems (**IEEE SiPS 2013**)*, pp. 141-146, Taipei, Taiwan, Oct. 16-18, 2013.

[IC06]Lih-Jen Kau*, and Tien-Lin Lee (Student), "An HSV Model-based Approach for the Sharpening of Color Images", in *Proc. 2013 IEEE International Conference on Systems, Man, and Cybernetics (**IEEE SMC 2013**)* , pp. 150-155, Manchester, UK, Oct. 13-16, 2013.

[IC07] Lih-Jen Kau*, and Chih-Shen Chen (Student), "Speeding Up the Runtime Performance for Lossless Image Coding on GPUs with CUDA", in *Proc. 2012 IEEE International Symposium on Circuits and Systems (**IEEE ISCAS 2013**)*, pp. 2868-2871, Beijing, China, May 19-23, 2013.

[IC08] Lih-Jen Kau*, Cheng-Chang Chung (Student), and Ming-Sian Chen (Student), "A Cloud Computing-Based Image Codec system for Lossless Compression of Images on a Cortex-A8 Platform", in *Proc. 2012 IEEE Biomedical Circuits and Systems Conference (**IEEE BioCAS 2012**)*, pp. 288-291, Hsinchu, Taiwan, Nov. 28-30, 2012.

[IC09] Lih-Jen Kau*, Bi-Ling Dai (Student), Chih-Shen Chen (Student), and Sung-Hung Chen (Student), "A Cloud Network-based Power Management Technology for Smart Home Systems", in *Proc. 2012 IEEE International Conference on Systems, Man, and Cybernetics (**IEEE SMC 2012**)*, pp. 2527-2532, Coex, Seoul, Korea, Oct. 14-17, 2012.

[IC10] Lih-Jen Kau*, and Tien-Lin Lee (Student), "A Grey System-based Approach for the Sharpening of Images", in *Proc. 2012 IEEE International Conference on Systems, Man, and Cybernetics (**IEEE SMC 2012**)*, pp. 2510-2515, Coex, Seoul, Korea, Oct. 14-17, 2012.

[IC11] Lih-Jen Kau*, and Chih-Shen Chen (Student), "A Low Complexity Dual Mode Edge Detector", in *Proc. IEEE Visual Communication and Image Processing (**IEEE VCIP 2011**)*, pp. 1-4, Tainan, Taiwan, Nov. 6-9, 2011.

Domestic Conference Papers（國內會議論文集）

[DC1] Yu-Shiang Yan (Student), and **Lih-Jen Kau***, "The Development of a Moving Object Detection Algorithm for Visual Tracking System with Background Interference", in *Proc. National Symposium on Telecommunications (**NST 2011**)*, pp. 678-681, Hualien, Taiwan, Nov. 18-19, 2011.

[DC2] 李宗勳（學生），陳松鴻（學生），**高立人***，"校園 e 卡通"，*2010 電腦視覺,影像處理與資訊技術研討會論文集（**CVIPIT 2010**）*，頁 153-162，桃園，6 月 9 日，民國 99 年。

[DC3] 陳智聖（學生），**高立人***，"以藍芽技術和個人數位助理（P.D.A.）為基礎之智慧家庭"，*第五屆智慧生活科技研討會論文集（**ILT 2010**）*，頁 571-578，台中，6 月 4 日，民國 99 年。

（c）專利

[I] Invention Patents（發明專利）

[I1] 高立人、鍾承璋、胡志棠、陳明賢，「基於雲端運算技術之影像儲存、瀏覽與處理架構」，申請人-國立臺北科技大學，中華民國 102 年 5 月（審查中）

[I2] 高立人、林景惠，「主動調整式床墊結構」，申請人-歐得葆家具有限公司，中華民國 102 年 3 月（審查中）

[M] Utility Model Patents（新型專利）

[M1] 曾明章、高立人、許秀貞，「具有鏡面觸控顯示裝置之智慧型廚櫃具系統」，申請人-大雅廚房器具有限公司，中華民國 102 年 12 月（專利案號：M467387）

[M2] 曾明章、高立人、許秀貞，「智慧型廚櫃具之傳輸控制系統」，申請人-大雅廚房器具有限公司，中華民國 102 年 12 月（專利案號：M467952）

[M3] 曾明章、高立人、許秀貞，「智慧型廚櫃具專用之可移動式觸控顯示裝置」，申請人-大雅廚房器具有限公司，中華民國 102 年 12 月（專利案號：M467951）

（d）技術移轉

技術名稱	專利名稱	授權單位	被授權單位	合約期間
基於智慧型行動裝置之團購系統研發計畫	基於智慧型行動裝置之團購系統研發計畫	國立臺北科技大學	USA CANAL Software Co., Ltd	2013/08/ ~ 2014/07/
齒列壓力影像顯示系統研發計畫	齒列壓力影像顯示系統研發計畫	國立臺北科技大學	沐汕企業有限公司	2013/04/ ~ 2014/03/
智慧型廚櫃具研發計畫	智慧型廚櫃具研發計畫	國立臺北科技大學	大雅廚房器具有限公司	2012/07/ ~ 2013/09/
智慧型無線物聯網路研發計畫	智慧型無線物聯網路研發計畫	國立臺北科技大學	安文科技有限公司	2012/05/ ~ 2012/12/

（e）專書及專章

（f）作品

2.其他表現（包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等）

■ **全國性學術競賽：**

1.指導學生榮獲『**國科會 101 年度大專學生研究計畫研究創作獎**』
國科會 101 年度大專學生參與專題研究計畫 （NSC 101-2815-C-027-011-E）
計畫名稱：可應用於惡劣環境之視覺化平交道安全輔助系統
執行期間：101.07.01 至 102.02.28（已執行畢）
計畫學生：陳明賢

■ **全國性專題製作與創業競賽獲獎：**

01.指導學生參加『第 9 屆盛群盃 HOLTEK MCU 創意大賽』，榮獲居家/健康應用組**銀牌獎（獎金肆萬元）暨產品設計獎（獎金一萬元）**
決賽日期：103 年 11 月 22 日（ 明志科技大學）
競賽主題：暢所欲言（第三代即時手語翻譯系統）
參賽學生姓名：蘇宛琳、 余佩儒、魏新展、劉俊成

02.指導學生參加『SIGMU 第一屆創意生活智慧競賽』，榮獲**團體優勝（第一名），並獲頒 25 萬元獎金**
決賽日期：103 年 10 月 08 日
競賽主題：聽見自己的聲音（第二代即時手語翻譯系統）
參賽學生姓名：蘇宛琳、 余佩儒、魏新展、李柏鋐、陳其斌

03.與電子系兼任教師房同經醫師聯合指導學生參加研華科技舉辦之『2014 TIC100 Smarter City & IoT 智能城市與物聯網經營模式競賽』榮獲校園自命題組**總決賽亞軍，並獲頒 10 萬元獎金**

決賽日期：103 年 07 月 05 日（決賽）、103 年 08 月 17 日（總決賽）
參賽學生姓名：潘經亞、袁世鑫、蔡志宗、張原嘉、林岱頡、林俊佑

04.指導學生參加『IoT/M2M 共同聯網平台與應用服務競賽』，榮獲**季軍並獲一萬元獎金**
決賽日期：103 年 06 月 13 日（交通大學）
競賽主題：廚房無線化大幫手
參賽學生姓名：許凱翔、郭沛融、卓伯勳、張義生

05.與電子系兼任教師房同經醫師聯合指導同學參與科技部「103 年創新創業激勵計畫」榮獲**第一梯次入選，並獲三萬元獎助金**
決賽日期：103 年 05 月 04 日（國家實驗研究院）
競賽主題：Dr. Me
參賽學生姓名：蔡宗翰、黃俊儒、鄭安凱、林子銘、楊永煌、盧益根、李璿、邱泓瑋、張榮彰、鄭資諭

06.指導學生參加『2014 德州儀器 DSP/MCU 應用競賽-MCU 創新應用實現組』，榮獲**第三名**
決賽日期：103 年 05 月 17 日
競賽主題：得心應手（Handy Talker；第一代即時手語翻譯系統）
參賽學生姓名：蘇宛琳、 余佩儒、魏新展

07.指導學生參加『2014 德州儀器 DSP/MCU 應用競賽-MCU 創新應用實現組』，榮獲**佳作**
決賽日期：103 年 05 月 17 日
競賽主題：寶寶翻臥保護墊（The Baby's Pad for Lying Posture Detection）
參賽學生姓名：潘經亞、 趙國廷、翁建倫

08.指導學生參加『2014 德州儀器 DSP/MCU 應用競賽-DSP 軟體演算法組』，榮獲**佳作**
決賽 日期：103 年 05 月 17 日
競賽主題：應用於惡劣環境下之自適應視訊監控系統（Vile Weather Video Surveillance System）
參賽學生姓名：江育瑋、陳冠宇、黃至麒

09.指導學生參加『2013 FMRA 全國 FM 廣播收音機及天線創意設計競賽』，榮獲大專校院組**第二名**
決賽日期：102 年 12 月 20 日（笠基電子）
競賽主題：聖誕福音
參賽學生姓名：潘經亞、卓伯勳、陳泰宇

10.指導學生參加『Innovate Asia - ALTERA 2013 亞洲創新設計大賽』晉級決賽，榮獲**二等獎暨優秀文稿獎**
決賽日期：102 年 09 月 23 日（友晶科技/新竹）
競賽主題：應用於惡劣環境之視覺化監控系統
參賽學生姓名：趙國廷、許俊華

11.指導學生參加『2013 逐夢盃創業計畫書競賽』，榮獲**第三名（創意獎）**
決賽日期：102 年 06 月 21 日（臺北市）
競賽主題：跌報醫援
參賽學生姓名：蔡宗翰、 黃至麒、曾有仁、柯明佑

12.指導學生參加「Innovate Asia - ALTERA 2012 亞洲創新設計大賽」，榮獲**佳作**
決賽日期：101 年 09 月 10 日（友晶科技/新竹）
競賽主題：A Cloud Network-based Image Codec System for JPEG-LS
參賽學生姓名：林世偉、趙國廷、鍾承璋

13.指導學生參加「2012 德州儀器 DSP/MCU 應用競賽-DSP 軟體演算法組」，榮獲**佳作**
決賽日期：101 年 05 月 19 日
競賽主題：雲端影像編解碼系統（The Implementation of a Cloud Computing-Based Image Codec System on Cortex-A8 Platform）
參賽學生姓名：鍾承璋、陳明賢、李旻憲、謝立綱

14.指導學生參加「2012 德州儀器 DSP/MCU 應用競賽-DSP 軟體演算法組」，榮獲**佳作**
決賽日期：101 年 05 月 19 日
競賽主題：智慧型視覺監控系統（Intelligent Visual Surveillance System）
參賽學生姓名：陳松鴻、顏淯翔

15.指導學生參加「2012 德州儀器 DSP/MCU 應用競賽-MCU 創新應用實現組」，榮獲**佳作**
決賽日期：101 年 05 月 19 日
競賽主題：基於雲端技術之電源管理系統（A Cloud Technology-based Power Management System）
參賽學生姓名：戴碧伶、陳智聖、陳松鴻

16.指導學生參加「Innovate Asia - ALTERA 2011 亞洲創新設計大賽」，榮獲**佳作**
決賽日期：100 年 09 月 24 日（南港展覽館/台北市）
競賽主題：Intelligent Tracer
參賽學生姓名：林世偉、戴碧伶、鍾承璋、陳明賢

17.指導學生參加「Innovate Asia - ALTERA 2010 亞洲創新設計大賽」，榮獲**佳作**
決賽日期：99 年 11 月 05 日（友晶科技/新竹）
競賽主題：應用於醫療影像加速之雲端架構
參賽學生姓名：陳智聖、林世偉

18.指導學生參加「2010 東元科技創意競賽-Green Tech」，晉級**決賽**（Top 16）
決賽日期：99 年 08 月 28 日（國立臺灣科學教育館/台北市）
競賽主題：智慧家庭
參賽學生姓名：陳智聖、林新凱

■ 國立臺北科技大學電資學院專題製作競賽金手獎：

01.指導學生參加台北科技大學「第九屆電資學院金手獎競賽」榮獲**佳作**
競賽日期：104 年 05 月 08 日（國立臺北科技大學 電資學院）
競賽主題：E 家之煮
獲獎學生姓名：許凱翔、郭沛融、卓伯勳、張義生

02.指導學生參加台北科技大學「第八屆電資學院金手獎競賽」榮獲**佳作**
競賽日期：103 年 05 月 09 日（國立臺北科技大學 電資學院）

競賽主題：基於智慧型行動裝置之跌倒偵測暨定位救援系統（A Smart Phone-based Fall Detection, Positioning and Rescue System）
獲獎學生姓名：蔡宗翰、黃至麒、曾有仁、柯明佑

03.指導學生參加台北科技大學「第五屆電資學院金手獎競賽」，榮獲**第一名**
決賽日期：100 年 04 月 28 日（國立臺北科技大學電資學院）
競賽主題：智慧家庭（E-Home）
獲獎學生姓名：陳智聖、林新凱

■ 國立臺北科技大學電子工程系專題製作競賽獲獎：

01.指導學生參加台北科技大學電子工程系「102 學年度林宏裕校友實務專題製作競賽」，榮獲**特優獎（第一名）**
競賽日期：103 年 05 月 30 日（國立臺北科技大學電子工程系）
競賽主題：E 家之煮（Electronic Kitchen）
獲獎學生姓名：許凱翔、郭沛融、卓伯勳、張義生

02.指導學生參加台北科技大學電子工程系「101 學年度林宏裕校友實務專題製作競賽」，榮獲**特優獎（第一名）**
競賽日期：102 年 05 月 31 日（國立臺北科技大學電子工程系）
競賽主題：基於智慧型行動裝置之跌倒偵測暨定位救援系統（A Smart Phone-based Fall Detection, Positioning and Rescue System）
獲獎學生姓名：蔡宗翰、黃至麒、曾有仁、柯明佑

03.指導學生參加台北科技大學電子工程系「100 學年度林宏裕校友實務專題製作競賽」，榮獲**甲等獎（第三名）**
競賽日期：101 年 06 月 01 日（國立臺北科技大學電子工程系）
競賽主題：基於 Cortex-A8 平台之雲端影像編解碼架構（The Implementation of a Cloud Computing-Based Image Codec System on Cortex-A8 Platform）
獲獎學生姓名：鍾承璋、陳明賢

04.指導學生參加台北科技大學電子工程系「99 學年度林宏裕校友實務專題製作競賽」，榮獲**特優獎（第一名）**
競賽日期：100 年 06 月 03 日（國立臺北科技大學電子工程系）
競賽主題：智慧型監控系統（Intelligent Surveillance System）
獲獎學生姓名：顏淯翔、黃浩瑋

05.指導學生參加台北科技大學電子工程系「98 學年度林宏裕校友實務專題製作競賽」，榮獲**優等獎（第二名）**
競賽日期：99 年 06 月 01 日（國立臺北科技大學電子工程系）
競賽主題：智慧家電（Intelligent Home Appliances）
獲獎學生姓名：陳智聖、林新凱、嚴啟瑞、鄭卓軒

06.指導學生參加台北科技大學電子工程系「98 學年度林宏裕校友實務專題製作競賽」，榮獲**佳作獎**
競賽日期：99 年 06 月 01 日（國立臺北科技大學電子工程系）
競賽主題：校園電子消費系統（Electronic Consumer System）
獲獎學生姓名：陳松鴻、李宗勳、張俊端、盧譜天、蕭秀文

■ 指導學生參與科技部（國科會）大專專題研究計畫（近五年共六件）：

[NSC-UGP1] 指導學生參與「國科會 103 年度大專學生專題研究計畫」
計畫編號：MOST 103-2815-C-027-016-E
計畫名稱：行動 ECG
執行期間：103.07.01 至 104.02.28（執行畢）
計畫學生：王君豪

[NSC-UGP2] 指導學生參與「國科會 103 年度大專學生專題研究計畫」
計畫編號：MOST 103-2815-C-027-019-E
計畫名稱：具自動路由組態功能之無線網路及雲端電源監控系統
執行期間：103.07.01 至 104.02.28（執行畢）
計畫學生：許凱翔

[NSC-UGP3] 指導學生參與「國科會 101 年度大專學生專題研究計畫」
計畫編號：NSC 102-2815-C-027-018-E
計畫名稱：基於智慧型行動裝置之跌倒偵測暨定位救援系統
執行期間：102.07.01 至 103.02.28（已執行畢）
計畫學生：蔡宗翰

[NSC-UGP4] 指導學生參與「國科會 101 年度大專學生專題研究計畫」
計畫編號：NSC 101-2815-C-027-009-E
計畫名稱：雲端影像編解碼
執行期間：101.07.01 至 102.02.28（已執行畢）
計畫學生：鍾承璋

[NSC-UGP5] 指導學生參與「國科會 101 年度大專學生專題研究計畫」
計畫編號：NSC 101-2815-C-027-011-E
計畫名稱：可應用於惡劣環境之視覺化平交道安全輔助系統
執行期間：101.07.01 至 102.02.28（已執行畢）
計畫學生：陳明賢
本計畫榮獲『**國科會 101 年度大專學生研究計畫研究創作獎**』

[NSC-UGP6] 指導學生參與「國科會 99 年度大專學生專題研究計畫」
計畫編號：NSC 99-2815-C-027-013-E
計畫名稱：使用 CUDA 技術於非失真影像編碼加速之研究
執行期間：99.07.01 至 100.02.28（已執行畢）
計畫學生：陳智聖

胡心卉 助理教授

實驗 (研究) 室名稱：前瞻奈米暨綠能元件實驗室

聯絡電話：+886-2-2771-2171 ext. 2287

e-mail：hhhu@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~hhhu/

研究聚焦領域：□ H：健康科技　□ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長：1. 奈米電子元件 2. 高頻元件 3. 元件模擬與模型 4._____

1.近年重要論文及著述

(a)期刊論文

[1] **Hsin-Hui Hu*** and Hsin-Ping Huang, "High-Frequency Performance of Trigate Poly-Si Thin-Film Transistors by Microwave Annealing," ***IEEE Electron Device Letters***, vol. 36, no. 4, pp. 345-347, Apr. 2015. (IF: 3.023@2013, Ranking: 11.69% (29/248) (SCI, EI)

[2] Jhen-Yu Tsai and **Hsin-Hui Hu***, "Novel Gate-All-Around High Voltage Thin Film Transistor with T-shaped Metal Field Plate Design," ***IEEE Transactions on Electron Devices***, vol. 62, no. 3, pp. 882-887, Mar. 2015. (IF: 2.358@2013, Ranking: 17.74% (44/248)) (SCI, EI)

[3] **Hsin-Hui Hu*** and Yi-Ren Huang, "Low-Frequency Noise in Two-Bit Poly-Si TANOS Flash Memory," ***Japanese Journal of Applied Physics* (*JJAP*)**, vol. 54, no. 1, p. 014101, Jan. 2015. (IF: 1.057@2013, Ranking: 66.17% (90/136)) (SCI, EI)

[4] Jhen-Yu Tsai, **Hsin-Hui Hu***, Yung-Chun Wu, Yi-Rue Jhan, Kun-Ming Chen, and Guo-Wei Huang, "A Novel Hybrid Poly-Si Nanowire LDMOS with Extended Drift," ***IEEE Electron Device Letters***, vol. 35, no. 3, pp. 366-368, Mar. 2014. (IF: 3.023@2013, Ranking: 11.69% (29/248)) (SCI, EI)

[5] **Hsin-Hui Hu***, Yong-Ren Jheng, Yung-Chun Wu, Min-Feng Hung, and Guo-Wei Huang, "Low-Frequency Noise in SONOS-TFT with a Trigate Nanowire Structure under Program/Erase Operation," ***IEEE Electron Device Letters***, vol. 33, no. 9, pp. 1276-1278, Sep. 2012. (IF: 2.789@2012, Ranking: 10.69% (26/243)) (SCI, EI)

[6] **Hsin-Hui Hu***, Yong-Ren Jheng, Yung-Chun Wu, Min-Feng Hung, and Guo-Wei Huang, "Low-Frequency Noise in Poly-Si TFT SONOS Memory with a Trigate Nanowire Structure," ***IEEE Electron Device Letters***, vol. 32, no. 12, pp. 1698-1700, Dec 2011. (IF: 2.849@2011, Ranking: 9.39% (23/245)) (SCI, EI)

(b)研討會論文

[1] Y. H. Syu, **H. H. Hu***, J. Y. Tsai, K. M. Wang, J. J. Tsai, "Novel Trigate Field-Plated Poly-Si TFT with Improved Leakage Current and High On/Off Current Ratio," *2015 IEEE Silicon*

Nanoelectronics Workshop (*SNW*), 2015.

[2] J. Y. Tsai, **H. H. Hu***, Y. C. Wu, "A Novel Hybrid Gate-All-Around High Voltage Thin Film Transistor with T-Shaped Metal Field Plate," *2014 IEEE Silicon Nanoelectronics Workshop* (*IEEE SNW*), 2014, pp. 113-114.

[3] K. M. Chen, B. Y. Chen, H. W. Chen, C. S. Chiu, G. W. Huang, C. H. Chang, **H. H. Hu***, "Effect of Drift Region Resistance on Temperature Characteristics of RF Power LDMOS Transistors," *2013 IEEE Radio Frequency Integrated Circuits Symposium (RFIC)*, pp. 443-446.

[4] Y. R. Jheng, **H. H. Hu***, Y. C. Wu, and G. W. Huang, "Low-Frequency Noise in Gate-All-Around Nanowire Poly-Si TFT Combined with Nonvolatile SONOS Memory," *2011 Silicon Nanoelectronics Workshop (SNW)*, pp. 53-54.

李昭賢 助理教授

實驗 (研究) 室名稱：網路暨嵌入式系統實驗室

聯絡電話：2771-2171 ext. 2288

e-mail：chlee@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~chlee/

研究聚焦領域：■ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長：1. Wireless/Mobile/Sensor/Software-defined Networks

2. Tele-healthcare Wearable/Embedded System

3. P2P/Web Multimedia Streaming Services

1.近年重要論文及著述

(a) 期刊論文

(1.) **Chao-Hsien Lee**, Chung-Ming Huang, Chia-Ching Yang, and Wan-Ping Tsai (2014, Dec). A Buffer-aware Fleet-based Cooperative H.264/SVC Streaming over Vehicular Networks. International Journal on Communication Systems, 27(12), 3922 – 3938. 本人為第一作者.

(2.) **Chao-Hsien Lee**, Chung-Ming Huang, Chia-Ching Yang, and Hsiao-Yu Lin (2014, Jun). The K-hop Cooperative Video Streaming Protocol Using H.264/SVC over the Hybrid Vehicular Networks. IEEE Transactions on Mobile Computing, 13(6), 1338-1351. 本人為第一作者.

(3.) **Chao-Hsien Lee**, Chung-Ming Huang*, and Po-Han Tseng (2014, Jan). Multihomed SIP-based Network Mobility for the Scheduled Public Transit Service. Wireless Communications and Mobile Computing, 14(1), 74-84. (SCI). NSC 97-2218-E-037-002-MY2. 本人為第一作者.

(4.) **Chao-Hsien Lee**, Chung-Ming Huang*, and Jun-Hao Zhuang (2013, Sep). Proxy Handoff Support for Multi-ISP Heterogeneous Networks. Journal of the Chinese Institute of Engineers, 36(6), 760-770. NSC 97-2218-E-037-002-MY2. 本人為第一作者.

(5.) **Chao-Hsien Lee**, Chung-Ming Huang*, Chia-Ching Yang and Tai-Hsiang Wang (2012,

Jun). Co-SVC-MDC-Based Cooperative Video Streaming Over Vehicular Networks. Computer Journal, 55(6), 756-768. (SCI). 本人為第一作者.

(b) 研討會論文

(1.) Jhih-Cheng Luo, Mou-Quin Gen, Ming-Hung Hung and Chao-Hsien Lee (2014, Nov). Next-generation Human-Computer Interface for Digital Home. 4th International Symposium on Technology for Sustainability (ISTS). MOST 102-2288-E-027-010. 本人為通訊作者.

(2.) Chao-Hsien Lee, Yu-Cheng Tsao, Chao-Wen Chen, and Kuan-Chieh Wang (2014, May). Implementation of Online Query and Navigation Service for Neighboring Emergency Departments. IEEE International Conference on Consumer Electronics - Taiwan (ICCE-TW). MOST 102-2288-E-027-010. 本人為第一作者、通訊作者.

(3.) Chung-Ming Huang, Chao-Hsien Lee, Hsin-Yi Lai, and Chia-Ching Yang (2013, Dec). A Mobile Social Network-based Group Touring Scheme with FEC Packet Loss Recovery. The 10th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC). NSC 102-2221-E-027-105. Best Paper Award.

(4.) Chao-Hsien Lee, Yu-Hsien Chiu, Hao-Yun Kao, I-Te Chen, I-Nong Lee, Wen-Hsien Ho, Liang-Yu Chen, Pin-Han Huang, Sin-Hao Chen, Chih-Yun Liu, and Hsiao-Yan Lu (2013, Oct). A Body-sensed Motor Assessment System for Stroke Upper-limb Rehabilitation: A Preliminary Study. IEEE International Conference on Systems, MAN, and Cybernetics (SMC). NSC 102-2221-E-027-105. 本人為第一作者、通訊作者.

(5.) Chung-Ming Huang, Chao-Hsien Lee, and Wei-Shuang Chen (2013, Sep). A Power Efficient Pedestrian Touring Scheme based on Sensor-assisted Positioning and Prioritized Caching for Smart Mobile Devices. The 21st International Conference on Software Telecommunications and Computer Networks (SoftCOM). NSC 101-2221-E-027-147.

(6.) Chao-Hsien Lee, Chung-Ming Huang*, Chia-Ching Yang, and Wan-Ping Tsai (2012, Dec). Scheduling Media Transmission for Cooperative Video Streaming over the Hybrid Vehicular Netwroks. International Symposium on Pervasive Systems, Algorithms, and Networks (I-SPAN), Texas, USA. 本人為第一作者.

(7.) Chao-Hsien Lee, Chung-Ming Huang*, Chia-Ching Yang, and Hsiao-Yu Lin (2012, Jul). K-hop Packet Forwarding Schemes for Cooperative Video Streaming over Vehicular

Networks. The 4th International Workshop on Multimedia Computing and Communications (MCC), Munich, Germany. 本人為第一作者.

(8.) Chao-Hsien Lee, Chung-Ming Huang*, Chia-Ching Yang and Tai-Hsiang Wang (2011, Sep). A Cooperative Video Streaming System over the Integrated Cellular and DSRC Networks. IEEE 74th Vehicular Technology Conference (VTC), San Francisco, USA. 本人為第一作者.

(9.) Chao-Hsien Lee* and Yuan-Tse Yu (2010, Jul). Integrating NEMO-based Automotive Telematics into Emergency Medical Service. mHealth Workshop (colocated with IEEE Healthcom 2010), Lion, France. NSC 97-2218-E-037-002-MY2. 本人為第一作者、通訊作者.

(10.) Chao-Hsien Lee* and Yuan-Tse Yu (2010, Jul). NEMO-based Emergency Medical Service with Multiple Home Agents Support. INFORMS Service Science Conference (SSC), Taipei, Taiwan. NSC 97-2218-E-037-002-MY2. 本人為第一作者、通訊作者.

(11.) Chung-Ming Huang, Chao-Hsien Lee*, and Po-Han Tseng (2009, Jul). Multiple Router Management for SIP-based Network Mobility. The 14th IEEE Symposium on Computers and Communications (ISCC), Sousse, Tunisia. NSC 97-2218-E-037-002-MY2. 本人為通訊作者.

(12.) Chung-Ming Huang, Chao-Hsien Lee*, and Po-Han Tseng (2009, Jun). Multihomed SIP-based Network Mobility using IEEE 802.21 Media Independent Handover. IEEE International Conference on Communications (ICC), Dresden, Germany. NSC 97-2218-E-037-002-MY2. 本人為通訊作者.

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

1.教育部優良教材獎：

「數位匯流之人機互動」優良教材獎-佳作

2.教育部人才培育：

- 102 學年度數位匯流教學研習會，擔任主講人
- 102 學年度協同教學(實踐大學資訊科技與通訊學系)，擔任授課教師
- 102 學年度協同教學(國立台灣科技大學電機工程系)，擔任授課教師
- 101 學年度舉辦教育部智慧電子整合性人才培育計畫—4C 電子聯盟之盟創產學座談會
- 101 學年度舉辦教育部智慧電子整合性人才培育計畫—4C 電子聯盟之研華產學座談會
- 101 學年度舉辦教育部智慧電子整合性人才培育計畫—4C 電子聯盟之佳世達產學座談會
- 101 學年度「匯流平台之人機互動」與「Android 終端系統匯流應用設計」種子教師培訓及成果推廣研討會，擔任主講人
- 101 學年度協同教學(國立台灣科技大學電機工程系)，擔任授課教師

3.指導學生參加校外-資通訊競賽：

- 2014TiC100 校園自命題競賽-全國總冠軍(第一名)，參加學生：葉柏彥、戴佳琪、王錦源、何宜芳、陳奕方、陳建誠，題目：PPAE 彼倍/PPAE 攤位媒合平台
- 第十八屆資訊管理暨實務研討會專題競賽-佳作，學生：陳亮宇、陳信豪、劉芷筠、呂孝延，題目：以 NSDB 研究方法實作中風患者上肢復健評估系統

4.指導學生參加校內-林宏裕校友實務專題製作競賽：

- 102 學年度-甲等獎，參加學生：羅智晟、簡楙坤、洪明宏，題目：新世代數位家庭人機互動技術之研發
- 101 學年度-佳作獎，參加學生：曹祐誠，題目：急診即時查詢與導航服務系統之研發

曾柏軒 助理教授

實驗 (研究) 室名稱：行動智慧型網路實驗室

聯絡電話：02-2771-2171#2222

e-mail：phtseng@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~phtseng/

研究聚焦領域：□ H：健康科技　　v I：智慧整合科技
□ G：綠色科技　　□ H：人文與創新元素

專長：1. 網路　2. 無線通訊　3. 訊號處理　4.

1.近年重要論文及著述

(a) 期刊論文

[J-1] Bin Li, Nan Wu, Hua Wang, **Po-Hsuan Tseng**, Jingming Kuang, "Gaussian Message Passing-based Cooperative Localization on Factor Graph in Wireless Networks," in Signal Processing, vol. 111, Jun. 2015 (SCI)

[J-2] Wen-Jiunn Liu, Kai-Ten Feng, and **Po-Hsuan Tseng**, "Performance Analysis of Greedy Fast-Shift Block Acknowledgement for High-Throughput WLANs," ACM/Springer Wireless Networks, vol. 20, pp. 2503-2519, Nov. 2014 (SCI)

[J-3] **Po-Hsuan Tseng**, Kai-Ten Feng, and Chao-Hua Huang, "POMDP-based Cell Selection Schemes for Wireless Networks," IEEE Comm. Lett., vol. 18, no. 5, pp. 797-800, May, 2014 (SCI)

[J-4] Wen-Jiunn Liu, Kai-Ten Feng, and **Po-Hsuan Tseng**, "Optimality of Frame Aggregation-based Power-Saving Scheduling Algorithm for Broadband Wireless Networks," IEEE Trans. Wireless Comm., vol. 13, no. 2, pp.577-591, Feb. 2014 (SCI)

[J-5] **Po-Hsuan Tseng**, Zhi Ding, and Kai-Ten Feng, "Cooperative Self-Navigation in a Mixed LOS and NLOS Environment," IEEE Trans. on Mobile Computing, vol. 13, no. 2, pp. 350-363, Feb. 2014 (SCI)

[J-6] **Po-Hsuan Tseng**, and Kai-Ten Feng, "Geometry-Assisted Localization Algorithms for Wireless Network," IEEE Trans. on Mobile Computing, vol. 12, no. 4, pp. 774-789, April 2013 (SCI)

[J-7] **Po-Hsuan Tseng**, and Kai-Ten Feng, "Derivation of CRLB for linear least square estimator in wireless location systems," ACM/Springer Wireless Networks, vol. 18, no. 7, pp. 735-747, Oct. 2012 (SCI)

[J-8] Cheng-Tse Chiang, **Po-Hsuan Tseng**, and Kai-Ten Feng, "Hybrid Unified Kalman Tracking Algorithms for Heterogeneous Wireless Location Systems," IEEE Trans. on Vehicular Technology, vol.61, issue 2, Feb. 2012 (SCI)

(b) 研討會論文

[C-1] Po-Hsuan Tseng, "A Cluster-based Cooperative Localization Algorithm," in Proc. IEEE Vehicular Technology Conference Fall (VTC2015-Fall), Boston, Sept. 2015.

[C-2] Heng-Xiu Liu, Bo-An Chen, Po-Hsuan Tseng, Kai-Ten Feng, and Tian-Sheng Wang, "Map-aware Indoor Area Estimation with Shortest Path Based on RSS Fingerprinting," in Proc. IEEE Vehicular Technology Conference Spring (VTC2015-Spring), Glasgow, Scotland, May 2015.

[C-3] Yu-Chieh Tien, Chun-Jie Chiu, Po-Hsuan Tseng, and Kai-Ten Feng, "Novel Design of

Hand Motion Recognition based Visual Acuity Measurements through Wireless Communications," in Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2014), Washington DC, Sept. 2014.

[C-4] Yu-Pei Lin, Po-Hsuan Tseng, and Kai-Ten Feng, "Compressive Sensing based Location Estimation using Channel Impulse Response Measurements," in Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2014), Washington DC, Sept. 2014.

[C-5] Pei-Hsuan Chiu, Po-Hsuan Tseng, and Kai-Ten Feng, "Cloud Computing Based Mobile Augmented Reality Interactive System," in Proc. IEEE Wireless Communication and Networking Conference (WCNC), Istanbul, Turkey, Apr. 8, 2014

[C-6] Yao-Chia Chan, Po-Hsuan Tseng, Ding-Bing Lin, and Hsin-Piao Lin, "Detecting Maximal Power Path in Timing Synchronization of Wireless OFDM Systems," in Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2013), London, UK, Sep. 2013.

[C-7] Yao-Chia Chan, Po-Hsuan Tseng, and Ding-Bing Lin, "Fractional Timing Estimation with Fractionallyshifted Preamble for OFDM Systems," in Proc. IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2013), Seoul, Korea, Aug. 2013.

[C-8] Pei-Hsuan Chiu, Kai-Ten Feng, Po-Hsuan Tseng, "Particle-based Augmented Reality Interactive System", in Proc. IEEE International Conference on Multimedia and Expo Workshops (ICMEW 2013), San Jose, USA, 15 Jul. 2013

[C-9] Ke-Ting Lee, Po-Hsuan Tseng, Chien-Hua Chen, and Kai-Ten Feng, "Femto-Assisted Location Estimation in Macro/Femto Heterogeneous Networks," in Proc. IEEE Wireless Communication and Networking Conference (WCNC 2013), Shanghai, China, 10 Apr. 2013.

[C-10] Kai-Ten Feng, Po-Hsuan Tseng, Pei-Shuan Chiu, Jia-Lin Yang, and Chun-Jie Chiu, "3D Interactive, Augmented, Reality-enhanced Digital Learning Systems for Mobile Devices," in Proc. SPIE, The Engineering Reality of Virtual Reality, Burlingame, USA, 4 Feb. 2013.

[C-11] Chi-Wai Tang, Kai-Ten Feng, Po-Hsuan Tseng, Chien-Hua Chen, and Jing-Wei Guo, "A Pitch-Aided Lane Tracking Algorithm for Driver Assistance System with Insufficient Observations," in Proc. IEEE Wireless Communication and Networking Conference (WCNC 2012), Paris, France, 4 Ari. 2012

[C-12] Cheng-Tse Chiang, Po-Hsuan Tseng, and Kai-Ten Feng, "Hybrid TOA/TDOA Based Unified Kalman Tracking Algorithm for Wireless Networks," to appear in Proc. 21st IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2010), Istanbul, Turkey, 27 Sep 2010

(c) 專利

[P-1] Ke-Ting Lee, **Po-Hsuan Tseng**, Chien-Hua Chen, Kai-Ten Feng, "FEMTO-ASSISTED LOCATION ESTIMATION IN MACRO-FEMTO HETEROGENEOUS NETWORKS," US 8,958,819 B2

[P-2] Hsin-Long Tseng, Kai-Ten Feng, **Po-Hsuan Tseng**, Chung-Hsien Hsu, and Yu-Ping Hsu, "Power-Saving Scheduling Method of Mobile Subscriber Station of Broadband Wireless Network," PROC Patent No. CN101778454A, Jul. 14, 2010.

[P-3] Hsin-Long Tseng, Kai-Ten Feng, **Po-Hsuan Tseng**, Chung-Hsien Hsu, and Yu-Ping Hsu, "Power-Saving Scheduling Method of Mobile Subscriber Station of Broadband Wireless Network," ROC Patent No. 201019635, May 16, 2010.

(d) 專書及專章

[B-1] **Po-Hsuan Tseng** and Kai-Ten Feng (2011) Chapter 31. Cellular-based Positioning for Next Generation Telecommunication System, a book chapter in Handbook of Position Location: Theory, Practice and Advances, ISBN: 978-0-470-94342-7, Wiley-IEEE Press

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展

績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(a) 近五年內最具代表性之學理創新或應用技術突破。

本人的專長之研究領域是在統計訊號處理於通訊網路的應用(statistical signal processing for communication networks)，關注的研究議題包含無線定位與追蹤 (location estimation and tracking)、合作式定位 (cooperative localization)、無線寬頻系統設計 (mobile broadband wireless access system design) 等。目前累積的研究成果，共計於國際期刊中發表 7 篇 SCI 期刊論文， 15 篇國際會議論文和 1 篇 Wiley-IEEE 的專書章節。其中於寬頻系統省電排程設計研究成果已取得中華民國及中國發明專利，另有三項關於寬頻換手決策、及異質網路定位機制設計的研究成果正在美國專利的審查中。並曾研究 WiMAX 802.16m 與 LTE Rel. 9 的網路定位訊息交換機制，共計有三項的標準技術貢獻的提案。以下簡易說明本人於無線定位追蹤領域的研究成果：

(1) 低複雜度定位估測方法

為提供即時服務所需的定位資訊，探討具封閉解特性、低演算複雜度的二階段最小方差 (two-step least squares) 法。針對這一類利用線性化進行估測的定位問題，推導符合此問題的線性 Cramer-Rao lower bound (CRLB)，歸結出三項影響精準度的因素：(1)幾何效應；(2)訊號模型及雜訊變異性；(3)定位訊號源數目。並藉由線性 CRLB 的分析，發現線性最小方差演算法手持裝置在訊號源所圍成幾何區域外的精準度因線性化產生偏差，並提出一幾何輔助定位演算(geometry-assisted localization, GAL) 彌補源於定位裝置與訊號非線性關係衍生的幾何效應所造成定位精準度差異，並在效能上比 K. W. Cheung, W. K. Ma 等提出以 semidefinite programming 近似距離訊號最小方差及比 A. Beck, P. Stoica 所透過將距離訊號平方下的最小方差解更佳。

Po-Hsuan Tseng and Kai-Ten Feng, "Geometry-Assisted Localization Algorithms for Wireless Networks," IEEE Trans. Mobile Comput., 2013.

(2) 資源限制下的無線定位效能

為探討在資源限制下無線定位是否會因距離訊號彼此干擾議題而影響定位效能，本人首以 4G 網路為例，由 OFDMA 系統的 TOA 通道模擬中定位精準度與其限制，藉由模擬成果呈現如何以 PHY 層干擾消除與 MAC 層距離訊號排程的機制來避免干擾，此研究亦以系統層面探討如何在無線通訊系統中啓動定位機制。相關成果發表於:

Po-Hsuan Tseng and Kai-Ten Feng, "Cellular-based Positioning for Next Generation Telecommunication Systems," in Handbook of Position Location: Theory, Practice and Advances. Wiley-IEEE Press, 2011.

(b) 近五年協助產業發展績效

(1) 協助財團法人電信技術中心開發電子腳鐐上的室內定位演算法，用於監控性侵害犯罪付保護管束人。

(c) **近五年國內外之成就與榮譽(請註明名稱及日期)：**例如 1.獲得國內外重要獎項及其他榮譽，2.國際研討會邀請專題演講或規劃委員，3.國際重要委員會之委員。

(1) 國內外重要獎項

A. 斐陶斐榮譽會員, 2012 年 8 月

(2) 國際研討會重要職務：

A. Finance Co-chair: IEEE APWCS 2015

B. TPC member: WSNPS2015、ResourceWirelessNet 2015、IEEE APWCS 2013、

ISWTA2012、APACE 2012

C. Reviewer: IEEE ICC、VTC、WCNC、PIMRC、CCNC、ISCC、SoftCOM、WMCNT、ISCI、ISCAIE

D. Session chair: IEEE WCNC 2013

(3) 擔任國際學術期刊論文審查委員：

A. Reviewer: IEEE Journal on Selected Areas in Communications, IET Microwaves, Antennas & Propagation, IEEE Transactions on Aerospace and Electronic Systems, IEEE Transactions on Vehicular Technology, IEEE Communications Letters, Journal of the Chinese Institute of Engineers, IEEE Signal Processing Letters, ETRI Journal, International Journal of Systems Science

(d) **近五年在人才培育、研究團隊建立及服務方面的重要貢獻及成就：**獲得各類教學獎項；所指導之學生曾獲之獎項及特出之表現

(1) 指導姚承佑、黃俊華、劉銘燊獲得 NI RF Contest 2014 校園通訊競賽 - 軟體無線電組第二名。

(2) 指導郭奕佑科技部 103 年度「大專學生研究計畫」核定通過。

(3) 指導郭奕佑參加 2014 台北科技大學電子工程系林宏裕校友實務專題製作競賽，獲得甲等獎；黃俊華、劉銘燊獲得佳作獎。

陳晏笙 助理教授

實驗 (研究) 室名稱：電磁最佳化實驗室

聯絡電話：02-2771-2171-2281

e-mail：yschen@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~yschen/Advisor.html

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. 電磁 2. 天線 3. 無線通訊 4. RFID

1.近年重要論文及著述

(a)期刊論文

[13] Y.-S. Chen, T.-Y. Ku, and H.-E. Huang, "Development of a compact LTE dual-band antenna using fractional factorial design," *IEEE Antennas Wireless Propagat. Lett.* (accepted in Jan. 2015).

[14] Y.-S. Chen, Y.-C. Chan, H.-J. Li, E. J. Rothwell, R. O. Ouedraogo, and S.-Y. Chen, "A self-structuring electromagnetic scatterer," *IEEE Trans. Antennas Propagat.*, vol. 60, no. 4, pp. 1931–1941, Apr. 2012.

[15] Y.-S. Chen, S.-Y. Chen, and H.-J. Li, "A novel dual-antenna structure for UHF RFID tags," *IEEE Trans. Antennas Propagat.*, vol. 59, no. 11, pp. 3950–3960, Nov. 2011.

[16] Y.-S. Chen, S.-Y. Chen, and H.-J. Li, "Analysis of antenna coupling in near-field communication systems," *IEEE Trans. Antennas Propagat.*, vol. 58, no. 10, pp. 3327–3335, Oct. 2010.

(b)研討會論文

[1] Y.-S. Chen and Y.-H. Chiu, "A Parametric Study of Genetic Algorithms for Pixelated Antenna Design" in *Asia-Pacific Symp. Electromagn. Compat*., Taipei, May 2015.

[2] Y.-S. Chen and T.-Y. Ku, "Pixelated Design of Multiple Antennas for MIMO Handset Applications" in *Asia-Pacific Symp. Electromagn. Compat*., Taipei, May 2015.

[3] Y.-S. Chen, "Antenna Designs for MIMO Systems by the Pixelated Design Technique," *IEEE AP-S International Symposium and URSI Radio Science Meeting*, Memphis, Tennessee, Jul. 2014.

[4] L.-Y. Fang, Y.-S. Chen, Y.-C. Chan, E. J. Rothwell, and S.-Y. Chen, "Self-Structuring Electromagnetic Scatter Using a Conductor-Backed Template," *IEEE AP-S International Symposium and URSI Radio Science Meeting*, pp. 1066–1067, Orlando, Florida, July 2013.

[5] Y.-S. Chen, W.-H. Chou, and S.-Y. Chen, "**Applications of Optimization Techniques to Designs of Ultra-Wideband Planar Monopole Antennas**," *2012 Asia-Pacific Microwave Conference*, pp. 714-716, Kaohsiung, Taiwan, Dec. 2012.

[6] Y.-S. Chen, Y.-C. Chan, H.-J. Li, and S.-Y. Chen, "**General Rules for Objective Functions in Wide- and Multi-Band Pixelized Antenna Design**," *IEEE AP-S International Symposium and URSI Radio Science Meeting*, Chicago, Illinois, Jul. 2012.

[7] Y.-S. Chen, S.-Y. Chen, and H.-J. Li, "**Design and Optimization of a Dual-Antenna Structure for Passive RFID Tags Using Design of Experiments Technique**," *IEEE AP-S International Symposium and URSI Radio Science Meeting*, pp. 2906–2908, Spokane, WA, Jul. 2011.

[8] Y.-S. Chen and S.-Y. Chen, "Analysis of Antenna Coupling in Near-Field RFID Systems," *IEEE AP-S International Symposium and URSI Radio Science Meeting*, Charleston, SC, Jun. 2009.

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

近五年內最具代表性之學理創新或應用技術突破：

1. 自組式微波元件（Development of microwave self-structuring devices）

自組式微波元件具有比傳統微波元件更強大、更多元的功用。它除了微波元件（如天線、雙埠網路、散射平面）本身之外，還將此元件本體分別連接至電腦與接收感測器；此元件本體加入了可重組式設計，當電腦計算該如何產生最佳效能後，電腦會指派對應的組態到這些可重組式設計上。因此，一個自組式微波元件等效於一個智慧型微波系統，當它做為天線使用時，它能自動地、分別地工作於單頻、多頻、寬頻、高指向性、全向性等各式各樣的需求，反觀傳統天線則必須反覆設計、製作、更替才能達到一個自組式天線的效能。

由於自組式微波元件包含精細的系統架構，本來只有國外的電波組名校如密西根州立大學、洛杉磯加州大學曾經成功地研究發展，但我們詳細地探究它的學術理論、程式控制方式與軟硬體需求，成功的實做出一款自組式電磁散射平面，成為亞洲第一個發展出可自組式微波元件的團隊。這塊自組式電磁散射平面可因應不同的散射場需求而自動地達成工作目標，例如它能分別成為各種來向波的吸收體、反射面，並應用在朝不同方位聚焦的反射陣列天線上，而且都展現了極優異的效能。我們所完成的工作不僅實做出整個系統架構並加以量測、驗證、應用，而它的效能也可以用模擬的方式加以評估與檢驗。未來它還能發揮相當大的學術價值，我們將繼續研發相關的演算法、硬體操控與可行應用，甚至經過反覆檢驗、測試與縮小化，它還能實際應用於工業產品裡，成為我國科技產業的重大突破。

2. 網格設計技術之開發（Development of pixelated design tools）

不管是學術界或是業界，天線設計的慣用手法為先有一初始形狀，再用嘗試錯誤或是參數分析的方式微調它的外觀，直至滿足設計目標，否則便一再重複此流程。我們不想依照此傳統方式設計天線，希望更快速、更有效率地讓電腦程式自動完成所有設計流程，因此，我們以「網格設計」為基本框架，整合 Matlab 與 HFSS 建立一套突破性的自動化天線設計程式。此程式可以同時考量多個設計目標，如阻抗、輻射效率、天線場型等等。它已成功地幫啓碁科技開發出商用規格之多頻且寬頻嵌入式天線，在 8 釐米× 60 釐米的設計區域內滿足五個頻帶之頻寬要求，並同時有理想的輻射效率。此外，此程式也已經成功應用於多輸入多輸出無線通訊系統之去耦合、超寬頻單極天線設計、手機嵌入式天線設計等學術討論。此程式有相當遠大的發展前景，近程來看它可應用於各式各樣的電磁元件設計，如超穎材料之單一網格設計、微波濾波器設計、為業界更快速地開發商用天線等，中程來看它可以包裝成一套強大的商用天線開發軟體，遠程來看甚至它有機會取代傳統天線設計方式，成為天線領域的一大革命。

3. 單變量及多變量統計方法於天線設計、電波工程之應用（Applications of statistical methods to antenna designs and electromagnetic engineering）

近年來電波工程的應用往往需研發兼顧高精密性、多功能、微型尺寸與低製造成本的元件，然而傳統的設計方法往往只能針對單一工作目標進行設計，當設計考量越來越多（如多輸入多輸出無線通訊系統的天線設計），傳統設計方式容易顧此失彼，甚至耗力費時。為了更有系統、更有效率地同時達成多個設計目標，我們以統計方法中的「實驗設計法」為基礎架構，結合傳統最佳化方法，發展出一套能兼顧多目標的天線設計方式。此方法成功地開發出一款新型雙天線標籤；它有系統地兼顧兩支天線的阻抗需求並達成天線間的去耦合，因此雙天線標籤的強大效能得以實現。此設計方法不僅能極有效率地完成天線設計，應用統計學的顯著性檢定，更可由此方法的檢定結果反推回天線的物理意義，進而檢視天線學理的正確性或適用性。更重要的是，此設計方法可以應用在所有的天線設計上，尤其是需在短時間內研發完成的商用天線；商用天線除了需考慮阻抗匹配之外，往往還需同時滿足高輻射效率與適當的輻射場型，這時我們提出的設計流程就是極有效率的方法。

4. 射頻辨識系統（Engineering for RFID applications）

我們在射頻辨識系統之研究包含了近場通訊系統的理論推導，以及遠場超高頻系統的天線設計。在近場通訊系統方面，我們致力於天線耦合之理論分析，詳細分析近場通訊系統的工作機制、耦合係數以及實際應用，並根據這些學理基礎提出近場系統的設計準則；此研究成果受到國際學術界的注意。除此之外，在遠場超高頻系統方面，我們發表一款新型雙天線標籤架構；它比傳統標籤天線具有兩倍的功率接收能力、兩倍的後散射解調訊號差，因此它具有更遠的標籤偵測距離以及更強的讀取可靠度。這些研究成果分別發表於 2011、2012 IEEE Transaction on Antennas and Propagation。

<u>近五年協助產業發展績效：</u>

研究室主持人陳晏笙教授曾與啟碁科技（WNC）發展產學合作計畫，開發網格設計軟體的雛形。該程式之雛型可用來更快速的開發筆電天線，能夠自動化地決定天線幾何外觀，並且有良好的阻抗匹配與頻寬表現。因此，啟碁得以簡化設計流程，節省開發成本，進而提高產品競爭力。

註：
科技部計畫列表:

[1] 「自組式阻抗匹配器：電路原型與演算法的關鍵技術開發」，科技部專題研究計畫，2014年8月–2015年7月，計畫編號：MOST 103-2221-E-027-004。

[2] 「應用於超寬頻天線及嵌入式天線之自動化網格設計技術：軟體開發與創新研究」，科技部專題研究計畫，2013年9月–2014年7月，計畫編號：NSC 102-2218-E-027-011。

9.3 資訊工程系

劉傳銘副教授
實驗 (研究) 室名稱：應用計算實驗室(Applied Computing Lab)
聯絡電話：+886-2-27712171#4251
e-mail：cmliu@csie.ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~cmliu/

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長

1.行動網路與計算（如行動通訊系統、車載網路、感測網路、無線區域網路、寬頻無線網路、行動計算等）	2. 資料庫與資料工程	3. 演算法與資料結構	4. 無線感測網路與隨意網路(無線感測網路、無線隨意網路、車載隨意網路、無線網格網路…等)

1. 近五年成果

(a) 期刊論文

[1] Chuan-Ming Liu, Ta-Chih Su, Jenq-Haur Wang, and Yen-Lin Chen. Data Broadcasting for Dependent Information Using Multiple Channels in Wireless Broadcast Environments. *Journal of Parallel and Distributed Computing*, 74(9):2795-2807, 2014. (SCI, IF=0.859, Rank 40/99; 77/132)

[2] Jenq-Haur Wang, Chuan-Ming Liu, Jhih-Siang Syu, and Yen-Lin Chen. An Image Retrieving Scheme Using Salient Features and Annotation Watermarking. *KSII Transactions on Internet and Information Systems*, 8(1):213-231, 2014. (SCI, IF=0.560, Rank 54/78; 95/132)

[3] Chuan-Ming Liu and Chuan-Chi Lai. Distributed Continuous *k* Nearest Neighbors Search over Moving Objects on Wireless Sensor Networks. *International Journal of Distributed Sensor Networks*, Vol. 2013, Article ID 125145, 20 pages, 2013. (SCI) (SCI, IF=0.727, Rank 46/78; 82/132)

[4] Chuan-Ming Liu and Ta-Chih Su. Broadcasting On-demand Data with Time Constraints Using Multiple Channels in Wireless Broadcast Environments. *Information Sciences*, 242:76-91, 2013. (SCI, IF=3.643, Rank 6/132)

[5] Tian-Fu Lee and Chuan-Ming Liu*. A Secure Smart-Card Based Authentication and Key Agreement Scheme for Telecare Medicine Information Systems. *Journal of Medical Systems*, 37(3):9933, 2013. (SCI, IF=1.783, Rank 36/83; 11/23)

[6] Wei-Shinn Ku, Haiquan Chen, Chih-Jye Wang, and Chuan-Ming Liu. Geo-Store: A Framework for Supporting Semantics Enabled Location-Based Services with RDF Triple Stores. *IEEE Internet Computing*, 17(2):35-43, 2013. (SCI, IF=2.039, Rank 10/105)

[7] Yen-Lin Chen, Chuan-Ming Liu, Chuan-Yen Chiang, Shyan-Ming Yuan, and Jenq-Haur Wang. Building Communication Software: a Project-based Approach for Teaching C++ Object-oriented Programming. *International Journal of Innovative Computing, Information and Control*, 9(8):1-10, 2013.

[8] Jenq-Haur Wang, Jhih-Siang Syu, Chuan-Ming Liu, and Yen-Lin Chen. An Annotation Watermarking Approach to Image Tagging for Relevant Information Retrieval. *Applied Mechanics and Materials*, Vol. 284-287, pp.3310-3314, 2013.

(b) 研討會論文

甲、國際會議論文：

[1] Chuan-Ming Liu and Kai-An Yu. Effective Skyline Query Execution in Wireless Broadcast Environments. In *Proceedings of the 25th International Conference on Database and Expert Systems Applications (DEXA 2014)*, 2014.

[2] Ching-Hung Pan, Chuan-Ming Liu and Chien-Hung Liu. An Effective Probabilistic Reverse Nearest Neighbors Query Process. In *Proceedings of the 4th International Conference on Engineering and Applied Science (2014 ICEAS)*, 2014.

[3] Yen-Ting Chou, Ching-Hung Pan, and Chuan-Ming Liu. An Effective Approach for Probabilistic Skyline Search. In *Proceedings of the 4th International Conference on Engineering and Applied Science (2014 ICEAS)*, 2014.

[4] Wei-Chih Huang, Chuan-Ming Liu, and Chuan-Chi Lai. Resource Provisioning with QoS in Cloud Storage. In *Proceedings of the 3rd IEEE International Congress on Big Data (BigData 2014)*, 2014.

[5] Chih-Wu Chung, Ching-Hung Pan, and Chuan-Ming Liu. An Effective Index for Uncertain Data. In *Proceedings of the IEEE International Symposium on Computer, Consumer and Control (IS3C 2014)*, 2014.

[6] Ching-Hung Pan, Yen-Lin Chen, and Chuan-Ming Liu. *K* Nearest Neighbors Queries in Multi-channel Broadcast Environments. In *Proceedings of the IEEE International Symposium on Computer, Consumer and Control (IS3C 2014)*, 2014.

[7] Jen-Yeu Chen, Patrick C.-Y. Chen, Jin-Long Lin, Chuan-Ming Liu. TGR: Tight Geographic Routing in Wireless Ad Hoc Networks. In *Proceedings of the 10th IEEE VTS Asia Pacific Wireless Communication Symposium*, 2013.

[8] Chuan-Chi Lai, Chuan-Ming Liu, and Ying-Chi Su. A Novel Mechanism to Construct a Compatible Overlay on Heterogeneous Mobile Peers. In *Proceedings of the 2013 IEEE International Conference on Pervasive Computing and Communications (PERCOM) Workshops - the 9th International Workshop on Mobile Peer-to-Peer Computing*, 2013.

乙、國內會議論文：

[9] Tian-Fu Lee, Chuan-Ming Liu, and Tsung-Hung Lin. Efficient Chaotic Maps-Based Authenticated Key Agreements with Privacy Protection. In *Proceedings of the 2013 National Computer Symposium*, Taiwan.

[10] Wei-Chih Huang, Chuan-Ming Liu, and Chuan-Chi Lai. Resource Provisioning with Qos in Cloud Storage. In *Proceedings of the 2013 National Computer Symposium*, Taiwan.

[11] Chia-Hsiang Hsu, Ching-Hung Pan, and Chuan-Ming Liu. An Efficient Approach for Reverse Nearest Neighbor Search. In *Proceedings of the 2013 National Computer Symposium*, Taiwan.

[12] Ching-Hung Pan and Chuan-Ming Liu. A Study on the Reverse Nearest Neighbors Search on Uncertain Data. In *Proceedings of the 2013 National Computer Symposium*, Taiwan.

[13] Chi-Eng Sun and Chuan-Ming Liu. An Effective Method for Computing ε-join on Uncertain Data. In *Proceedings of the 18th Mobile Computing Workshop*, 2013.

[14] Chih-Wu Chung and Chuan-Ming Liu. Sphere Index: An Effective Query Process For High Dimensional Uncertain Data. In *Proceedings of the 18th Mobile Computing Workshop*, 2013.

[15] Ching-Hung Pan and Chuan-Ming Liu. Reverse Nearest Neighbors Search on Uncertain Data. In *Proceedings of the 18th Mobile Computing Workshop*, 2013.

[16] Chuan-Ming Liu, Kai-An Yu, and Chuan-Chi Lai. Skyline Query in the Air. In *Proceedings of the 2013 Conference on Information Technology and Applications in Outlying Islands*, 2013.

(c) 技術移轉

序號	起訖日期	技轉名稱	技轉金額	授權機構/公司行號	所屬計畫案
1	2013-12-23 | 2014-12-22	雲端儲存監控系統和自動化平台開發	66904	奇思設計有限公司	
2	2012-12-23 | 2013-12-22	雲端儲存系統整合介面及應用平台開發	38108	奇思設計有限公司	

(d) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

編號	計畫名稱	擔任職務	起迄年月	委託機構	補助金額
1	朝向在道路網路上以資料廣播方式提供多種適地性服務查詢處理之研究(103-2221-E-027-073-MY2)	主持人	103.8~105.7	科技部	1,610,000
2	使用設計因子將想像力融入科技大學工程教育之研究(103-2511-S-027-003-)	共同主持人	103.8~104.7	科技部	570,000
3	非確定資料群集方法之探討—以環境因子對於人體疾病影響為例	主持人	103.05~104.4	臺北科大北京理工	550,000
4	雲端儲存監控系統和自動化平台開發(102-2622-E-027-017-CC3)	主持人	102.11~103.10	國科會	600,000
5	無線廣播環境下複合資料查詢之探究(102-2221-E-027-088-)	主持人	102.8~103.7	國科會	650,000
6	雲端儲存系統整合介面及應用平台開發(101-2622-E-027-027-CC3)	主持人	101.11~102.10	國科會	380,000
7	智慧型多重感測行動裝置雲端服務架構平台之研究(101-2219-E-009-027-)	共同主持人	101.10~102.10	國科會	3,573,000
8	不確定資料之索引與查詢處理 (NSC 100-2221-E-027-087-MY2)	主持人	100.8~102.7	國科會	1,121,000

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

一、 近五年內最具代表性之學理創新或應用技術突破

行動運算環境下資料管理的相關議題一直是筆者近年來研究的主軸之一，探討的重點包含了如何有效地利用資料廣播(Data Broadcasting)來提供資訊服務。在探討資料廣播的過程中，筆者發現資料廣播有時會散佈過多不相關的資料，因而造成使用者接收的電力負擔及過長的服務時間。因此筆者提出一個需求式廣播的方式，廣播的內容皆是使用者需要的，而針對需求式廣播的資料排程，筆者提出在多頻道上的排程方式，可有效的降低使用者等待時間與提高資料傳遞的完整成功性。此外，關於在 RDF Triple Store 中支援語意型適地性服務的研究，已成功提出解決方式並發表。近幾年在新興的運算環境中，行動隨意網路與無線感測網路的相關議題引起了相當廣泛的研究，筆者對此兩種網路型態上的一些關於資料處理的課題亦深感興趣，包含了路由、資料收集、與金鑰管理等相關議題。筆者針對動態的無線感應網路，探索其資料收集協定並引入跨層設計(Cross-layer Design)的概念。金鑰管理方面，筆者提供的方法可大幅改善以隨意金鑰預先散佈為主的方法並與同儕合作探討相關應用研究。另外，近年來筆者亦開始探索行動同儕網路(Mobile Peer-to-Peer Networks)上資料管理與搜尋的相關問題，突破傳統集中式的服務提供方式的限制，考慮在行動同儕網路上提供不同的資訊分享應用服務，讓使用者可以輕易的透過智慧行動裝置安全地散佈與存取資訊。在此一基礎上，筆者亦考慮解決一些關於行動同儕網路上資料管理相關的議題，如資料存放效率的問題及動態資料的管理等。

二、 近五年協助產業發展績效：

筆者目前正與奇思科技公司進行一產學合作案，開發雲端儲存系統整合介面及應用平台。將多種現存的儲存架構整合成統一性的資料存取介面提供給應用服務之外，更預計開發多項新特色。使用者能透過此介面及應用平台，方便快速地存取與管理雲端儲存資料，而企業或服務營運商亦能透過租用本雲端儲存系統，有更方便的雲端儲存管理方案，也對相關的客制化雲端儲存服務業帶來助益。開發目前進入第二階段，第一階段的部分成果將進行技術移轉與推廣，產學合作案請參閱筆者基本資料。

楊士萱教授
實驗(研究)室名稱： 視訊編碼與傳輸實驗室
聯絡電話：02-27712171 *4211,4264
e-mail：shyang@csie.ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~shyang/
研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. 視訊編碼與傳輸 2. 智慧聯網電視 3. 影像處理 4. 嵌入式多媒體系統

1. 近五年成果

(a)期刊論文

1. Shih-Hsuan Yang* and Bossun Wang, "Improved adaptive-support stereo matching using local features," accepted for publication in Journal of Information Science and Engineering (Special Issue on Advances on 3D Multimedia, Nov. 2015). MOST 103-2221-E-027-059 (SCI, EI)
2. Vo Phuong Binh and Shih-Hsuan Yang*, "Complexity-aware frame-level bit allocation and rate control for H.264 scalable video coding," accepted for publication in Journal of Information Science and Engineering (2015/3). MOST 103-2221-E-027-059. (SCI, EI)
3. Shih-Hsuan Yang*, Chi-Wen Chang, and Chih-Chieh Chan, "An object-based error concealment technique for H.264 coded video," accepted for publication in Multimedia Tools and Applications (2014/07), published online 2014/7/31. (NSC 101-2219-E-027-002 and NSC 102-2219-E-027-002) (SCI, EI)
4. Shih-Hsuan Yang*, Chia-Ling Chu, and Chi-Wen Chang, "Depth-enhanced error concealment for H.264 video," Journal of Information Science and Engineering, vol. 31, no. 1, pp. 229-246, Jan. 2015. (NSC 102-2219-E-027-002) (SCI, EI)
5. Shih-Hsuan Yang*, Jia-Ze Jiang, and Hsien-Jie Yang, "Fast motion estimation for HEVC with directional search," Electronics Letters, vol. 50, no, 9, pp. 673-675, Apr. 2014. (NSC 102-2219-E-027-002) (SCI, EI)
6. Wei-Lune Tang and Shih-Hsuan Yang*, "Optimal GOP size of H.264/AVC temporal scalable coding," Advances in Intelligent Systems and Applications - Volume 2, Smart Innovation, Systems and Technologies Volume 21, 2013, pp. 403-412. (DOI 10.1007/978-3-642-35473-1_41 Print ISBN 978-3-642-35472-4 Online ISBN 978-3-642-35473-1)
7. Dong-Wei Lin, Jin-Long Hsieh, Shih-Hsuan Yang*, and Chia-Chi Yang, "Fast inter-mode selection for H.264 encoders based on coded block patterns and interblock correlation," Journal of Information Science and Engineering, vol. 27, no. 6, pp. 1901-1917, Nov. 2011. (NSC 98-2220-E-027-002 and NSC 100-2219-E-027-002) (SCI, EI)
8. 楊士萱，分散式視訊編碼的實現與應用，《工程科技通訊》，第 114 期，pp. 58-61，2011 年 8 月。NSC 95-2221-E-027-028-MY3
9. Shih-Hsuan Yang* and Wu-Lie Liao, "A compressed-domain watermarking scheme with the SPIHT coding," Journal of Information Science and Engineering, vol. 26, no. 5, pp. 1755-1770, Sep. 2010. (NSC 89-2213-E-027-055) (SCI, EI)
10. 林丁丙*、楊士萱，匯流趨勢下數位電視科技的蛻變，網路通訊國家型科技計畫簡訊(NCP Newsletter, no. 15, May 2010)，pp. 2-5, 2010 年 5 月號。
11. Shih-Hsuan Yang*, Bo-Yuan Chen, and Kuo-Hsin Wang, "H.264 fast inter-mode selection based on coded block patterns," IEICE Transactions on Information and Systems, vol. E92-D, no. 6, pp. 1324-1327, June 2009. (NSC 95-2221-E-027 -028 -MY3) (SCI, EI)

(b)研討會論文

1. Shih-Hsuan Yang* and Jia-Ze Gan, "An interactive Taiwan sign language learning system based on depth and color images," to be presented in IEEE International Conference on Consumer Electronics-Taiwan (IEEE ICCE-Taiwan), Taipei, Taiwan, June 6-8, 2015. (MOST 103-2218-E-027-006-MY3)
2. Vo Phuong Binh* and Shih-Hsuan Yang, "Bit allocation for SHVC rate control based on spatial

complexity," The 11th IEEE-RIVF International Conference on Computing and Communication Technologies (RIVF-2015), Cantho, Vietnam, Jan. 25-28, 2015. (MOST 103-2221-E-027-059)

3. Shih-Hsuan Yang* and Ming-Hui Lin, "Fast adaptive support-weight for stereo matching," The 4th International Conference on Engineering and Applied Science (2014 ICEAS), Sapporo, Japan, July 22-24, 2014. (NSC 101-2219-E-027-002 and NSC 102-2219-E-027-002)
4. Wei-Lune Tang*, Shih-Hsuan Yang, Shao-Fen Chou, and Ho-Ting Wu, "Layer arrangement and assignment of H.264 scalable video on content delivery networks," IEEE International Conference on Consumer Electronics-Taiwan (IEEE ICCE-Taiwan), Taipei, Taiwan, May 26-28, 2014. (NSC 102-2219-E-027-002)
5. Vo Phuong Binh* and Shih-Hsuan Yang, "A better bit-allocation algorithm for H.264/SVC," The fourth international Symposium on Information and Communication Technology (SoICT 2013), Da Nang, Vietnam, Dec. 5-6, 2013. (NSC 102-2219-E-027-002)
6. Shih-Hsuan Yang* and Irma Wulandari, "Fusing multifocus images with SIFT and DWT," 2nd International Conference on Electrical Engineering and Computer Sciences, March 15-17, 2013, Tokyo, Japan. (NSC 101-2219-E-027-002)
7. Vo Phuong Binh* and Shih-Hsuan Yang, "Initial quantization parameter determination for H.264/SVC," IEEE International Conference on Computing, Management and Telecommunications (ComManTEL), Ho Chi Minh City, Vietnam, Jan. 21-24, 2013. (NSC 101-2219-E-027-002)
8. Wei-Lune Tang* and Shih-Hsuan Yang, "Optimal GOP Size of H.264/AVC temporal scalable coding," International Computer Symposium (ICS), Hualien, Taiwan, Dec. 12-14, 2012. (NSC 101-2219-E-027-002)
9. Shih-Hsuan Yang* and Chun-Chi Shao, "Boundary-enhanced multiview depth estimation," The 4th International Conference on 3D Systems and Applications, Hsinchu, Taiwan, June, 25-27, 2012. (NSC 100-2219-E-027-002)
10. Shih-Hsuan Yang*, Chia-Ling Chu, and Chi-Wen Chang, "An H.264/AVC error concealment technique enhanced by depth correlation," IAENG International Conference on Imaging Engineering, March 14-16, 2012, Hong Kong, pp. 668-673. (NSC 100-2219-E-027-002) Best Paper Award
11. Shih-Hsuan Yang*, Cyong-Wun Fan, and Yu-Cheng Chen, "An improved automatic commercial detection system," Visual Communications and Image Processing (VCIP 2011), Tainan, Taiwan, Nov. 6-9, 2011. (NSC 99-2220-E-027-002)
12. Shih-Hsuan Yang* and Wei-Lune Tang, "What are good CGS/MGS configurations for H.264 quality scalable coding?" International Conference on Signal Processing and Multimedia Applications (SIGMAP 2011), Seville, Spain, July 18-21, 2011. (NSC 99-2220-E-027-002)
13. Shih-Hsuan Yang* and Chia-Chi Yang, "Fast frame rate up-conversion based on multiple frames," IEEE International Conference on Multimedia & Expo (ICME2011), Barcelona, Spain, July 11-15, 2011. (NSC 99-2220-E-027-001)
14. Shih-Hsuan Yang* and Yu-Shiuan Liou, "Fast reference frame and mode selection for multiview video coding based on coded block patterns," IEEE International Conference on Multimedia & Expo (ICME2010), Singapore, July 19-23, 2010. (NSC 98-2220-E-027-002)
15. Shih-Hsuan Yang* and Jia-Cheng Tsai, "A fast and efficient H.264 error concealment technique based on coding modes," IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB 2010), Shanghai, China, March 24-26, 2010, pp. 1-4. (NSC 98-2220-E-027-001)
16. Shih-Hsuan Yang* and Kuo-Hsin Wang, "An improved H.264 fast inter-mode decision algorithm," The Fifth IASTED European Conference on Internet and Multimedia Systems and Applications (EuroIMSA 2009), Cambridge, United Kingdom, July 13-15, 2009, pp. 66-71. (NSC 95-2221-E-027 -028 -MY3)
17. Shih-Hsuan Yang (楊士萱) and Yu-Xiang Zhan (詹育祥), "Face recognition for smart TV users using the active shape model," CVGIP 2014，墾丁夏都飯店，Aug. 17-19, 2014. (MOST 102-2219-E-027 -002)
18. 陳駿傑*、楊士萱，「H.264 解碼複雜度分析及其在 Libav 之實現」，2013 全國電信研討會，台南，Nov. 15-16, 2013. (NSC102-2219-E-027-002)
19. 周韶芬、吳和庭*、柯開維、楊士萱、唐偉倫，「支援可適性視訊編碼之內容傳遞網路的設計」，2013 全國電信研討會，台南，Nov. 15-16, 2013. (NSC102-2219-E-027-003)
20. Chih-Chieh Chan (詹智傑) and Shih-Hsuan Yang (楊士萱) "An implementation of adaptive streaming toward quality optimization," CVGIP 2013，宜蘭大學，Aug. 18-20, 2013. (NSC 102-2219-E-027-002)
21. Chun-Chi Shao (邵俊棋) and Shih-Hsuan Yang (楊士萱)，"Improving 3D depth estimation by object edges," CVGIP 2011，嘉義中正大學，Aug. 21-23, 2011. (NSC 99-2220-E-027-002)

22. 楊嘉騏、楊士萱，「一個新的 H.264 提升畫面頻率演算法」，2010 全國電信研討會，桃園長庚大學，Dec. 3-4, 2010. (NSC 98-2220-E-027-002)
23. 陳宥成、楊士萱，「以標誌為基礎之即時電視廣告偵測技術」，2010 民生電子研討會，台南，Nov. 5, 2010, pp. 92-99.
24. 謝??、楊士萱，「結合編碼區塊樣式與碼?失真成本之 H.264 快速模式選擇演算法」，2009 年全國電信研討會，高雄，Dec. 11-12, 2009. (NSC 97-2218-E-027-013)
25. 張明、楊士萱，「利用快速區塊分類之分散式視訊編碼」，2009 全國電信研討會，高雄，Dec. 11-12, 2009. (NSC 95-2221-E-027-028-MY3)
26. James Sun, Shih-Hsuan Yang, and Dong-Woei Lin, "Improved object tracking with background suppression," CVGIP 2009，南投，Aug. 23-25, 2009.

(c)專利

1. Shih-Hsuan Yang and Fu-Ming Jheng, "Method to stabilize digital video motion," US patents, patent numbers: 7,489,341 (filed 2005/1/18, issued 2009/2/10) and 7,768,551 (filed 2008/3/24, issued 2010/8/3), (申請人及專利權人：Primax Electronics Ltd. 致伸科技股份有限公司)
2. 楊士萱、鄭馥銘，發明名稱：「穩定數位視訊畫面之方法」，中華民國發明專利第 I282946 號，專利權人：致伸科技股份有限公司，專利權期間：2007/6/21 ~ 2025/4/14。

(d)技術移轉

(e)專書及專章

1. (Book Chapter) Shih-Hsuan Yang* and Wei-Lune Tang, "Investigation and improved configuration settings for H.264 CGS/MGS quality scalable coding," E-Business and Telecommunications Communications in Computer and Information Science, Volume 314, pp. 432-445, Springer-Verlag, 2012. Print ISBN978-3-642-35754-1, Online ISBN978-3-642-35755-8. This book includes the updated and extended versions of only a short list of selected papers from ICETE 2011.
2. 楊士萱、尤信程、陳偉凱，數位電視之多媒體技術，ISBN 978-957-21-5914-9，全華圖書公司，Oct. 2007。

(f)作品

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

1. 科技部智慧聯網計畫，計畫名稱：搭配多元智慧載具並結合影像與聲音技術之聯網電視人性化互動介面：計畫編號：MOST 103-2218-E-027-006-MY3，103/09/01～106/08/31 (三年期計畫)，共同主持人：王正豪、蔡偉和、廖元甫、陳彥霖、王聖銘。 ($10,223,000: 3,396,000 /3,406,000 /3,421,000)
2. 科技部開放軟體計畫，計畫名稱：友善高效能智慧聯網電視之核心技術－總計畫暨子計畫一：智慧聯網電視之高效率視訊編解碼技術，計畫編號：MOST 103-2221-E-027-059，103.8.1 ~ 104.7.31 ($1,681,000)
3. 國科會網路通訊國家型科技計畫，聯網電視關鍵技術之研發及其應用－總計畫及子計畫一：聯網電視之視訊關鍵技術(3/3)，計畫編號：NSC 102-2219-E-027-002，102.5.1 ~ 103.7.31 ($2,290,000)
4. 國科會網路通訊國家型科技計畫，以語音和影像為基礎之?網電視多使用者自然人機介面，計畫編號：NSC 101-2219-E-027-007，101.10.1 ~ 102.10.31 ($2,683,000) 共同主持人：蔡偉和、陳彥霖、王聖銘
5. 國科會網路通訊國家型科技計畫，聯網電視關鍵技術之研發及其應用－總計畫及子計畫一：聯網電視之視訊關鍵技術(2/3)，計畫編號：NSC 101-2219-E-027 -002，101.5.1 ~ 102.4.30 ($2,007,000)
6. 國科會網路通訊國家型科技計畫，聯網電視關鍵技術之研發及其應用－總計畫：聯網電視關鍵

技術之研發及其應用(1/3)（本人為總計畫主持人），計畫編號：NSC 100-2219-E-027-001，100.5.1 ~ 101.4.30 ($1,229,000)

7. 國科會網路通訊國家型科技計畫，聯網電視關鍵技術之研發及其應用－子計畫一：聯網電視之視訊關鍵技術(1/3) ，計畫編號：NSC 100-2219-E-027-002，100.5.1 ~ 101.4.30 ($799,000)
8. 國科會自由軟體暨嵌入式系統計畫，嵌入式 DVB-H 接收系統之開發：總計畫(2/2)（本人為總計畫主持人），計畫編號： NSC 99-2220-E-027 -001，99.8.1 ~ 100.7.31 ($1,321,000)。
9. 國科會自由軟體暨嵌入式系統計畫，嵌入式 DVB-H 接收系統之開發－子計畫一:DVB-H 視訊解碼軟體之開發(2/2) （共同主持人：蘇慶龍教授），計畫編號： NSC 99-2220-E-027 -002，99.8.1 ~ 100.7.31 ($936,000)
10. 景賀診所「人臉特徵分析在醫學美容之應用」專案研究計畫主持人，104.3.16 ~ 104.11.15 ($480,000)
11. 台灣國際抗老教育訓練學會與國立台北科技大學視訊編碼與傳輸實驗室產學合作案，合作主題以生醫影像、生醫電子、生醫醫工等創新技術為主。104.2.1 ~ 105.1.31 ($50,000)
12. 聲寶股份有限公司與國立台北科技大學視訊編碼與傳輸實驗室產學合作案，與聲寶公司共同成立「北科大-SAMPO Smart TV Lab」，研發 Smart TV 之創新 APP 及相關技術規格。本產學合作計畫依照「國立臺北科技大學北科之星計畫專業實驗室對外技術服務辦法」進行。102.10.1 ~ 103.9.30 ($100,000)
13. 101 年度經濟部「數位內容產業發展躍進計畫人才培訓」主持人，課程名稱：電腦圖學與擴增實境，2012/4-2012/6。

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 102 年度本校電資學院「教學優良獎」
2. 101 年度台北科技大學電資學院「教師服務優良獎」。
3. 100 學年度台北科技大學「優良導師」。
4. IPPR 技術創新暨產業應用獎佳作，作品名稱：智慧聯網電視關鍵技術。指導教授：楊士萱、吳和庭、王正豪、陳彥霖，隊員： 唐偉倫、詹育祥、黃家煇、周稚翔、葉庭瑋、劉羽欣、余兆偉、黃臣逸、高雅庭、何煦陽，2013/08。
5. 指導學生杜秉穎等 13 人，參加 2010 開放原始碼創新應用開發大賽（主辦單位：經濟部工業局、執行單位：財團法人資訊工業策進會），獲得學生組優等（獎金 10 萬與獎座乙座），作品名稱：手持式行動數位電視 DVB-H 接收系統 (DVB-H player)，2010.12。
6. 指導學生范瓊文、陳宥成、朱嘉玲等 3 人，參加 2010 開放原始碼創新應用開發大賽（主辦單位：經濟部工業局、執行單位：財團法人資訊工業策進會），獲得學生組佳作（獎金 2.5 萬與獎座乙座），作品名稱：電視廣告偵測軟體，2010.12
7. 指導專題學生林婉茹、林文靖，獲得九十八學年度國立台北科技大學資訊工程系實務專題競賽優等獎，與第 4 屆國立台北科技大學電資學院金手獎競賽佳作獎，題目：自動移調播放器，2009/11/20 與 2010/3/29。

(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

近五年內最具代表性之學理創新或應用技術突破

1. H.264 快速模式選擇與 HEVC 快速動作估計演算法

H.264 的編碼模式與動作估計佔了編碼運算的大部分時間。如何從每個巨區塊共 259 種分割方式中，快速有效找到最佳區塊分割模式，乃是研究上的重要課題。我們利用 H.264 編碼區塊樣式(coded block pattern，CBP)、鄰近區塊的編碼模式與碼率失真成本函數比較，可以提早挑選出 SKIP 模式與 M Types 型態大區塊，達到加速的效果。實驗結果顯示我們提

出的演算法不但計算簡單，而且可以在損失極有限的情形下達到 75%以上的加速效果，屬於目前世界上同類型快速決策演算法最佳水準者，高效率視訊編碼(High Efficiency Video Coding, HEVC)是繼 H.264/AVC 之後新一代的視訊編碼標準。本實驗室提供一個快速的整數點動作估計演算法，在預測出來的動作向量附近，進行方向性的延伸搜尋。相較於 HEVC 提出的快速動作估計演算法 TZ-Search，本研究提出的方法在幾乎不損及影像品質的情形下(BD-Rate = 0.18%, BD-PSNR = -0.007dB)，可以減少 65%的整數點動作估計的時間。

2. 可適性視訊編碼技術及其在群播網路之整合應用

可適性視訊編碼(scalable video coding, SVC)技術讓視訊以最高品質編碼一次之後，即可依照頻寬、品質、或運算能力的要求或限制，擷取所需要的部份位元串，重建該碼率下最佳品質的影像。本實驗室對此主題之研發成果包括：(i)針對 SVC 編碼提出一個新的構想，有條件的不使用較小的區塊進行動作估計，這樣不但可以避免層間預測錯誤，也大幅縮減了 SVC 編碼的時間；(ii)推導出 H.264 SVC 第一張 I 畫面的初始量化參數(QP)的選擇方式，有效提高初始 QP 的正確性，提高影像品質；(iii)提出新的 H.264 SVC 時間分層與空間分層的最佳位元分配(bit allocation)演算法，根據目標碼率、階層數、緩衝區限制、以及影像複雜度分配碼率，可有效提升視訊品質；(iv)結合 CDN (Content Delivery Network)網路提出之 SVC 碼率分割與 CDN 代理伺服器頻寬分配演算法，有效降低使用者得到服務的等待時間。

可適性視訊編碼的位元分配(bit allocation)和碼率控制(rate control)是決定影像品質的重要技術，除了觀測緩衝區的填滿程度與過去相同類型畫面所消耗的碼率，本實驗室針對 H.264 SVC 及 Scalable HEVC，分別提出簡易且可有效估測當前畫面複雜度的方法，以更精確的進行位元分配，實驗結果顯示此構想可提升影像 PSNR，與避免緩衝區 overflow 與 underflow。受到智慧型終端的崛起與網際網路的廣泛運用，視訊串流成為一個近期備受關注之熱門技術。MPEG-DASH 允許標準化之客戶端與伺服器端傳遞視訊串流服務，其服務能依照網路狀態的改變動態調整視訊串流之畫面品質，進而提供流暢且高品質之視訊串流體驗。本實驗室實作一套完整之 MPEG-DASH 系統，並且使用開源式軟體建置包含伺服器、網路通道以及客戶端的系統環境。我們同時提出一套新的 MPEG-DASH 的自適性品質決策機制，此自適性機制能夠依照當下之網路狀態與暫存器使用量選擇最適當之視訊片段，以提供順暢且穩定之視訊串流服務。

3. 智慧聯網電視之關鍵技術開發與雛型系統建置

主持人及其研發團隊已將人臉識別、手勢辨識、與語音識別，成功整合至跨平台遠端影音預錄電視 NPVR (network personal video recorder)系統。本團隊開發之即時人臉識別技術，讓使用者可以用人臉登入系統，享受個人化節目推薦、個人化自動訊息提醒等個人化服務。本計畫已完成在智慧聯網電視所需要的控制命令詞下，以直覺手勢進行聯網智慧電視之操控（如畫面物件之移動、選取、返回上一頁，以及影片之全螢幕、播放、暫停、大聲、小聲、靜音等）。本計畫也利用手勢來觸發語音控制，當系統偵測到使用者以手勢告知將採取語音控制後，再進行語音內容辨識，利用直覺的語音命令詞作為播放影片頁面的控制，包括全螢幕、播放、暫停、大聲、小聲、靜音以及返回等，並針對各控制詞設計直覺的視覺介面回饋。以上成果已與聲寶股份有限公司，以「北科大-SAMPO Smart TV Lab」的方式進行產學合作，同時研發 Smart TV 之創新 APP 及相關技術規格。

鄭有進教授

實驗 (研究) 室名稱：軟體系統實驗室 Software Systems Lab

聯絡電話：(02)2771-2171*4232

e-mail：yccheng@csie.ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~yccheng/

研究聚焦領域：☐ H：健康科技 ■ I：智慧整合科技
☐ G：綠色科技 ☐ H：人文與創新元素

專長：1. 軟體工程 2. 人工智慧 3. 程式設計 4._____

1. 近年重要論文及著述

(a) 期刊論文

1. Jwo, Jung-Sing, Tien-Song Hsu, Yu Chin Cheng, and others. "Jumpstarting Application Lifecycle Management: A New Approach with Tool Support." Journal of Information Science and Engineering 29, no. 3 (2013): 475–92.
2. Lee, Jonathan, and Yu Chin Cheng. "Change the Face of Software Engineering Education: A Field Report from Taiwan." Information and Software Technology 53, no. 1 (2011): 51–57.
3. Jwo, Jung-Sing, and Yu Chin Cheng. "Pseudo Software: A Mediating Instrument for Modeling Software Requirements." Journal of Systems and Software 83, no. 4 (April 2010): 599–608. doi:10.1016/j.jss.2009.10.042.
4. Chen, Chien-Tsun, Yu Chin Cheng, Chin-Yun Hsieh, and Tien-Song Hsu. "Delivering Specification-Based Learning Processes with Service-Oriented Architecture: A Process Translation Approach." J. Inf. Sci. Eng. 25, no. 5 (2009): 1373–89.
5. Chien-Tsun Chen, Yu Chin Cheng, Chin-Yun Hsieh, and Tien-Song Hsu. "JCIS: An Open Source System for Continuous Integration with Java Technology." Journal of Software Engineering Studies 4, no. 1 (June 2009): 56–65.
6. Chen, Chien-Tsun, Yu Chin Cheng, Chin-Yun Hsieh, and I.-Lang Wu. "Exception Handling Refactorings: Directed by Goals and Driven by Bug Fixing." Journal of Systems and Software 82, no. 2 (2009): 333–45.
7. Chien-Tsun, Chen, Yu Chin Cheng, and Chin-Yun Hsieh. "Contract Specification in Java: Classification, Characterization, and a New Marker Method." IEICE Transactions on Information and Systems 91, no. 11 (2008): 2685–92.

(b)研討會論文

1. Y. C. Cheng, "Applying How To Solve It in Teaching Object-Oriented Programming and Engineering Practices," AsianPLoP 2014, Tokyo, Japan, 2014.
2. 劉展君, 鄭有進, and 謝金雲, "基於 Robot Framework 的平行處理測試函式庫：以手機測試為例," 2014 台灣軟體工程研討會, 南投, 2014.
3. 張學斌, 鄭有進, and 謝金雲, "一個改善 Android 行動裝置 GUI 自動化測試效率與穩定性的輔助工具," 2014 台灣軟體工程研討會, 南投, 2014.
4. 林軒平, 李家政, 鄭有進, 周忠信, and 謝金雲, "基於 Pseudo Software 需求模型自動產生 Robot Framework 驗收測試案例之研究," 2014 台灣軟體工程研討會, 南投, 2014.
5. 林佑明, 鄭有進, and 謝金雲, "一個基於 Robot Framework 的 Android 自動化測試函數庫," 2014 台灣軟體工程研討會, 南投, 2014.
6. C.-Y. Hsieh, C.-H. Tsai, and Y. C. Cheng, "Test-duo: a framework for generating and executing

automated acceptance tests from use cases," in Proceedings of the 8th International Workshop on Automation of Software Test, 2013, pp. 89–92.
7. 謝慕憶, 謝金雲, and 鄭有進, "以雲端平台特性為目標將 Web 應用程式遷移至雲端之重構方法： 以 ezScrum 為例," 2013 台灣軟體工程研討會, 高雄, 2013.
8. 楊勝雄, 鄭有進, 謝金雲, and 周忠信, "基於 PS4Mobile 的跨平台行動應用程式驗收測試方法與工具," 2013 台灣軟體工程研討會, 高雄, 2013.
9. 陳膺仁, 謝金雲, and 鄭有進, "使用 AOP 技術將 Web 應用程式遷移至雲端之方法：以 ezScrum 為例," 2013 台灣軟體工程研討會, 高雄, 2013.
10. 洪陳佐 and 鄭有進, "一個確保 Android 雲端測試裝置即用性的方法," 2013 台灣軟體工程研討會, 高雄, 2013.
11. 李俊毅 and 鄭有進, "Android 雲端測試平台的安全性防護方法," 2013 台灣軟體工程研討會, 高雄, 2013.
12. J. Lee, A. Liu, Y. C. Cheng, S.-P. Ma, and S.-J. Lee, "Execution Plan for Software Engineering Education in Taiwan," in Software Engineering Conference (APSEC), 2012 19th Asia-Pacific, 2012, vol. 1, pp. 749–753.
13. 許峻榮, 鄭有進, 徐天送, and 周忠信, "擴充 Pseudo Software 需求模型以實現自動化驗收測試的方法與工具," 2012 台灣軟體工程研討會, 臺北科技大學, 2012.
14. 張耀庭, 陳偉凱, and 鄭有進, "一個以雲端運算進行系統效能測試之系統," 2012 台灣軟體工程研討會, 臺北科技大學, 2012.
15. C.-Y. Hsieh, Y. C. Cheng, and C.-T. Chen, "Emerging patterns of continuous integration for cross-platform software development," in Proceedings of the 2nd Asian Conference on Pattern Languages of Programs, 2011, p. 9.
16. 吳燾佑, 歐伯浩, 鄭有進, and 謝金雲, "一個與 ezScrum 整合之程式碼檢閱 工具," 2011 台灣軟體工程暨物件導向技術與應用研討會, 輔仁大學, 2011.
17. 王熙鈞, 謝金雲, 鄭有進, and 陳建村, "跨平台軟體持續整合樣式之已知案例探討," 2011 台灣軟體工程暨物件導向技術與應用研討會, 輔仁大學, 2011.
18. J.-S. Jwo, Y. C. Cheng, T.-S. Hsu, and C. H. Liu, "Rapid Application Lifecycle Management: a new Approach with Tool Support.," in SoMeT, 2010, pp. 212–217.

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

研發與產學合作計畫

計畫名稱	計畫執行起始日期	計畫執行結束日期	計畫內工作類別	研究總金額	委託單位
整合式雲端測試：平台與服務之開發－子計畫三:持續整合與測試環境虛擬化之開發(III)	2014/8/1	2015/7/31	共同主持人	644000	科技部
自由軟體 ezScrum 的開發與維護以及 Scrum 訓練服務	2014/8/1	2015/7/31	主持人	1265000	科技部
智慧電子學院計畫 - 北科大軟體中心短期在職訓練班	2014/3/5	2014/12/15	協同主持人	230000	財團法人資訊工業策進會

Android 雲端測試服務	2013/9/1	2014/7/31	主持人	880000	資拓宏宇國際股份有限公司
整合式雲端測試：平台與服務之開發－總計畫暨子計畫三:整合式雲端測試：持續整合與測試環境虛擬化之開發(II)	2013/8/1	2014/7/31	主持人	1561000	科技部
整合式雲端測試：平台與服務之開發－總計畫暨子計畫一：Android App 伺服器效能測試服務之開發 (III)	2013/8/1	2014/7/31	共同主持人	1543000	科技部
Android 測試案例自動化	2013/7/1	2014/6/30	共同主持人	1490400	因簽署保密條款，不便公開機構名稱
智慧電子學院計畫 - 北科大軟體中心短期在職訓練班	2013/3/15	2013/12/15	主持人	265000	財團法人資訊工業策進會
整合式雲端測試：平台與服務之開發-總計畫暨子計畫三：整合式雲端測試：持續整合與測試環境虛擬化之開發	2012/8/1	2013/7/31	主持人	1533000	科技部
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發計畫(III)	2012/3/1	2013/2/28	主持人	200000	科技部
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之計畫(3/3)	2011/12/1	2012/11/30	主持人	5000000	經濟部
以例外處理策略的軟體容錯與診斷：樣式語言、物件導向設計與診斷工具	2011/8/1	2012/7/31	主持人	719000	科技部
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發計畫(II)	2011/1/1	2011/12/31	主持人	220000	科技部
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之三年計畫	2010/12/1	2011/11/13	主持人	5500000	經濟部
軟體開發流程評估計畫	2010/11/1	2010/12/31	主持人	60000	智新資通股份有限公

					司
以例外處理為策略的軟體容錯與診斷：樣式語言、物件導向設計與診斷工具	2010/8/11	2011/7/31	主持人	650000	科技部
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之計畫(I)	2010/1/1	2011/11/13	主持人	220000	科技部

獎項與榮譽

- Fourth Asian Conference on Pattern Languages of Programs, Asian PLoP 2015，member of program committee。
- 2013 全國計算機會議(NCS) Programming Language & Software Engineering Workshop co-chair
- 第六屆台灣軟體工程會議共同主席(2010/7)
- Member of Program Committee, ICS 2010 -- International Workshop on Software Engineering, Databases, and Knowledge Discovery
- [建立研究團隊] 擔任科技部整合型計畫「整合式雲端測試：平台與服務之開發－總計畫暨子計畫三」計畫主持人(2012/8~2014/7)，並建立北科大「軟體測試工廠」，帶領團隊與產業界積極進行合作。
- [服務] 擔任經濟部技術處 SBIR 主審(2011/1~今)。
- [服務] 台灣軟體工程學會理事長(2011/7~2014/7)
- [服務] 台灣軟體工程學會常務理事(2008/6~2014/7)
- [學生獲獎] 所指導學生獲得 TCSE 2013 最佳論文
  1. 謝慕憶、謝金雲、鄭有進，"以雲端平台特性為目標將 Web 應用程式遷移至雲端之重構方法： 以 ezScrum 為例"，2013 台灣軟體工程研討會，7 月 5~6 日，高雄
  2. 李俊毅、鄭有進，"Android 雲端測試平台的安全性防護方法"，2013 台灣軟體工程研討會，7 月 5~6 日，高雄

吳和庭教授

實驗 (研究) 室名稱：NET LAB

聯絡電話：02-27712171-4221

e-mail：htwu@csie.ntut.edu.tw

網址：http://netlab.csie.ntut.edu.tw/

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技

□ G：綠色科技 □ H：人文與創新元素

專長

1. 下世代網路及網際網路	2. 無線通訊系統	3. 多媒體網路與應用	4.

1. 近五年成果

(a)期刊論文

1. K.-W. Ke, H.-T. Wu, D. Jayasakthi and S.-T. Huang, Dec. 2013”Adaptive Admission Control with Bandwidth Quantization and Dynamic Reallocation for Mobile WiMAX,”International Journal of Future Computer and Communication, Vol. 2, No. 6, Dec. 2013, pp. 623-627.
2. H.-T. Wu, C.-W. Tuan and K.-W. Ke, Sept. 2013, “The Designs of Interconnected Optical Ring Networks,” Applied Mechanics and Materials, Vols. 411-414, Sept. 2013, pp. 703-706, NSC-101-2219-E-027-003.
3. T.-Y. Wu, H.-T. Wu, and K.-W. Ke, Sept. 2013, “The Design of a NPVR System for an IPTV Platform,” International Journal of Electronics and Electrical Engineering, Vol. 1, No. 3, Sept., 2013, pp. 140-144. NSC-101-2219-E-027-003.
4. H.-T. Wu, Y.-W. Sun and K.-W. Ke, Aug. 2012, “Designs of Access Mechanisms in IEEE 802.16e Mobile Systems,” International Journal of Computer Theory and Engineering, Vol. 4, No. 4, Aug. 2012, pp. 599-603, NSC 99-2220-E-027-003.
5. L. Yan, H.-T. Wu, and K.-W. Ke, Jan. 2012, “The Design of the Power Saving Mechanisms for IEEE 802.16e Networks,” Advanced Materials Research, Vols. 433-440, Jan., 2012, pp 5068-5072, NSC 99-2220-E-027-003.
6. C.-N. Tsai, K.-W. Ke, and H.-T. Wu, Jan. 2012, “Approximate Packet Delay Analysis for IEEE 802.16 Networks,” Advanced Materials Research, Vols. 433-440, Jan., 2012, pp 5063-5067.
7. C.-H. Huang, K.-W. Ke, and H.-T. Wu, Sept., 2011, “Performance of Multisource Application Layer Multicast Routing : A Cost-Based Approach,” Advanced Materials Research, Vols. 341-342, Sept., 2011, pp. 617-622.
8. H.-T. Wu and C.-W. Tuan, Oct. 2010, “Performance Analysis of a Scalable Optical Packet Switching Architecture,” Optical Engineering, (SCI, EI), Vol. 49, No. 10, Oct., 2010, 105003. NSC 99-2220-E-027 -003.
9. K.-W. Ke, C.-N. Tsai and H.-T. Wu, July 2010”Performance Analysis for Hierarchical Resource Allocation in Multiplexed Mobile Packet Data Networks,”Computer Networks, (SCI, EI), Vol. 54, No. 10, July 2010, pp. 1707-1725.
10. H.-T. Wu, K.-W. Ke and P. Hung, April 2010”Designs of High-Performance Multicast Scheduling Mechanisms in WDM Networks,”Photonic Network Communications, (SCI, EI), Vol. 19, No. 2, April 2010, pp. 121-133, NSC 93-2213-E-027-037.

(b)研討會論文

1. C.-P. Liu, H.-T. Wu, Y.-T. Chiang, S.-C. Chien and K.-W. Ke, "An energy saving mechanism of EPON networks for real time video transmission," Proceeding of 7th International Conference on Digital Image Processing, Los Angeles, USA, April 9-10, 2015, MOST 103-2221-E-027-060..
2. 錢世傑、劉健平、吳和庭、柯開維, Nov., 2014, “乙太被動式光纖網路多模式節能機制之設計與比較,”2014 民生電子研討會 (WCE 2014), 台灣台中市, Nov., 29, 2014, MOST 103-

2221-E-027-060.

3. 吳立偉、柯開維、吳和庭、曾訓華、吳進益, Nov., 2014, “Android 手持裝置之輻射偵測系統," 2014 全國電信研討會(NST 2014), 台灣台中市, Nov. 26-27, 2014.
4. K.-W. Ke, H.-T. Wu, Y.-L. Chang, and Y.-F. Huang, Nov., 2014, “Lawful Internet Interception and Information Recovery with Packet-Flow Inspection,” 2014 年數位鑑識與科技偵查研討會, Taipei, Taiwan, Nov. 13, 2014. NSC 102-2218-E-027-004.
5. H.-T. Wu, C.-W. Tuan, and K.-W. Ke, Aug., 2014, “Mathematical Modeling and Queueiing Analysis of an Optical Packet Switch,” Proceeding of 3rd International Eurasian Conference on Mathematical Sciences and Applications (IECMSA 2014), Vienna, Austria, Aug. 25-28, 2014, NSC102-2218-E-027-004.
6. W.-L. Tung, S.-H. Yang, S.-F. Chou and H.-T. Wu, May, 2014,“Layer Arrangement and Assignment of H.264 Scalable Video on Content Delivery Networks,” Proceeding of IEEE International Conference on Consumer Electronics – Taiwan (IEEE 2014 ICCE-TW), Taipei, Taiwan, May. 26-28, 2014.
7. P.-C. Mao, H.-T. Wu and K.-W. Ke, Nov., 2013, “A Delay-based Void Filling DBA in Long-reach EPON for Multimedia Services,” Proceeding of Australasian Telecommunication Networks and Applications Conference (ATNAC 2013), Christchurch, New Zealand, Nov. 20-22, 2013, NSC102-2219-E-027-003.
8. 周韶芬、吳和庭、柯開維、楊士萱、唐偉倫, Nov., 2013, “支援可適性視訊編碼之內容傳遞網路的設計,” 2013 全國電信研討會 (NST 2013), 台灣台南市, Nov. 15-16, 2013, NSC102-2219-E-027-003.
9. 蔡文能、柯開維、吳和庭、廖梓彤, Nov., 2013, “以對等式網路傳輸技術為基礎之即時多媒體串流系統,” 2013 全國電信研討會 (NST 2013), 台灣台南市, Nov. 15-16, 2013.
10. 張以磊、柯開維、吳和庭, Nov., 2013, “分散式網路事件分析紀錄系統之研製,” 2013 全國電信研討會 (NST 2013), 台灣台南市, Nov. 15-16, 2013.
11. 廖梓彤、柯開維、吳和庭、蔡文能, Nov., 2013, “具快速恢復特性之多源應用層群播影音串流系統之研製,” 2013 全國電信研討會 (NST 2013), 台灣台南市, Nov. 15-16, 2013.
12. 巫宗育、吳和庭、柯開維, Nov., 2012, “遠端影音預錄之跨平台網路電視系統的實現,” 2012 全國電信研討會 (NST 2012), 台灣 彰化市, Nov. 16-17, 2012, NSC 101-2219-E-027-003.
13. 林祐民、柯開維、吳和庭, Nov., 2012, “基於雲端運算之網路通訊監察分析系統之研製,” 2012 全國電信研討會 (NST 2012), 台灣 彰化市, Nov. 16-17, 2012.
14. C.-H. Huang, K.-W. Ke, and H.-T. Wu, Sept. 2012, “The Design of Multisource Multicast Routing with Fast Route Recovery,” Proceeding of 2012 9th International Conference on Ubiquitous Intelligence and Computing (UIC 2012), Fukuoka, Japan, Sept., 4-7, 2012.
15. P.-H Yin, H.-T. Wu and and K.-W. Ke, Dec., 2011, “The Design of Offline Scheduling Mechanisms on EPON,” (In Chinese), Proceeding of 2011 National Computer Symposium (NCS 2011), Chia-I, Taiwan, Dec. 2-3, 2011, NSC 100-2219-E-027-003.
16. H.-T. Wu, G.-P. Lin and and K.-W. Ke, Nov., 2011, “The QoS Aware Mechanism of an Optical Packet Switch Architecture for Multimedia Applications,” Proceeding of the 6th IEEE International Conference on Broadband Communications and Biomedical Applications (IB2COM 2011), Melbourne, Australia, Nov. 21-24, 2011, NSC 100-2219-E-027-003.
17. P.-S. Yin, H.-T Wu, K.-J. Chou, Y.-C. Lin and M.-H. Wu, Nov., 2011, “The Implementation of Network and Transport layer Modules for a DVB-H Reception System,” (in Chinese), Proceeding of Workshop on Consumer Electronics 2011 (WCE 2011), Taichung, Taiwan, Nov. 11th , 2011, NSC 100-2219-E-027-003.
18. C.-H. Huang, C.-T. Wu, K.-W. Ke, and H.-T. Wu, Dec. 2010, “MAODV-Based Multisource Multicast Routing with Fast Route Recovery Scheme in MANET,” Proceeding of 2010 International Computer Symposium, Tainan, Taiwan, Dec. 16-18, 2010.
19. C.-H. Huang, K.-W. Ke, and H.-T. Wu, May 2010, “The Assessment of Optimal Normalized Cost on Multisource Multicast Routing Protocols for Wired and Wireless Networks,” Proceeding

of 7th IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2010), May 20-21, 2010, Kaohsiung, Taiwan.

(c) 產學及研究計畫.

計　畫　名　稱 （本會補助者請註明編號）	計畫內擔任之工作	起迄年月	補助或委託機構
無線低功耗節點對時演算法 B200-104RN1	主持人	104 年 1 月~ 104 年 12 月	工業技術研究院
友善高效能智慧聯網電視之核心技術－子計畫三：高效能智慧聯網電視網路關鍵技術的研發 MOST 103-2221-E-027-060-	主持人	103 年 8 月~ 104 年 7 月	科技部
在工業環境下無線感測網路之多重路徑路由的可靠度分析	主持人	103 年 1 月~ 103 年 12 月	工業技術研究院
智慧型行動裝置之麥克風輻射偵測實用性調查分析	主持人	102 年 10 月 ~	核能研究所核能儀器組
聯網電視關鍵技術之研發及其應用－子計畫二：聯網電視之網路關鍵技術(3/3) NSC 102-2219-E-027-003-	主持人	102 年 5 月~ 103 年 7 月	國科會
手機 APP 之伺服器接收/顯示/儲存功能程式開發	主持人	102 年 1 月~ 102 年 4 月	核能研究所核能儀器組
聯網電視關鍵技術之研發及其應用－子計畫二：聯網電視之網路關鍵技術(2/3) NSC 101-2219-E-027-003-	主持人	101 年 5 月~ 102 年 7 月	國科會
聯網電視關鍵技術之研發及其應用－子計畫二：聯網電視之網路關鍵技術(1/3) NSC 100-2219-E-027-003 NT 889000	主持人	100 年 5 月~ 101 年 7 月	國科會
跨平台之泛用型異質通訊網路監管系統設計與實現 NSC 99-2220-E-027-007	共同主持人	99 年 8 月~ 100 年 7 月	國科會
嵌入式 DVB-H 接收系統之開發－子計畫二:DVB-H 網路與傳輸層軟體之開發(2/2) NSC 99-2220-E-027 -003	主持人	99 年 8 月~ 100 年 7 月	國科會

陳英一教授
實驗室名稱：網際網路應用與服務實驗室
聯絡電話：(02)2771-2171#4235
e-mail：ichen@ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~ichen/

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長

1. 雲端系統設計	2. 行動應用開發	3.軟體工程	4.資訊安全

1. 近五年成果

(a) 期刊論文

1. C. M. Yu, G. K. Ni, Ing-Yi Chen, E. Gelenbe, S. Y. Kuo (2014, January). Top-k Query Result Completeness Verification in Tiered Sensor Networks. IEEE Trans. on Information Forensic and Security, 9(1), 109-124. (SCI)
2. Y. S. Liang, W. H. Chung, G. K. Ni, Ing-Yi Chen , H. Zhang, S. Y. Kuo (2012, June). Resource Allocation with Interference Avoidance in OFDMA Femtocell Networks. IEEE Trans, 61(5), 2243-2255. (SCI).
3. N. W. Wang, H. C. Chao, Ing-Yi Chen and Y. M. Huang (2010, August). A novel user's authentication scheme for pervasive on-line media services. Telecommunication Systems, 44(3-4), 181-190. (SCI).
4. Ing-Yi Chen, G. K. Ni, C. H. Kuo, and C. Y. Lin (2010, July). A BPEL-Based Fault-Handling Architecture for Telecom Operation Support Systems. Journal of Advanced Computational Intelligence and Intelligent Informatics, 14(5), 523-530. NSC 97-2622-E-027-002-CC1.
5. B. Y. Ye, P. Y. Yeh, S. Y. Kuo, and Ing-Yi Chen (2009, October). Design-for-testability techniques for CORDIC design. Microelectronics Journal, 40(10), 1436-1440. (SCI).
6. Ing-Yi Chen, Guo-Kai Ni and Chau-Young Lin (2008, August). "A Runtime Adaptive Service Bus Design for Telecom Operations Support Systems," IBM Systems Journal, 47, 445-456. (SCI)

(b) 研討會論文

1. F. V. Yarochkin, V. Kropotov, Y. Huang, G. K. Ni, I. Y. Chen, and S. Y. Kuo, "Investigating DNS traffic anomalies for malicious activities," Proceedings of the 43rd IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2013), Budapest, Hungary, Jun. 2013
2. Y. L. Hu, W. B. Su, Y. Huang, I. Y. Chen, and S. Y. Kuo, "Dependable Architecture of RFID Middleware on Networked RFID Systems," Proceedings of the 2013 IEEE International Conference on Internet of Things (iThings 2013), Beijing, China, Aug. 2013
3. C. M. Yu, K. K. Ni, Ing-Yi Chen, E. Gelenbe, and S. Y. Kuo, "Top-k Query Result Completeness Verification in Sensor Networks," Proceedings of the 2013 IEEE International Conference on Communications (ICC 2013), Budapest, Hungary, Jun. 2013
4. F. P. Wang, W. H. Chungy, G. K. Ni, Ing-Yi Chen and S. Y. Kuo(2012, Sep). Moving Object Extraction Using Compressed Domain Features of H.264 INTRA Frames . The 2012 IEEE International Conference on Advanced Video and Signal-Based Surveillance, Beijing, China.
5. Ing-Yi Chen and G. K. Ni(2011, Aug). A QoS-Aware Job Rescheduling Mechanism for Service-Oriented Media Distribution Systems . Service-oriented Enterprise Architecture for Enterprise Engineering, Helsinki, Finland. NSC 99-2221-E-027-041-MY3.
6. Ing-Yi Chen, G. K. Ni, C. H. Kuo, and C. Y. Lin(2010, Jun). A Service-Oriented Management Framework for Telecom Operation Support Systems. The 2010 IEEE International Conference

Service System and Service Management, Tokyo, Japan. NSC 98-2622-E-027-002-CC1.

(c) 專利

「類別」代碼：(A)發明專利(B)新型專利(C)新式樣專利。

類別	專利名稱	國別	專利號碼	發明人	專利權人	專利核准	計畫編號
A	智慧型手機應用巨集指令執行平台	中華民國	I465952	陳英一	國立臺北科技大學	2014/12 至 2031/05	102-2221-E-027 -104 - MY3
A	迭代式智慧型手機應用開發平台	中華民國	I463403	陳英一	國立臺北科技大學	2014/12 至 2031/05	102-2221-E-027 -104 - MY3
A	基於智慧型手機及訊息導向中介軟體之社群行蹤交換平台	中華民國	I459766	陳英一	國立臺北科技大學	2014/11 至 2031/05	102-2221-E-027 -104 - MY3
A	應用於單一簽入環境之系統間帳號同步平台	中華民國	I 355839	陳英一	國立臺北科技大學	2012/01 至 2027/11	95 -2221 - E - 027 - 016 -
A	具備事件驅動影像監控功能之 RFID 資產管理系統	中華民國	I 349887	陳英一	國立臺北科技大學	2011/10 至 2027/09	95 - 2221 - E - 027 - 016 -
A	動態調適之服務匯流排	中華民國	I 336191	陳英一	國立臺北科技大學	2011/01 至 2027/11	95 - 2622 - E - 027 - 018 - CC3
A	應用於單一簽入環境之系統間權限管理系統	中華民國	I 356352	陳英一	國立臺北科技大學	2012/01 至 2027/10	95 - 2221 - E - 027 - 016 -
A	一種高可靠之非同步網路服務呼叫架構及方法	中華民國	I 376127	陳英一	國立臺北科技大學	2012/11 至 2027/12	95 - 2622 - E - 027 - 018 - CC3
A	具備無線操作功能的數位內容應用系統	中華民國	I 322972	陳英一	國立臺北科技大學	2010/04 至 2027/04	95-2221-E - 027 - 016 -
A	具有可調整流程功能之軟體部署系統	中華民國	I 323583	陳英一	國立臺北科技大學	2010/04 至 2026/12	93-2213-E - 027 - 045 -
A	一種高可靠之非同步網	中華民	I376127	陳英一	國立臺北科技大學	2012/11 至	99-2622 -E-027-

	路服務呼叫架構及方法	國				2027/12	001-CC1
A	具備服務評鑑及使用知識之網路服務註冊系統	中華民國	I361406	陳英一	國立臺北科技大學	2012/04 至 2028/02	99-2622 -E-027- 001-CC1
A	基於語彙基元存取控制之網路服務管理系統及其方法	中華民國	I426765	陳英一	國立臺北科技大學	2014/02 至	99-2622 -E-027- 001-CC1

(d) 技術移轉

技術名稱	專利名稱	授權單位	被授權單位	簽約日期	計畫編號
資料保護與權限稽核系統及資料保護與權限稽核方法	資料保護與權限稽核系統及資料保護與權限稽核方法	國立臺北科技大學	偉康科技股份有限公司	2010/03 至 2011/12	97 - 2622 - E - 027 - 018 - CC1
具有可調整流程功能之軟體部署系統	具有可調整流程功能之軟體部署系統	國立臺北科技大學	偉康科技股份有限公司	2011/01 至 2011/12	98 - 2622 - E - 027 - 002 - CC1
無線網路使用者管理系統及無線網路管理系統	1. 無線網路使用者管理系統 2. 無線網路管理系統	國立臺北科技大學	寬廣科技股份有限公司	2011/01 至 2012/01	- - - - -
具備無線操作功能的數位內容應用系統	具備無線操作功能的數位內容應用系統	國立臺北科技大學	縈紘科技	2011/01 至 2012/12	- - - - -
資料庫資料轉移系統	資料庫資料轉移系統	國立臺北科技大學	偉康科技股份有限公司	2008/07 至 2011/07	- - - - -
資料保護與權限稽核系統及資料保護與權限稽核方法	資料保護與權限稽核系統及資料保護與權限稽核方法	國立臺北科技大學	偉康科技股份有限公司	2010/05 至 2010/12	97 - 2622 - E - 027 - 018 - CC1
具有可調整流程功能之軟體部屬系統	具有可調整流程功能之軟體部屬系統	國立臺北科技大學	偉康科技股份有限公司	2011/01 至 2012/12	98 - 2622 - E - 027 - 002 - CC1

2. 其他表現

陳英一教授自 1992 年起連續 23 年在「國科會資訊學門」執行國科會專題計畫，另有來自「教育部產學合作」計畫、「經濟部技術處學界科專」計畫及民間企業(產業界委託研究計畫)等多個項目的研究經費支持，近七年共計獲得研究經費一仟七百餘萬元。近五年研究成果包含 6 篇 SCI 期刊論文、6 篇國際會議論文。它們分別探討「軟體工程」、「網際服務」、「資訊安全」、「分散式計算」、「數位家庭」與「軟體可靠度」等領域最前沿的研究主題。同時，研究成果也獲得 13 項中華民國發明專利，其中有 4 項專利進行技術移轉，另外尚有 8 項專利審查中，研究成果良好。

柯開維教授
實驗(研究)室名稱：寬頻與無線網路實驗室
聯絡電話：02-27712171-4233
e-mail：kwk@csie.ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~kwke/
研究聚焦領域：□ H：健康科技　　■ I：智慧整合科技
□ G：綠色科技　　□ H：人文與創新元素
專長：1.計算機網路　2.網際網路協定與應用　3. RFID定位追蹤　4.網際網路電信監察
5.網管與無線網路技術應用

1.近三年重要論文及著述

(a)期刊論文

1. Kai-Wei Ke, Ho-Ting Wu, D. Jayasakthi, Shiao-Ting Huang (2013, Dec). Adaptive Admission Control with Bandwidth Quantization and Dynamic Reallocation for Mobile WiMAX. International Journal of Future Computer and Communication, 2(6), 623-627. (Google Scholar).
2. Tzung-Yu Wu, Ho-Ting Wu, Kai-Wei Ke (2013, Dec). The Design of a NPVR System for a IPTV Platform. International Journal of Electronics and Electrical Engineering, 1(3), 140-144.
3. Kai-Wei Ke, Chia-Hui Huang (2013, Jun). Performance evaluation of multisource Application Layer Multicast (ALM): Theoretical and simulative aspects. Computer Networks, 57(6), 1408-1424.
4. Chen-Nien Tsai, Kai-Wei Ke and Ho-Ting Wu (2012, Feb). Approximate Packet Delay Analysis for IEEE 802.16 Networks. Advanced Materials Research: Material Science and Information Technology (EI). , Vols. 433-440 (2012) pp.5063-5067.
5. Lei Yan, Ho Ting Wu, Kai Wei Ke (2012, Feb). The Design of the Power Saving Mechanisms for IEEE 802.16e Networks. Advanced Materials Research: Material Science and Information Technology (EI). , Vols. 433-440, pp.5068-5072.
6. Chia-Hui Huang, Kai-Wei Ke*, Ho-Ting Wu (2011, Sep). Performance of Multisource Application Layer Multicast Routing: A Cost-Based Approach. Advanced Materials Research: Material and Manufacturing Technology II (EI), Vols. 341-342, pp. 617-622.
7. Kai-Wei Ke*, Chen-Nien Tsai, Ho-Ting Wu (2010, Jul). Performance analysis for hierarchical resource allocation in multiplexed mobile packet data networks. Computer Networks (SCI, EI), Volume 54, Issue 10, pp. 1707-1725.
8. H.-T. Wu, Kai-Wei Ke, P. Hung (2010, Feb). Designs of High-Performance Multicast Scheduling Mechanisms in WDM Networks. Photonic Network Communications (SCI, EI), Volume 19, Number 2, pp. 121-133.

(b)研討會論文

1. Kai-Wei Ke, Ho-Ting Wu, Yi-Lei Chang, and Yu-Fu Huang (2014, Nov). Lawful Internet Interception and Information Recovery with Packet-Flow Inspection. 2014年數位鑑識與科技偵查研討會, Taipei, Taiwan. NSC 102-2218-E-027-004.
2. Kuan-Ting Chen, Kai-Wei Ke*, Jenq-Haur Wang, Ya-Ting Chang, Cheng-Yu Jiang, and Di-Yin Liang (2014, Nov). An intelligent parking management system with vacancy positioning and license plate recognition. Forth International Symposium on Technology for Sustainability (ISTS 2014), Taipei, Taiwan.
3. H.-T. Wu, C.-W. Tuan, and K.-W. Ke (2014, Aug). Mathematical Modeling and Queueiing Analysis of an Optical Packet Switch. Third International Eurasian Conference on Mathematical Sciences and Applications, Vienna, Austria. NSC102-2218-E-027-004.

4. Chia-Hui Huang, Kai-Wei Ke*, and Ho-Ting Wu (2012, Sep). The Design of Multisource Application Layer Multicast with Fast Route Recovery . 9th IEEE International Conference on Ubiquitous Intelligence and Computing (IEEE UIC 2012) , Fukan, Japan.
5. Chia-Hui Huang, Chun-Ting Wu, Kai-Wei Ke, Ho-Ting Wu (2010, Dec). MAODV-Based Multisource Multicast Routing with Route Recovery Scheme in MANETs. International Computer Symposium (ICS 2010) (EI).
6. Chia-Hui Huang, Kai-Wei Ke, and Ho-Ting Wu (2009, Nov). An Application Layer Multi-source Multicast with Proactive Route Maintenance. Proceeding of IEEE TENCON 2009 (EI), Singapore, Nov. 23-26, 2009.. NSC 97-NSC-E-2213-027-026.
7. Dedi Rahmawan Putra, Kai-Wei Ke*, and Ho-Ting Wu (2009, Nov). On Designing a Customizable Network Management Station for WiMAX Network. Proceeding of IEEE TENCON 2009 (EI).
8. Ho-Ting Wu*, Chia-Wei Tuan, and Kai-Wei Ke (2009, Nov). The Design and Analysis of a Scalable Optical Packet Switching Architecture. Proceeding of IEEE TENCON 2009 (EI).
9. Dedi Putra*, Kai-Wei Ke, and Ho-Ting Wu (2009,Jun). Self-Similar Traffic Assessment on QoS Service Classes of WiMAX Network. The 5th International workshop on Wireless Network Measurements (WINMee 2009).
10. H.-T. Wu, Kai-Wei Ke, and C.-F. Yang (2009, Jun). The Design of QoS Provisioning Mechanisms for Mobile WiMAX Networks. 2009 International Conference on New Trends in Information and Service Science (NISS 2009), Beijing, China.
11. 吳立偉,柯開維,吳和庭,曾訓華,吳進益（2014年11月）。Android 手持裝置之輻射偵測系統。National Symposium on Telecommunications (NST
12. 2014)，TaiChung, Taiwan。
13. 錢世傑,劉健平,吳和庭,柯開維（2014年11月）。乙太被動式光纖網路多模式節能機制之設計與比較。2014 民生電子研討會 (WCE 2014)，台灣台中市。科技部：103-2221-E-027-060。
14. 周韶芬,吳和庭,柯開維,楊士萱,唐偉倫（2013年11月）。支援可適性編碼之內容傳遞網路的的設計。2013 全國電信研討會(NST 2013)，Tannan, Taiwan。國科會：102-2219-E-027-003。
15. 廖梓彤、柯開維*、吳和庭、蔡文能（2013年11月）。具快速恢復特性之多源應用層群播影音串流系統之研製。2013 全國電信研討會(NST 2013)，Tainan, Taiwan。國科會：102-2219-E-027-003。
16. 張以磊、柯開維*、吳和庭（2013年11月）。分散式網路事件分析紀錄系統之研製。2013 全國電信研討會(NST 2013)，Tainan, Taiwan。國科會：102-2218-E-027-004。
17. 蔡文能、柯開維*、吳和庭、廖梓彤（2013年11月）。以對等式網路傳輸技術為基礎之即時多媒體串流系統。2013 全國電信研討會(NST 2013)，Tainan, Taiwan。國科會：102-2219-E-027-003。
18. Yu-Min Lin、Kai-Wei Ke、Ho-Ting Wu、and Wen-Nen Tsai （2012年11月）。基於雲端運算之網路通訊監察分析系統之研製。2012 National Symposium Telecommunications (NST 2012)，彰化，台灣。國科會：100-NSC-E-2218-027-005。
19. 巫宗育、吳和庭*、柯開維（2012年11月）。遠端影音預錄之跨平台網路電視系統的實現。National Telecommunications Symposium (NST) 2012，Tannan, Taiwan。國科會：101-2219-E-027-003。

(c)作品

專案名稱/軟體/自由軟體社群平台	專案名稱/軟體/自由軟體社群平台

Wimaxsim*/WiMAX-Agent-3.0-bin-Fedora8. zip 整合型計畫/SourceForge、Openfundry(OSSF)	Lawfulintercept Umili.rar/ (具雲端可擴充性之網際網路通信監察系統)/OSSF
Daioaipcfqs0270/Intelligent Packet Classifier.rar (支援 QoS 運作之智慧型封包分類器)/ OSSF	Snmpnmss/HNMS.rar (跨平台之泛用型異質通訊網路監管系統)/OSSF

2. 其他表現

◆ 近五年內最具代表性之學理創新或應用技術突破。

(1)寬頻有線/無線/行動分封數據網路交通模式量測與效能：藉由實際量測交通流量與建模，分別探討在超高速乙太網路、IEEE 802.11 無線區域網路、以及 IEEE 802.16 WiMAX 系統所提供之分封數據網路是否存在「自我相似性」交通模型，以及其對通訊網路運作與系統效能的影響評估。

(2)行動數據網路多重服務連結資源動態最佳化分配：提出量化頻寬 (bandwidth quantization)概念，建立新通話及遞交通話允入控制之 MDP 數學模型，探討頻寬配置策略與驗證系統資源使用效能，設計一套適用於 WCDMA 無線通訊系統之動態資源管理與允入控制法則，有效率及動態地管理配置無線資源，以達網路品質與頻譜效率即容量的最佳化。

(3)階層式 GPRS 無線行動分封數據服務網路傳輸資源分配策略：設計與分析適用於 GPRS 行動分封數據通訊網路之下行鏈路階層式動態資源管理與允入控制法則，兼顧實際傳輸基礎單元的時槽(time slots)與無線區塊（radio block）配置，使其更能符合實際 GPRS 多工處理與頻寬共享特性、支援多種頻寬需求之手機的資源管理方案。

(4)WiMAX 系統之收斂及安全子層之設計：探討協定規格書與實作「固定式 WiMAX（IEEE802.16-2004）」與「移動式 WiMAX (IEEE 802.16e-2005) 」之安全子層(security sublayer)與收斂子層(convergence sublayer)，以及和共通子層(CPS) QoS 機制之整合運作，完成 WiMAX MAC 之完整功能。主要完成之項目有：X.509 憑證交換、Pre-PAK、AK、MSK 產生；金鑰交換與管理之 KEK、TEK 及 PKM v1/v2 機制；簽章之 HMAC-SHA1、HMAC-RSA；加/解密演算法如 3DES、AES-ECB、RSA-1024、AES-ECB、DES-CBC、AES-CCM、AES-CBC 等之程式碼。

(5)主動式 RFID 室內無線定位與追蹤技術：採用虛擬參考點方式降低佈建成本，同時在定位速度與準度提昇下，進而可做固定或行動中之物體定位或追蹤。首創「三維定位參考點」(3D)與「區域邊際多重參考點配置機制」，使平均定位誤差降至 0.6 公尺以內，增加定位準確度和實用性。

◆ **近五年**協助**產業發展績效**：

(1) 德鴻科技(Grandsys)： H.323-based IP phone Recording System

建構以 Avaya 之 soft switch 與 IP Phone 為標的，基於 H-323 協定之網路電話語音視訊監控與錄音系統，本計畫為一年期，已於 2009/08/12 結案驗收。開發完成後之技術已移轉德鴻科技公司

(2) 鴻祺航太：多重來源數據資訊傳輸匯集網路應用與效率之提升

探討如何提昇「模擬數據資訊經網路傳輸即時性效率」以及建置「多重來源數據資訊網路傳輸環境」。衍生成果：晉用研發人力 1 人，協助爭取 2 件訂單 (金額：350 萬元)，產值單價提昇 35 萬元。

(3)Android 手機核能輻射量感測 APP 之測試與驗證

(4)手機 APP 之伺服器接收/顯示/儲存功能程式開發

(5)麥克風輻射偵測 APP 測試與驗證

(6)智慧型行動裝置之麥克風輻射偵測實用性調查分析

A.上述(3)~(6)項合作單位皆為原能會核能研究所核能儀器組。

B.衍生效益：以實驗室團隊之網通專業、相關計畫執行之經驗與軟體研發能力進行之產學合作。協助該單位申請行政院國家科學技術發展基金管理會補助計畫，規模約 350 萬元。

(7)財團法人工業技術研究院：異質網路圖形介面模擬器

衍生效益：(1) PLC 通道與雜訊建模以及 G3-PLC 電力線通訊標準 PHY 及 MAC 原生函數與功能模擬；(2)LOAD 路由模組建構與 G3-PLC 節點之互通運作；(3) NCTUNS 模擬平台建置與各種情境模擬實作範例及效能評測。此系統可協助該院在服務廠商建置 PLC 環境時做佈署之效能分析，以建構較佳之網路環境。

陳偉凱教授

實驗 (研究) 室名稱：軟體開發與測試實驗室

聯絡電話：02-27712171-4230

e-mail：wkc@csie.ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~wkchen/

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. 軟體工程 2. 軟體測試 3. 網路技術與應用 4._____

3. 近年重要論文及著述

(a) 期刊論文

1. Woei-Kae Chen and Pin-Ying Tu, "VisualTPL: A Visual Dataflow Language for Report Data Transformation," Journal of Visual Languages and Computing, Volume 25, Issue 3, June 2014, Pages 210–226. NSC 99-2220-E-027-005 and MOEA 100-EC-17-A-02-S1-135. (SCI)
2. Shingchern D. You, Wei-Hwa Chen, Woei-Kae Chen, "Music Identification System Using MPEG-7 Audio Signature," The Scientific World Journal, vol. 2013, Article ID 752464, 11 pages, January 2013. (SCIE).
3. Woei-Kae Chen and Pin-Ying Tu, "A Report Generator for Database and Web Applications," IEICE Transactions on Information and Systems, Vol. E95-D, No. 9, pp. 2265-2276, Sep. 2012. NSC 99-2220-E-027-005 and MOEA 100-EC-17-A-02-S1-135. (EI, SCIE)
4. Shingchern D. You and Woei-Kae Chen, "Optimally Truncating Head-related Impulse Response by Dynamic programming with its Applications," Multimedia Tools and Applications, 2012. (EI, SCIE)

(b)研討會論文

1. Woei-Kae Chen, Bing-Hung Chen, and Po-Lin Chen, "A Dynamic Programming Algorithm for the optimization of Nested HTML formatting Structure," 2014 International Conference on Engineering and Applied Science (ICEAS 2014), July 2014. NSC 102-2218-E-027-006
2. Shingchern D. You, Wei-Hwa Chen, and Woei-Kae Chen, Music Identification System Using MPEG-7 Audio Signature Descriptors, 2013 International Conference on e-Commerce, e-Administration, e-Society, e-Education, and e-Technology (e-CASE & e-Tech 2013), 2013. NSC 99-2221-E-027-097 and MOEA 100-EC-17-A-02-S1-135.
3. Woei-Kae Chen and Jung-Chi Wang, "Bad Smells and Refactoring Methods for GUI Test Scripts," 13th ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2012), pp.289-294, 2012. NSC 99-2220-E-027-005 and MOEA 100-EC-17-A-02-S1-135. (IEEE Xplore)
4. Woei-Kae Chen and Pin-Ying Tu, "Grading code quality of programming assignments based on bad smells," 2011 24th IEEE-CS Conference on Software Engineering Education and Training (CSEE&T), pp. 559, 2011. NSC 99-2220-E-027-005 and MOEA 99-EC-17-A-02-S1-135. (IEEE Xplore, EI)
5. Woei-Kae Chen, Zheng-Wen Shen, and Sheng-Kai Wen, "GUI Test-Case Generation with Macro-Event Contracts," International Conference on Software Engineering and Data Mining (SEDM 2010), pp. 145-151, 2010. NSC 97-2218-E-027-006; NSC 98-2220-E-027-005. (IEEE Xplore, EI)

(c)技術移轉

年度	單位	技術名稱	金額
102	記趣科技股份有限公司	Android 雲端測試服務	10 萬元
101	記趣科技股份有限公司	Scrum 軟體開發流程	10 萬元

4. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(a) 最具代表性之學理創新或應用技術突破

1. **GUI 測試技術**
   (a) 我們在 Java 環境下，研發出工業界最需要的錄影與撥放(capture/replay)技術，設計出一個具有錄影與撥放功能的 GUI 測試工具，稱為 GTT，其錄影與撥放的功能與目前 Java 環境中最有名的錄影與撥放工具 Abbot 相當。GTT 並獲選為國科會自由軟體推動計畫之績優團隊獎。
   (b) 我們提出一個事件模型(event model)，用以整合 GUI 測試規格與錄影撥放技術，讓測試者在待測程式尚未開發完成前，就能使用 GUI 測試規格語言開發測試案例，若配合 XP (eXtreme Programming)開發模式，就能進行 GUI 測試驅動(Test-driven Development)的開發。一般 GUI 測試被認為是無法進行測試驅動開發的，我們的技術打破這個限制，使我們的工具在功能上領先其他的工具軟體。
   (c) 我們提出 Component Abstraction 的觀念，以巨集元件與巨集事件作為單位，制定 GUI 測試規格語言(GUI Test Specification Language)，這個觀念突破傳統測試腳本(test script)以一般程式語言為基礎的做法，提供更便利的 GUI 測試規格的模型化(modeling)方式與 GUI 測試規格的撰寫。
   (d) 上述 GUI 測試技術已經發表 **4 篇國際會議論文**(ANIA 2005, SSIRI 2008, SEDM 2010, SNPD 2012)及 **1 篇國際期刊**(JISE 2008)。另有 **1 篇國際期刊論文正在審查中**。

2. **資料庫報表產生技術**
   (a) 我們提出一套表格運算，針對報表製作的資料轉換(data transformation)過程進行抽象化的工作，我們建立基本運算與衍生運算的觀念，並實作出一套視覺化的操作系統(TPS)作為報表產生的一環。這些成果可以應用在資料庫的報表產生，也可以應用在製作包含資料庫內容的動態網頁。
   (b) 針對巢狀式表格(nested tables)結構的呈現，我們以表格運算為基礎，提出一套樹狀報表結構的模型，並定義出一系列節點，用以描述報表的架構，以產生巢狀式表格的呈現形式。
   (c) 對於巢狀式表格的格式化(formatting)方式，我們提出一套巢狀式表格的格式化規則，以及其視覺化的操作方式，至此 TPS 成為一個完整的報表開發系統。TPS 將資料庫查詢、表格的數學運算與視覺化的程式設計(visual programming)成功地整合成一個系統，並能廣泛地應用在資料庫報表或動態資料庫網頁的開發。

(d) 本研究不但具有學術性，更有商業價值。上述資料庫報表產生技術已經發表**4 篇國際會議論文**(ICS 2002, EEE 2004, ICICS 2005, CSA 2008)、**2 篇國際期刊論文**(IEICE, JVLC)。

(b)協助產業發展績效

1. 手機多人對戰遊戲研發(第一期)，傅元志，2013/9/-2013/10/31 ($170,200)
2. Android 雲端測試服務，2013/5-2013/5，記趣科技股份有限公司 ($100,000)
3. 以 Scrum 流程為基礎之 Android 數位內容應用開發(數位內容產業發展躍進計畫-人才培訓委外計畫)，經濟部工業局，2012/2/1-2012/12/31 ($150,000)
4. Scrum 軟體開發流程技轉，2012/5-2013/4，記趣科技股份有限公司 ($100,000)
5. 雲端儲存伺服器評估，金緻網路資訊服務，2011/11-2013/02 ($214,000)
6. Scrum 軟體流程與最佳實務導入方案先期技轉，2010/1-2010/11，智新資通 ($100,000)
7. 手機遊戲之開發與移植，其富國際，2010/5-2010/9 ($300,000)
   本計劃協助廠商移植日本的 J2ME 手機遊戲至台灣的 J2ME 手機，解決平台不相容、音效，以及按鍵的問題。移植已順利完成。
8. 導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之三年計畫(第一、二、三年度)之子計畫：軟體測試技術導入研究，經濟部科專計畫，2009/12-2012/11

(c)人才培育、研究團隊建立及服務方面的重要貢獻及成就

年度	類別	說明
2013	獲獎	指導記趣科技參加**「2013 TiC Taiwan Award - 創新事業智慧獎」獲冠軍。**
2012	獲獎	**2012 台灣軟體工程研討會最佳論文獎**(An Instructional Design that Improves Students' Source Code Quality by Reducing Bad Smells)
2012	獲獎	獲**國科會「自由軟體暨嵌入式系統計劃」績優團隊計畫**(執行「99 年度國科會自由軟體暨嵌入式系統計劃」，計畫名稱「子計畫四：DVB-H 傳輸串流解碼軟體之開發(2/2))。
2011	獲獎	指導學生參加**遠傳 S 市集「2011 app 星光大賞」獲年度最佳遊戲獎、年度最佳創意獎及校園新秀特別獎(獎金：53 萬元)**。
2011	獲獎	指導學生參加經濟部工業局主辦之**「2011 App Star 高手爭霸戰」獲學生組冠軍(獎金：50 萬元)**。
2011	獲獎	獲**國科會**「自由軟體暨嵌入式系統計劃」**群體計劃績優團隊獎**(子計畫主持人：陳偉凱)。
2011	獲獎	獲本校**電資學院 99 年度「傑出服務獎」**

2010	獲獎	指導學生參加 **2010 開放原始碼創新應用大賽，獲學生組優等獎(第三名)**，作品：Android DVB-H player (本人學生負責傳輸串流之解碼)。
2010	獲獎	指導學生參加**國際會議 ACE 2010** (International Conference on Advances in Computer Entertainment Technology)之 Game Competition 獲 **Merit Award**
2010	獲獎	獲**國科會**「自由軟體暨嵌入式系統計劃」**群體計劃績優團隊獎**(主持人：陳偉凱)。
2010	獲獎	獲 2010 年**台灣物件導向技術及應用暨軟體工程研討會最佳論文獎**(「An Interaction Coverage Analysis Tool for GUI Test Cases」)。
2010	獲獎	獲本校**電資學院教學優良獎**
2012-2013	服務	**小型企業創新研發計畫(SBIR)資通領域審查委員**
2012	服務	**國家考試命題委員**(101 年特種考試交通事業鐵路人員考試)
2010	服務	參與行政院研考會「**政府應用自由軟體共通需求規範**」之制定

謝金雲副教授

實驗 (研究) 室名稱：軟體系統實驗室 Software Systems Lab

聯絡電話：(02)2771-2171*4231

e-mail：hsieh@csie.ntut.edu.tw

網址：http://pl.csie.ntut.edu.tw/php/hsieh%27s%20page/home.html

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. 軟體工程 2. 分散式系統 3. 物件導向設計 4. _____

5. 近年重要論文及著述

(a) 期刊論文

1. Chen, Chien-Tsun, Yu Chin Cheng, Chin-Yun Hsieh, and Tien-Song Hsu. "Delivering Specification-Based Learning Processes with Service-Oriented Architecture: A Process Translation Approach." J. Inf. Sci. Eng. 25, no. 5 (2009): 1373–89.
2. Chien-Tsun Chen, Yu Chin Cheng, Chin-Yun Hsieh, and Tien-Song Hsu. "JCIS: An Open Source System for Continuous Integration with Java Technology." Journal of Software Engineering Studies 4, no. 1 (June 2009): 56–65.
3. Chen, Chien-Tsun, Yu Chin Cheng, Chin-Yun Hsieh, and I.-Lang Wu. "Exception Handling Refactorings: Directed by Goals and Driven by Bug Fixing." Journal of Systems and Software 82, no. 2 (2009): 333–45.
4. Chien-Tsun, Chen, Yu Chin Cheng, and Chin-Yun Hsieh. "Contract Specification in Java: Classification, Characterization, and a New Marker Method." IEICE Transactions on Information and Systems 91, no. 11 (2008): 2685–92.

(b)研討會論文

1. 劉展君, 鄭有進, and 謝金雲. "基於 Robot Framework 的平行處理測試函式庫：以手機測試為例." 南投, 2014.
2. 張學斌, 鄭有進, and 謝金雲. "一個改善 Android 行動裝置 GUI 自動化測試效率與穩定性的輔助工具." 南投, 2014.
3. 林軒平, 李家政, 鄭有進, 周忠信, and 謝金雲. "基於 Pseudo Software 需求模型自動產生 Robot Framework 驗收測試案例之研究." 南投, 2014.
4. 林佑明, 鄭有進, and 謝金雲. "一個基於 Robot Framework 的 Android 自動化測試函數庫." 南投, 2014.
5. Hsieh, Chin-Yun, Chen-Hsin Tsai, and Yu Chin Cheng. "Test-Duo: A Framework for Generating and Executing Automated Acceptance Tests from Use Cases." In Proceedings of the 8th International Workshop on Automation of Software Test, 89–92. IEEE Press, 2013. http://dl.acm.org/citation.cfm?id=2662433.
6. 謝慕憶, 謝金雲, and 鄭有進. "以雲端平台特性為目標將 Web 應用程式遷移至雲端之重構方法： 以 ezScrum 為例." 高雄, 2013.
7. 楊勝雄, 鄭有進, 謝金雲, and 周忠信. "基於 PS4Mobile 的跨平台行動應用程式驗收測試方法與工具." 高雄, 2013.
8. 陳膺仁, 謝金雲, and 鄭有進. "使用 AOP 技術將 Web 應用程式遷移至雲端之方法：以 ezScrum 為例." 高雄, 2013.

9. 謝清帆, 謝金雲, 王熙鈞, and 陳建村. “利用插件框架改善現有軟體品質與功能 -以 ezScrum 為例.” 臺北科技大學, 2012.
10. 曾得宇, 謝金雲, 陳建村, and 王熙鈞. “一個基於 ezScrum 插件框架的工作完成準則輔助工具.” 臺北科技大學, 2012.
11. 吳承濠, 謝金雲, and 陳建村. “應用強健度故事檢驗雲端軟體之研究：以 Dropbox 為例.” 臺北科技大學, 2012.
12. Hsieh, Chin-Yun, Yu Chin Cheng, and Chien-Tsun Chen. “Emerging Patterns of Continuous Integration for Cross-Platform Software Development.” In Proceedings of the 2nd Asian Conference on Pattern Languages of Programs, 9. ACM, 2011. http://dl.acm.org/citation.cfm?id=2524639.
13. 蕭登益, 謝金雲, and 陳建村. “應用敏捷式例外處理方法與工具提升既有系統強健度—以 SyncFree 為例.” 輔仁大學, 2011.
14. 吳燾佑, 歐伯浩, 鄭有進, and 謝金雲. “一個與 ezScrum 整合之程式碼檢閱 工具.” 輔仁大學, 2011.
15. 王熙鈞, 謝金雲, 鄭有進, and 陳建村. “跨平台軟體持續整合樣式之已知案例探討.” 輔仁大學, 2011.

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

6. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

研發與產學合作計畫

計畫名稱	計畫執行起始日期	計畫執行結束日期	計畫內工作類別	研究總金額	委託單位
整合式雲端測試：平台與服務之開發－總計畫暨子計畫一：Android App 伺服器效能測試服務之開發 (III)	2014/8/1	2015/7/31	共同主持人	1543000	科技部
整合式雲端測試：平台與服務之開發－子計畫三:持續整合與測試環境虛擬化之開發(III)	2014/8/1	2015/7/31	主持人	644000	科技部
自由軟體ezScrum的開發與維	2014/8/1	2015/7/31	共同主	1265000	科技部

護以及 Scrum 訓練服務			持人		
Scrum 軟體開發流程	2014/7/1	2015/6/30	計畫主持人	100000	泰迪軟體科技有限公司
智慧電子學院計畫 - 北科大軟體中心短期在職訓練班	2014/3/5	2014/12/15	計畫主持人	230000	財團法人資訊工業策進會
Scrum 軟體開發流程導入實施方法	2013/7/1	2014/6/30	計畫主持人	130000	泰迪軟體有限科技公司
Android 測試案例自動化	2013/7/1	2014/6/30	計畫主持人	1490400	因簽署保密條款,不便公開機構名稱
Scrum 框架中的軟體測試自動化技術實施方法	2012/11/13	2013/11/12	計畫主持人	120000	泰迪軟體有限公司
支援跨平台軟體開發之持續整合樣式與樣式語言	2012/8/1	2013/7/31	主持人	719000	科技部
ezScrum 軟體技術	2012/6/26	2013/6/25	計畫主持人	100000	泰迪軟體有限公司
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之三年計畫-子計畫二	2011/12/1	2012/11/30	主持人	432000	經濟部
支援跨平台軟體開發之持續整合樣式與樣式語言	2011/8/1	2012/7/31	主持人	650000	科技部
跨平台軟體開發技術導入	2011/6/1	2012/8/31	主持人	805000	美超微電腦股份有限公司
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之三年計畫-子計畫二	2010/12/1	2011/11/30	主持人	432000	經濟部
支援跨平台軟體開發之持續整合樣式與樣式語言	2010/8/1	2011/7/31	主持人	719000	科技部
跨平台軟體開發技術評估	2010/6/1	2011/5/31	主持人	524000	美超微電腦股份有限公司
導入 Scrum 軟體流程與最佳實務於 ICT/CE 產品研發之三年計畫-子計畫二	2009/12/1	2010/11/30	主持人	432000	經濟部
敏捷式例外處理	2009/8/1	2010/7/31	主持人	653000	科技部

獎項與榮譽

- 2014 台灣軟體工程研討會議程主席(2014/6)
- 2012 台灣軟體工程研討會 publicity chair (2012/7)
- 2009 台灣軟體工程研討會議程委員(2009/6)
- Publicity chair and program committee, AsianPLoP 2014, Tokyo, Japan,
- Program committee, AsianPLoP 2015, Tokyo, Japan,
- 所指導學生獲得 TCSE 2013 最佳論文
  1. 謝慕憶、謝金雲、鄭有進，"以雲端平台特性為目標將 Web 應用程式遷移至雲端之重構方法： 以 ezScrum 為例"，2013 台灣軟體工程研討會，7 月 5、6 日，高雄
- 所指導學生獲得 TCSE 2012 最佳論文
  1. 吳承濠、謝金雲、陳建村，"應用強健度故事檢驗雲端軟體之研究：以 Dropbox 為例"，2012 台灣軟體工程研討會，7 月 6、7 日，臺北

尤信程副教授
實驗 (研究) 室名稱：音訊訊號處理實驗室
聯絡電話：02-27712171-4234
e-mail：scyou@ntut.edu.tw
網址：http://csie.ntut.edu.tw/labaspl/

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長：1.音訊處理及識別 2. 多媒體傳輸技術 3. 訊號處理設計與實現

1. 近五年成果

(a)期刊論文

1. S. D. You (尤信程) (2014, Nov). Channel Estimation with Iterative DFT-Based Smoothing for OFDM Systems with Non-Uniformly Spaced Pilots in Channels with Long Delay Spread. IET Communications, 8(17), pp. 2984 – 2992. (SCI)
2. S. D. You (尤信程) and W-K Chen (2014, Jun). Optimally Truncating Head-Related Impulse Response by Dynamic Programming with its Applications. Multimedia Tools and Applications, 70(3), pp. 2167-2188. (SCI-E)
3. Y.-C. Yu, S. D. You (尤信程), D.-R. Tsai (2013, Nov). Smart door: A ubiquitous collaboration system for home activities in the smart home. Journal of Information Science and Engineering, 29(6), pp. 12227 - 1248. (SCI-E)
4. Y-S Liu1, S D. You (尤信程), R-K Wu (2013, Jun). Burst Allocation Method to Enable Decision-Directed Channel Estimation for Mobile WiMAX Downlink Transmission. EURASIP J. Wireless Commun. and Networking. (SCI-E)
5. S. D. You (尤信程), Wei-Hwa Chen, Woei-Kae Chen (2013, Feb). Music Identification System Using MPEG-7 Audio Signature Descriptors. The Scientific World Journal, 2013. (SCI-E)
6. S. D. You (尤信程), W-H Chen (2013). Comparative Study of Methods for Reducing Dimensionality of MPEG-7 Audio Signature Descriptors. Multimedia Tools and Applications. (SCI-E)
7. S. D. You (尤信程), K.-Y. Chen, Y.-S. Liu (2012, Sep). Cubic convolution interpolation function with variable coefficients and its application to channel estimation for IEEE 802.16 initial downlink. IET Communications, 6(13), 1979-1987. (SCI)
8. S. D. You (尤信程) and C-M Tsai (2012, May). Determining Start-Band Frequency for Spectral Band Replication Tool in MPEG-4 Advanced Audio Coding. Information - An international interdisciplinary journal, 15(5), 1839 - 1850. (SCI-E)
9. S. D. You (尤信程) and F-Y Cheng (2012, Apr). Spatial Localization Evaluation Model for Parametric Stereo Audio. Applied Mathematics and Information Sciences, 6(2S)397-402. (SCI-E)
10. Y.-C. Yu, S. D. You (尤信程), D.-R. Tsai (2012, Feb). Magic Mirror Table for Social-Emotion Alleviation in the Smart Home. IEEE Trans. Consumer Electronics, 58(1), 126-131. (SCI)
11. Y.-C. Yu, S. D. You (尤信程), D.-R. Tsai (2011, Jun). A video-based portal system for remote appliance control. International Journal of Space-Based and Situated Computing, 1(2/3), 122-129. (Scopus)

(b)研討會論文

1. S. D. You (尤信程) and Y-C Wu (2015, Jan). Comparative Study of Singing Voice Detection Methods. Lecture Notes in Electrical Engineering, 330, pp. 1291-1298.
2. S. D. You (尤信程), S-J Huang (2014, May), Implementation of LDPC Decoder for L1 Signaling

in DVB-T2 Transmission Frame. Proc. IEEE Int'l Conf. Consumer electronics, Taipei, Taiwan, pp. 55 – 56.

3. S. D. You (尤信程), S-J Huang (2014, Jan), Influences of Inaccurate Estimation of Noise Variance in Sum-Product Algorithm for DVB-T2 Receiver. Proc. IEEE Int'l Conf. Consumer electronics, Las Vegas, NV, USA, pp. 31 – 32.
4. S. D. You (尤信程) and Y-S Wang (2013, Jun). Comparative Study of Channel Estimation Methods in Simulated and Real Channels. Intenational Symposium on Consumer Electronics 2013, 新竹,台灣.
5. S. D. You (尤信程) and S-J Huang (2013, Jun). Is BCH Decoder Really Necessary in DVB-T2 Receiver. International Symposium on Consumer Electronics, 2013
6. S. D. You (尤信程), W-H Chen (2013, Feb). Comparative Study of Methods for Reducing Dimensionality of MPEG-7 Audio Signature Descriptors. The 2013 FTRA International Conference on Advanced IT, engineering and Management (FTRA AIM-13), Seoul, Korea.
7. Y-S Liu, R-K Wu, S. D. You (尤信程) (2012, Jul). Channel Estimation Methods for WiMAX DL Transmission. Asia Pacific Wireless Communications Symposium, Kyoto, Japan.
8. Y-C Yu, S D You (尤信程) (2012, Jan). Aspect-Oriented Weaving Framework for Learning Activity in the E-Learning Web System. International Conference on Emerging Computation and Information Technologies for Education (Published in Advances in Intelligent and Soft Computing, by Springer Verlag), Hangzhou, China.
9. Y-C Yu, S D You (尤信程), D-R Tsai (2012, Jan). Magic Mirror Table with Social-Emotion Awareness for the Smart Home. International Conference on Consumer Electronics , Las Veggas, NV, USA.
10. Y-C Yu, S D You (尤信程), D-R Tsai (2012, Jan). Social Interaction Feedback System for the Smart Classroom. International Conference on Consumer Electronics, Las Vegas, NV, USA.
11. S. D. You (尤信程) and C.-M. Tsai (2011, Oct). On the Determination of Start Band Frequency of Spectral Band Replication in MPEG-4 High Efficiency Advanced Audio Coding. International Conference on Computer Convergence Technology, Seoul, Korea.
12. Y.-C. Yu, S. D. You (尤信程), D.-R. Tsai (2011, Jun). Hill climbing algorithm for license plate recognition. International Conference on Materials Engineering for Advanced Technologies (published in Advanced Materials Research), Singapore, Singapore.
13. Y-C Yu, S D You (尤信程), D-R Tsai (2011, Jan). Smart door portal. International Conference on Consumer Electronics, Las Vegas, NV, USA.

(c)專利

(d)技術移轉

序號	技術名稱	委託單位	技轉期間	技轉金額	備註
1	協助開發網路電話(四)	香港商優比快科技有限公司	2015.2.16 | 2016.2.15	120,000	依學校規定，計劃中須提列先期技轉金
2	協助開發網路電話(三)	香港商優比快科技有限公司	2014.2.16 | 2015.2.15	120,000	同上
3	協助開發網路電話(二)	香港商優比快科技有限公司	2013.2.16 | 2014.2.15	120,000	同上
4	協助開發網路電話	香港商優比	2012.10.16	30,000	同上

		快科技有限公司	| 2013.1.15		

(e)專書及專章
(f)作品

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

1. 2011 International Conference on Computer Convergence Technology (ICCCT), session chair, 2011/11
2. 7th International Conference on Embedded and Multimedia Computing (EMC-12), Program Committee, 2012/1
3. 7th International Conference on Ubiquitous Information Technologies & Applications (CUTE 2012), Workshop Co-chair, 2012/2
4. The 3rd International Workshop on Ubiquitous Computing & Applications (IWUCA 2012), Co-Chair, 2012/8
5. Smart IT 2012, Program Committee, 2012/7
6. 2013 International Symposium on Consumer Electronics (ISCE), Program Committee, 2012/12
7. 8th International Conference on Ubiquitous Information Technologies & Applications (CUTE 2013), Workshop Co-chair, 2012/12
8. 8th International Conference on Embedded and Multimedia Computing (EMC-13), Program Committee, 2013/1
9. APWCS (Asia Pacific Wireless Communication Symposium) 2013, Program Committee, 2013/3
10. MUE (8th FTRA International Conference on Multimedia and Ubiquitous Engineering) 2014, Program Co-chair, 2013/4
11. 2nd IEEE/SAE/ACM/IFAC International Conference on Connected Vehicles & Expo (ICCVE 2013), Program Committee, 2013/10
12. The 2nd International Conference on Intelligent Information System and Technology, Publicity chair, 2013/10
13. International Conference on Consumer Electronics – Taiwan (ICCE-Taiwan), session chair, 2013/12

張厥煒副教授

實驗 (研究) 室名稱：多媒體資訊與技術整合實驗室

聯絡電話：02-27712171-4241

e-mail：cwchang@ntut.edu.tw

網址：http://csie.ntut.edu.tw/~labmit/cwchang/

研究聚焦領域：□ H：健康科技　■I：智慧整合科技

□ G：綠色科技　□ H：人文與創新元素

專長

1. 影像處理	2. 資訊管理系統	3. 影像/視訊檢索及搜尋	4. 圖形識別表

1. 近五年成果

(a)期刊論文

1. Chueh-Wei Chang, Shih-Yang Lee, Shih-Kuei Huang, Chin-Long Yang, An Integrated Computer Assisted Training System for the Baseball Defense Concepts and Cases, AASRI Procedia, Elsevier, 2014
2. Shio-Wen Chen, Yi-Hao Chung, Hsin-Fu Chien, Chueh-Wei Chang, A SURF Feature Based Building Recognition System for Distinctive Architectures, Information Technology Convergence - Lecture Notes in Electrical Engineering 253, Springer 2013
3. Chueh-Wei Chang, Yi-Po Wu, Hua-Wei Lin (2012, Jun). An Animation Assisted Training System for Baseball Cover and Cut-Off Play. Intl. Journal of Computer Science in Sports (IJCSS), Vol.11/Ed.2, pp. 41-51.
4. Chueh-Wei Chang, Chun-Hao Chang, Yi-Hao Chung (2011, Dec). A Two-Hand Multi-Point Gesture Recognition System Based on Adaptive Skin Color Model. Scientific Journal of Information Engineering, Vol.1, No.1, pp. 20-29.
5. Chueh-Wei Chang, Shio-Wen Chen, Hsin-Fu Chien (2011, Jun). A Banner Ads Searching and Counting System for Sports Videos. Communications in Information Science and Management Engineering (CISME), Vol.1, No.6, pp. 9-14.

(b)研討會論文

1. Chueh-Wei Chang, Shih-Yang Lee, Shih-Kuei Huang, Chin-Long Yang, “An Integrated Computer Assisted Training System for the Baseball Defense Concepts and Cases, ” 2014 AASRI Conference on Sports Engineering and Computer Science (2014 SECS), London United Kingdom, 2014.
2. Shio-Wen Chen, Yi-Hao Chung, Hsin-Fu Chien, Chueh-Wei Chang (2013, Jul). “A SURF Feature Based Building Recognition System for Distinctive Architectures. ” The 5th FTRA International onference on Information Technology Convergence and Services (2013 ITCS), Fukuoka Japan.
3. Chueh-Wei Chang, Yi-Hao Chung, Kuei-Kang Wu (2011, Dec). “A Motion Analysis System for the Baseball Pitching Using a Depth Sensor. ” 2011 Intl. Conf. on Physical Education and Society anagement (ICPESM 2011), Hong Kong.
4. Chueh-Wei Chang, Yi-Po Wu (2011, Dec). “The Design and Development of a Baseball Cut-Off Play Training System. ” 2011 Intl. Conf. on Physical Education and Society Management (ICPESM 2011), Hong Kong.
5. Chueh Wei Chang, Yu Hung Chang and Shio Wen Chen, “A Banner Ads Searching and Counting System for Sports Videos,” IEEE Intl. Conf. on Consumer Electronics, Communications and Networks (CECNet 2011), Vol.5, PP.3799-3802, Xianning China, 2011.
6. Chueh Wei Chang and Chun-Hao Chang, “A Two-Hand Multi-Point Gesture Recognition System Based on Adaptive Skin Color Model,” IEEE Intl. Conf. on Consumer Electronics, Communications and Networks (CECNet 2011), Vol.4, PP. 2901-2904, Xianning China, 2011.

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

1. NSC 99-2221-E-027-103- A Study on the Management Technologies of Baseball Competition Contents Digitalization and Sports Information Analysis, 棒球競賽內容數位化與運動資訊分析管理技術之研究
2. NSC 100-2221-E-027-111- A Study on the Management Technologies of Baseball Competition Contents Digitalization and Sports Information Analysis (II), 棒球競賽內容數位化與運動資訊分析管理技術之研究 (II)
3. NSC 101-2221-E-027 -133- A Study on the Management Technologies of Baseball Competition Contents Digitalization and Sports Information Analysis (III), 棒球競賽內容數位化與運動資訊分析管理技術之研究 (III)
4. NSC 102-2221-E-027 -098- A Study on the Construction of a Computer Assistant Baseball Sports Training Practice Platform, 電腦輔助棒球運動訓練教學平台建置之研究
5. 行政院教育部, 104 年補助資通訊軟體創新人才推升推廣計畫, 軟體創作成果加值研發(B類)計畫, 穿戴式視障者定向輔助視覺系統

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 2012 微軟潛能創意盃(Imagine Cup) 遊戲開發組- Phone 台灣區冠軍 (指導老師)
2. 2012 教育部 全國大專校院開放軟體創作競賽 智慧感知與互動多媒體-學生組 金牌 及微軟創意獎 (指導老師)
3. 2012 教育部 軟體創作達人暑期成長營 最佳團隊獎、台灣微軟特別獎、趨勢科技特別獎 (指導老師)
4. 2012 華碩 Xtion PRO 創意體感程式競賽 佳作獎 (指導老師)
5. 2013 微軟潛能創意盃(Imagine Cup) 世界公民組 (World Citizen) 台灣區亞軍 (指導老師)
6. 2013 台北科大電資學院 第七屆金手獎 第一名 (指導老師)
7. 2013 第六屆全國大專盃創業競賽 社會心關懷組 第一名 (指導老師)
8. 2013 第 18 屆全國大專校院資訊應用服務創新競賽 資訊技術應用組 第一名 (指導老師)
9. 2014 台北科大電資學院 第八屆 金手獎 第一名 (指導老師)
10. 2014 第七屆全國大專盃創業競賽 社會心關懷組 優選 (指導老師)

(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

1. 教育部 102 年「產學典範・實力扎根」發展典範科技大學試辦計畫成果展, 穿戴式 PrimeSight 視障體感輔具, 華山文化創意產業園區
2. 2013 新一代設計展, 「Pal 科技可魯」, 臺北世貿中心一館
3. 2014 創業小聚暨 AAMA 臺北搖籃計畫年會, 資訊軟體人才培育計畫, 科技可魯-穿戴式視覺輔具, 臺大醫院國際會議中心

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(1) 應用資訊技術建立多項棒球情蒐資料建置分析工具與棒球訓練教學系統

(2) 擔任中華棒球隊情蒐小組成員, 多次參與國際重大棒球賽事支援工作

郭忠義副教授

實驗 (研究) 室名稱：智慧型系統實驗室

聯絡電話：02-27712171-4237

e-mail：jykuo@ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~jykuo

研究聚焦領域：□ H：健康科技 ■ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1.軟體工程 2.智慧型代理人系統 3.雲端運算 4._____

7. 近年重要論文及著述

(a)期刊論文

(1) Jong Yih Kuo, and Fu Chu Huang. Code analyzer for an online course management system. Journal of Systems and Software vol. 83(12), pp.2478-2486, 2010.12 (SCI).
(2) Jong Yih Kuo, and Fu Chu Huang. A Hybird Approach for Multi-Agent Learning System. Intelligent Automation and Soft Computing, vol. 17(3), pp.385-399, 2011.9 (SCI).
(3) Hsiang-Fu Yu, Yao-Tien Wang, Jong Yih Kuo and Chu-Yi Chien, Efficient Periodic Broadcasting for Mobile Networks at Small Client Receiving Bandwidth and Buffering Space, Journal of Applied Mathematics, vol. 2013, 2013 (SCI).
(4) Jong Yih Kuo, Fu-Chu Huang, Shang-Pin Ma, and Yong Yi Fanjiang, Applying Hybrid Learning Approach to RoboCup's Strategy, Journal of Systems & Software, vol. 86(7), pp. 1933-1944, July 2013 (SCI).
(5) K. F.-R. Liu, Jong Yih Kuo, K. Yeh, C.-W. Chen, H.-H. Liang, Y.-H. Sun, Using fuzzy logic to generate conditional probabilities in Bayesian belief networks: a case study of ecological assessment, International Journal of Environmental Science and Technology, Dec. 2013 (SCI).
(6) Kevin Fong-Rey Liu, Ming-Jui Hung, Po-Chung Yeh, Jong-Yih Kuo. GIS-based Regionalization of LCA. Journal of Geoscience and Environment Protection 2(2): 1-8, 2014/04. http://www.scirp.org/journal/PaperInformation.aspx?PaperID=44940
(7) Jong Yih Kuo, Hsiang-Fu Yu, Kevin Fong-Rey Liu, and Fang-Wen Lee, Multiagent Cooperative Learning Strategies for Pursuit-Evasion Games, Mathematical Problems in Engineering, 2014 (SCI).
(8) Shang-Pin Ma, Chun-Ying Huang, Yong-Yi Fanjiang, and Jong-Yih Kuo. Configurable RESTful Service Mashup: A Process-Data- Widget Approach. Applied Mathematics & Information Sciences (AMIS), 9(2L):637-644, April 2015 (SCI).
(9) Jong Yih Kuo, Tai-Yu Lai, Yong-Yi Fanjiang, Fu- Chu Huang, Yi- Han Liao, A Behavior-Based Flame Detection Method for a Real-Time Video Surveillance System, Journal of the Chinese Institute of Engineers, 2015 (SCI).

(b)研討會論文

(1) Jong Yih Kuo, Hsuan-KueiI Cheng, Yong-Yi FanJiang and Shang-Pin Ma. June 2011. Multi-Agent Automatic Negotiation and Argumentation for Courses Scheduling. The 2011 IEEE International Conference on Fuzzy Systems, Taipei, Taiwan.
(2) Jong Yih Kuo, Yong-Yi Fanjiang, Shang-Pin Ma, Jia Lin Syu. July 2011. A hybrid approach to multi-agent pursuit-evasion game. The 2011 International Conference on Machine Learning and Cybernetics, GuangXi, China.

(3) Yang Syu, Yong-Yi Fanjiang, Jong Yih Kuo, and Shang-Pin Ma. July 2011. An automated workflow composition to semantic web services. The 2011 International Conference on Machine Learning and Cybernetics, GuangXi, China.
(4) Yang Syu, Yong-Yi Fanjiang, Jong-Yih Kuo and Shang-Pin Ma, March 2012, A genetic algorithm with prioritized objective functions for service composition, The 26th IEEE International Conference on Advanced Information Networking and Applications Workshops, pp. 932-937, Fukuoka, Japan.
(5) Tai Yu Lai, Jong Yih Kuo, Chien-Hung Liu, Yue Wei Wu, Yong-Yi Fanjiang, Shang-Pin Ma, June 2012, Intelligent Detection of Missing and Unattended Objects in Complex Scene of Surveillance Videos, IEEE Symposium on Computer, Consumer and Control, TaiChung, Taiwan.
(6) Yang Syu, Shang-Pin Ma, Jong-Yih Kuo, Yong-Yi FanJiang, June 2012, A Survey on Automated Service Composition Methods and Related Techniques, 2012 IEEE Ninth International Conference on Services Computing, pp. 290 - 297, Hawaii, USA.
(7) Jong Yih Kuo, Fu Chu Huang, Chien Hung, Liu Hong Zhan Yang, August 2012, The Study of Plagiarism Detection for Object-oriented Programming, The Sixth International Conference on Genetic and Evolutionary Computing, Kitakyushu, Japan.
(8) Tai Yu Lai, Jong Yih Kuo, Yong-Yi FanJiang, Shang-Pin Ma, Yi Han Liao, September 2012, Robust Little Flame Detection on Real-Time Video Surveillance System, the 3rd International Conference on Innovations in Bio-Inspired Computing and Applications, Kaohsiung, Taiwan.
(9) Jong Yih Kuo, Tai Yu Lai, Fu Chu Huang, Meng Ju Yang. Hand Gesture Recognition Using Standard Deviation of Color Block and Thinning, International Conference on Computational Intelligence, Modeling and Simulation, Seoul, Korea, 2013.
(10) Jong Yih Kuo, H. K. Cheng, C.H. Liu, and J. D. Lin, A probability based object segmentation for real-time indoor surveillance, International Conference on Computer Science and Systems Engineering, HongKong, 2014.
(11) Jong Yih Kuo, Chien-Hung Liu, and Fang-Wen Lee. Using Cognitive Behavioral Learning in Multi-Agent Pursuit-Evasion Game, 8th Asia International Conference on Mathematical Modeling and Computer Simulation, Taipei, Taiwan, 2014.

(e)專書及專章

(1) 郭忠義、薛念林、馬尚彬、黃為德，現代軟體工程，博碩出版社。

8. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(1) 2014 主持產學合作計畫，協助財團法人電子檢驗中心建置智慧行動裝置 APP 安全測試與驗證技術與服務網站。
(2) 2013 主持產學合作計畫，協助財團法人電子檢驗中心建置智慧行動裝置 APP 測試驗證實驗室並提升 WebAPP 測試技術。
(3) 2013 主持產學合作計畫，開發美麗科技廚房點餐系統，用餐顧客進入餐廳，使用 POS 系統點餐，系統傳送資料至工作台。廚房內的廚師透過備餐資料進行餐點烹煮。餐點完成後，平板上直接以觸控點選備餐完畢立即送至出菜口。出菜口之現控人員藉由觸控顯示幕得知訊息後將餐點送至顧客手上。
(4) 2012 主持產學合作計畫，開發威合公司工務管理系統，此系統為一網際網路服務程式，主要功能分成八大子系統分別為帳號及權限管理、系統管理、工單管理、排程表、物料管理、合約、作業報告、案件分析。
(5) 2011 主持產學合作計畫，開發宏碁電腦公司「智慧型資料庫安全規則系統」，成效卓著。

(6) 協助舉辦 2012, 2014 台灣軟體工程研討會。
(7) 協助舉辦 2014 8th Asia International Conference on Mathematical Modeling and Computer Simulation 研討會，擔任大會 honorary chair。
(8) 99-102 年度「教育部補助資訊軟體人才培育資源中心計畫-行動終端應用」，擔任共同主持人。
(9) 100 年度「教育部補助資訊軟體人才培育推廣中心」軟體工程推廣分項計畫，子計畫 3-3：課程發展-「軟體測試管理與實務工具」課程，擔任主持人。

謝東儒副教授

實驗 (研究) 室名稱：計算機圖學實驗室
聯絡電話：02-2771-2171 (4242)
e-mail：tjh@csie.ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~tjhsieh/

研究聚焦領域：☑H：健康科技　☑I：智慧整合科技
☑G：綠色科技　☑H：人文與創新元素

專長

1. 電腦圖學	2. 視覺計算	3. 虛擬實境	4. GPU 平行計算

1. 近年重要論文及著述

(a) 期刊論文

1. Yuan-Sen Yang, Chung-Ming Yang, Tung-Ju Hsieh. 2013. "GPU Parallelization of an Object-Oriented Nonlinear Dynamic Structural Analysis Platform". *Simulation Modelling Practice and Theory*, volume 40, number xx, (2014.01), pp 112-121. (SCI, EI), I.F.=1.159.
2. Tung-Ju Hsieh, Yuan-Sen Yang, Jenq-Haur Wang, Wen-Jay Shen. 2013. "Feature Extraction Using Bionic Particle Swarm Tracing for Transfer Function Design in Direct Volume Rendering". The Visual Computer, volume 29, number, (2013.2), pp 1-12. (SCI, EI), I.F.=0.909, NSC 101-2221-E-027-131-, NSC 101-2218-E-027-001-.
3. Tung-Ju Hsieh*, Falko Kuester, and Tara Hutchinson, "Parallel Terrain Rendering Using a Cluster of Computers", *Journal of the Chinese Institute of Engineers*, volume 36, number 2, (2012.10), p.212-p.223, (SCI, EI), I.F.=0.225, NSC 100-2221-E-027-090-
4. Tung-Ju Hsieh*, Wen-Yew Liang, Yang-Lang Chang, Muhammad T. Satria, and Bormin Huang, "GPU-Based Parallel Tsunami Simulation and Visualization on Tiled Display Wall", *Journal of the Chinese Institute of Engineers*, volume 36, number 2, (2012.10), p.202-p.211, (SCI, EI), I.F.=0.225, NSC 100-2221-E-027-090-
5. Yuan-Sen Yang, Keh-Chyuan Tsai, Amr S Elnashai, and Tung-Ju Hsieh, "An Online Optimization Method for Bridge Dynamic Hybrid Simulations", *Simulation Modelling Practice and Theory*, volume 28, (2012.11), p.42-p.54, (SCI, EI), I.F.=1.159.
6. Yuan-Sen Yang, Shang-Hsien Hsieh*, Tung-Ju Hsieh, "Improving Parallel Substructuring Efficiency by Using a Multi-Level Approach", *Journal of Computing in Civil Engineering*, volume 26, number 4, (2012.7), p.457-p.464, (SCI, EI), I.F.=0.900
7. Muhammad T. Satria, Bormin Huang*, Tung-Ju Hsieh, Yang-Lang Chang, and Wen-Yew Liang, "GPU Acceleration of Tsunami Propagation Model", *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, volume 5, number 3, (2012.6), p.1014-p.1023, (SCI, EI), I.F.=1.140
8. Tung-Ju Hsieh*, Yang-Lang Chang, and Bormin Huang, "High-Performance Visual Analytics of Terrestrial LIDAR Data on Large Display Wall", *SPIE Journal of Applied Remote Sensing*, volume 6, (2012.4), p.1-p.16, (SCI, EI), I.F.=1.000, NSC 100-2221-E-027-090-
9. Tung-Ju Hsieh*, Shiann-Jong Lee, Yuan-Sen Yang, Yang-Lang Chang, Bormin Huang, Cheng-Kai Chen, and Kwan-Liu Ma, "High-Performance Computing and Visualization of Earthquake Simulations and Ground-Motion Sensor Network Data", *SPIE Journal of Applied Remote Sensing*, volume 6, (2012.4), p.1-p.15, (SCI, EI), I.F.=1.000, NSC 100-2221-E-027-090-
10. Tung-Ju Hsieh*, Yuan-Sen Yang, "Visualizing the Seismic Spectral Response of the 1999 Chi-Chi Earthquake using Volume Rendering Technique", *Journal of Computing in Civil Engineering*, volume 26, number 2, (2012.3), p.225-p.235, (SCI, EI), I.F.=0.900, NSC-99-2221-

E-027-098-

11. Yang-Lang Chang*, Tung-Ju Hsieh, Antonio Plaza, Yen-Lin Chen, Wen-Yew Liang, Bormin Huang, and Jyh-Perng Fang, "Parallel Positive Boolean Function Approach to Classification of Remote Sensing Images", *SPIE Journal of Applied Remote Sensing*, volume 5, (2011.12), p.051505-1-p. 051505-15, (SCI, EI), I.F.=1.000
12. Jiaji Wu, Tung-Ju Hsieh, Tao Li, Yang-Lang Chang*, and Bormin Huang, "Digital Signal Processor-based 3D Wavelet Error-resilient Lossless Compression of High-resolution Spectrometer Data", SPIE Journal of Applied Remote Sensing/v.5/(2011.11)/ p.051504-1-p.051504-12/ SCI/I.F.=1.000
13. Yen-Lin Chen, Wen-Yew Liang, Chuan-Yen Chiang, Tung-Ju Hsieh, Da-Cheng Lee, Shyan-Ming Yuan, and Yang-Lang Chang*, "Vision-Based Finger Detection, Tracking, and Event Identification Techniques for Multi-Touch Sensing and Displaying Systems", *Sensors*, volume 11, number 7, (2011.7), p.6868-p.6892, (SCI, EI), I.F.=1.771
14. T. C. Hutchinson*, F. Kuester, Tung-Ju Hsieh, and R. Chadwick, "A Hybrid Reality Environment and Its Application to the Study of Earthquake Engineering", *Virtual Reality Journal*, Springer Verlag, volume 9, number 1, (2005.12), p.17-p.33

(b) 研討會論文

1. Ming-Da Chen and Tung-Ju Hsieh. 2012. " Run-Time GPU Computing and Rendering of Earthquake Ground-Motion Data", *Proceedings of 2012 IEEE 14th International Conference on High Performance Computing and Communications*, 812-817, Liverpool, UK, 06/25/2012-06/27/2012
2. Ming-Da Chen, Tung-Ju Hsieh, and Yang-Lang Chang. 2011. "Volume Data Numerical Integration and Differentiation Using CUDA", *Proceedings of 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2011)*, 1026-1031, Tainan, Taiwan, 12/07/2011-12/09/2011
3. Tung-Ju Hsieh*, Falko Kuester, and Tara Hutchinson. 2011. "Visualizing Thermal Characteristics Interpreted from Glider GPS Flight Logs", *Proceedings of Pacific Conference on Computer Graphics and Applications 2011*, Kaohsiung, Taiwan, 09/21/2011-09/23/2011, NSC 100-2221-E-027-090-, ISBN: 978-3-905673-84-5
4. Yang-Lang Chang, Min-Yu Huang, Tung-Ju Hsieh. 2011. "An efficient GPU-based Implementation of Kalman Filter", *Proceedings of Proceedings of SPIE Volume 8183 (2011 SPIE Conference of Conference Detail for High-Performance Computing in Remote Sensing)*, Paper 8183-23, Prague, Czech Republic, 09/19/2011-09/22/2011
5. Shih-Chieh Wei, Bormin Huang, Tung-Ju Hsieh, Wen-Yew Liang, Yang-Lang Chang. 2011. "Efficient GPU Implementation of Tsunami Simulation Based on the MacCormack Scheme", *Proceedings of Proceedings of SPIE Volume 8183 (2011 SPIE Conference of Conference Detail for High-Performance Computing in Remote Sensing)*, Paper 8183-25, Prague, Czech Republic, 09/19/2011-09/22/2011
6. Tung-Ju Hsieh, Yang-Lang Chang. 2011. "High-Performance Visual Analytics of Terrestrial LIDAR Data for Cliff Erosion Assessment on Large Displays", *Proceedings of Proceedings of SPIE Volume 8183 (2011 SPIE Conference of Conference Detail for High-Performance Computing in Remote Sensing)*, Paper 8183-28, Prague, Czech Republic, 09/19/2011-09/22/2011
7. Yang-Lang Chang, Tung-Ju Hsieh, Min-Yu Huang. 2010. "Parallel Implementation of GPU-Accelerated Kalman Filter", *Proceedings of SPIE Volume 8157 (2011 SPIE Conference of Satellite Data Compression, Communications, and Processing VII)*, Paper 8157-28, San Diego, USA, 08/21/2011-08/25/2011
8. Tung-Ju Hsieh*, Yang-Lang Chang, and Bormin Huang. 2011. "Visual Analytics of Terrestrial

LIDAR Data for Cliff Erosion Assessment on Large Displays", *Proceedings of SPIE Volume 8157 (2011 SPIE Conference of Satellite Data Compression, Communications, and Processing VII)*, Paper 8157-12, San Diego, USA, 08/21/2011-08/25/2011, NSC 100-2218-E-027-002-, ISBN 9780819487674

9. Wei-Sheng Liao, Tung-Ju Hsieh*, Yang-Lang Chang, Wen-Yew Liang, Che-Hao Chang, Wei-Yao Chen. 2011. "Real-Time Spherical Panorama Image Stitching using OpenCL", *Proceedings of WORLDCOMP11, the 2011 International Conference on Computer Graphics and Virtual Reality (CGVR'11)*, Las Vegas, 07/18/2011-07/21/2011, NSC 99-2218-E-027-008-, ISBN: 1-60132-169-4
10. Tung-Ju Hsieh*, Cheng-Kai Chen, and Kwan-Liu Ma. 2010. "Visualizing Field-Measured Seismic Data", *Proceedings of IEEE Pacific Visualization 2010*, pp. 65-72, Taipei, Taiwan, 03/02/2010-03/05/2010, (EI), NSC-99-2221-E-027-098-, ISBN: 978-1-4244-6685-6
11. Yang-Lang Chang*, Zhi-Ming Chen, Jyh-Perng Fang, Wei-Lieh Hsu, Wen-Yew Liang, Tung-Ju Hsieh, Hsuan Ren, Kun-Shan Chen. 2009. "K-Way Tree Classification Based on Semi-Matroid Structure Applied to Multisource Remote Sending Images", *Proceedings of the 2009 IEEE International Geoscience & Remote Sensing Symposium* (IGARSS 2009), Cape Town, Africa, 07/13/2009-07/17/2009, (EI), ISBN: 978-1-4244-3394-0
12. Wen-Yew Liang*, Tung-Ju Hsieh, Muhammad T. Satria, Yang-Lang Chang, Jyh-Perng Fang, Chih-Chia Chen, and Chin-Chuan Han. 2009. "A GPU-Based Simulation of Tsunami Propagation and Inundation", *Proceedings of the 9th International Conference on Algorithms and Architectures for Parallel Processing* (ICA3PP 2009), LNCS 5574, 593-603, Taipei, Taiwan, 06/08/2009-06/11/2009, (EI), ISBN: 978-3-642-03094-9
13. Jyh-Perng Fang*, Yang-Lang Chang, Chih-Chia Chen, Wen-Yew Liang, Tung-Ju Hsieh, Muhammad T. Satria, and Chin-Chuan Han. 2009. "A Parallel Simulated Annealing Approach for Floorplanning in VLSI", *Proceedings of the 9th International Conference on Algorithms and Architectures for Parallel Processing* (ICA3PP 2009), LNCS 5574, 291-302, Taipei, Taiwan, 06/08/2009-06/11/2009, (EI), ISBN: 978-3-642-03094-9
14. Y.-L. Chang, W.-Y. Liang, W.-L. Hsu, T.-J. Hsieh, Z.-M. Chen, and S.-Y. Kao. 2008. "A Class Based Parallel Positive Boolean Function Approach to Multisource Remote Sensing Images", *Proceedings of 2008 Remote Sensing Symposium Across Taiwan Strait*, GuiLin, Guang Xi, China, 09/15/2008-09/19/2008. NSC: 97-2116-M-027-002
15. Michael J. Olsen*, Elizabeth Johnstone, Scott A. Ashford, Neal Driscoll, Adam P. Young, Tung Ju Hsieh, and Falko Kuester. 2008. "Rapid Response to Seacliff Erosion in San Diego County, California Using Terrestrial LIDAR", P*roceedings of Solutions to Coastal Disasters 2008 Conference*, April 13-16, 2008, Turtle Bay, Oahu, Hawaii; Sponsored by COPRI of ASCE, National Oceanic and Atmospheric Administration (NOAA), and US Geologic Survey (USGS)), pp. 573-583. (EI), ISBN 978-0-7844-0968-8
16. Tung-Ju Hsieh*, Michael J. Olsen, Elizabeth Johnstone, Adam P. Young, Neal Driscoll, Scott A. Ashford, and Falko Kuester. 2007. "VR-Based Visual Analytics of LIDAR Data for Cliff Erosion Assessment", *Proceedings of the ACM Virtual Reality Software and Technology* (VRST 2007), pp. 249-250, Irvine, CA, 11/05/2007 - 11/07/2007. (EI), ISBN: 978-1-59593-863-3
17. F. Kuester, T.C. Hutchinson, and T.-J. Hsieh. 2007. "Visualization of Large-Scale Seismic Data Records", 2007. *Proceedings of 4th International Conference on Earthquake Geotechnical Engineering* (4ICEGE 2007), pp. 1-12, Thessaloniki, Greece, 06/25/2007-06/28/2007
18. T.-J. Hsieh, F. Kuester, and T.C. Hutchinson. 2006. "Visualization of Field Measured Seismic Wave Propagation from the 1994 Northridge Earthquake", *Proceedings of EERI's 8th U.S. National Conference on Earthquake Engineering* (8NCEE). 100th Anniversary Earthquake Conference, paper 932, San Francisco, CA, 4/18/2006-4/22/2006

19. T. C. Hutchinson, F. Kuester, T.-J. Hsieh, and R. Chadwick. 2004. "A Hybrid Reality Environment and Its Application to Earthquake Engineering", *Proceedings of IEEE Virtual Reality 2004*, pp. 229-230, Chicago, IL, 3/27/2004-3/31/2004, (EI)
20. T.-J. Hsieh, F. Kuester, and T. C. Hutchinson. 2003. "Visualization of Large-Scale Seismic Field Data", *Proceedings of High Performance Computing Symposium* (HPC 2003), Society for Computer Simulation International, pp. 163-170, Orlando, FL, 3/30/2003-4/3/2003
21. T.-J. Hsieh, F. Kuester, and T. C. Hutchinson. 2003. "Terrain Mapping for Interactive Visualization of Earthquake Datasets", *Proceedings of International Conference on Modeling and Simulation* (MS 2003), IASTED, pp. 489-496, Palm Springs, CA,2/24/2003-2/26/2003, (EI)

(c) 專利

專利類別	專利名稱	專利國家	專利號碼	專利期間	專利發明人	專利權人
發明專利	顯示牆多影像合成系統	中華民國	I-388198	201303~203006	謝東儒	國立臺北科技大學
發明專利	顯示牆系統及高解析度影像生成顯示方法	中華民國	I-457877	201410~203001	謝東儒	國立臺北科技大學
發明專利	一種地震資料視覺化系統及其組成方法	中華民國	I-463433	201412~203011	謝東儒	國立臺北科技大學
發明專利	資料處理系統和方法	中華民國	I-421793	201401~203101	謝東儒	國立臺北科技大學
發明專利	全景影像播放裝置與系統	中華民國	I-434129	201404~203012	謝東儒	國立臺北科技大學
發明專利	虛擬視覺化系統	中華民國	I-460456	201411~203101	謝東儒	國立臺北科技大學

(d) 技術移轉

序號	技術名稱	委託單位	技轉期間	技轉金額
1.	使用平行運算技術及實用之物理運算方程式撰寫電腦程式模擬建築物內外之火煙物理現象，並以 3D 特效方式呈現供電腦動畫程式做後續運用	森鴻數位聯合有限公司	100/03/08～100/04/23	600,000

(e) 專書及專章

(f) 作品

- 計算機圖學營造法式大木作繪圖程式設計

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

序號	計畫名稱	委託單位	執行期間	執行年數	補助金額	主持人或共同/協同主持人
1.	OpenGL, OpenGL ES, GLSL	博盛數碼動力股份有限公司	100 /09/21～100 /10/12	四週	36,000	主持人
2	足底壓力檢測系統雲端化	旭鋒科研股份有限公司	101/10/01～102/07/31	一年	120,000	主持人
3	牙科影像系統流程改造專案	瑞特資訊系統股份有限公司	101/10/01～101/12/31	八週	40,000	主持人

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

國際研討會規劃委員：

- 主辦 Computer Graphics Workshop 2015
- 與言人 Pacific Vis 2010 Panelist 題目：Visualization Research in Taiwan
- 規劃委員 The 17th IEEE International Conference on Parallel and Distributed Systems (ICPADS 2011), 2011 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2011)
- 規劃委員 The 18th IEEE International Conference on Parallel and Distributed Systems (ICPADS 2012), 2012 IEEE International Workshop on Parallel and Distributed Computing in Remote Sensing (IEEE PDCRS 2012)
- 規劃委員 SPIE Optics + Photonics 2011, Satellite Data Compression, Communications, and Processing VII
- 規劃委員 SPIE Remote Sensing, High-Performance Computing in Remote Sensing (2012)

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

陳彥霖 副教授
實驗 (研究) 室名稱：視訊編碼與傳輸實驗室
聯絡電話：02-2771-2171 Ext. 4239
e-mail：ylchen@csie.ntut.edu.tw
網址：http://www.ntut.edu.tw/~ylchen/
專長

1.電腦視覺	2.嵌入式系統	3.穿戴式裝置	4.車用電子

1. 近五年成果

(一)、SCI期刊論文 ('*' indicates the correspondence author)：

J1. Kai-Yi Chin, Ko-Fong Lee, Yen-Lin Chen*, "**Impact on student motivation by using a QR-based U-Learning Material Production System to create authentic learning experiences**," accepted and to appear in *IEEE Transactions on Learning Technologies*, DOI: 10.1109/TLT.2015.2416717, Mar. 2015. **(SSCI, 2013 IF=1.220, 2013 RF=51/219, EDUCATION & EDUCATIONAL RESEARCH)**

J2. Yen-Lin Chen*, Ming-Feng Chang, Wen-Yew Liang, **"Energy-Efficient Video Decoding Schemes for Embedded Handheld Devices"**, accepted for publication in *Multimedia Tools and Applications*, DOI: 10.1007/s11042-014-2435-y, 2014. **(SCI, EI, 2013 IF= 1.058, 2013 RF=35/102, COMPUTER SCIENCE, THEORY & METHODS)**

J3. Hsin-Han Chiang, Yen-Lin Chen*, and Kou-Cheng Hsu, "**Optimized Sensorless Antivibration Control for Semiactive Suspensions With Cosimulation Analysis**," accepted for publication in *IEEE Transactions on Mechatronics*, DOI: 10.1109/TMECH.2014.2358583, 2014. **(SCI, EI, 2013 IF= 3.652, 2013 RF=18/247, ENGINEERING, ELECTRICAL & ELECTRONIC)**

J4. Kai-Yi Chin, Zeng-Wei Hong, Yen-Lin Chen*, "**Impact of Using an Educational Robot-based Learning System on Students' Motivation in Elementary Education**," *IEEE Transactions on Learning Technologies*, Vol.7, No. 4, pp. 333-345, DOI: 10.1109/TLT.2014.2346756, 2014. **(SSCI, 2013 IF=1.220, 2013 RF=51/219, EDUCATION & EDUCATIONAL RESEARCH)**

J5. Jenq-Haur Wang, Hsin-Yang Wang, Yen-Lin Chen, Chuan-Ming Liu, **"A Constructive Algorithm for Unsupervised Learning with Incremental Neural Network"**, accepted for publication in *Journal of Applied Research and Technology*, Vol.13, No.4, Aug. 2015. **(SCI, EI, 2013 IF= 0.447, 2013 RF=203/248, ENGINEERING, ELECTRICAL & ELECTRONIC)**

J6. Tung-Ju Hsieh, Wei-Yao Chen, Che-Hao Chang, Yen-Lin Chen, Ming-Li Lin, Shih-Ching Yeh, Yang-Lang Chang, Bormin Huang, " **High-Performance Meshing Processing of Remote Sensing Data on Large Displays**," *Journal of Applied Remote Sensing*, Vol. 8, 084796 (20 pages), 2014. **(SCI, EI, 2013 IF=0.892, 2013 RF=15/23, IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY)**

J7. Zeng-Wei Hong, Yen-Lin Chen*, Chien-Ho Lan, **"A courseware to script animated pedagogical agents in instructional material for elementary students in English education"**, *Computer Assisted Language Learning*, Vol. 27, no. 5, pp. 379-394, DOI:10.1080/09588221.2012.733712, 2014. (**SSCI, 2013 IF=0.880, 2013 RF=82/219, EDUCATION & EDUCATIONAL RESEARCH**) **(NSC-101-2219-E-027-006, NSC-100-2221-E-027-033)**

J8. Hsin-Han Chiang, Yen-Lin Chen*, Bing-Fei Wu, and Tsu-Tian Lee, **"Embedded Driver-Assistance System Using Multiple Sensors for Safe Overtaking Maneuver"**, *IEEE Systems Journal*, Vol. 8, No. 3, pp. 681-698, DOI: 10.1109/JSYST.2012.2212636, 2014. **(SCI, EI, 2013 IF=1.746, 2013 RF=30/135, COMPUTER SCIENCE, INFORMATION SYSTEMS) (NSC-101-2219-E-027-006, NSC-100-2221-E-027-033)**

J9. Yang-Lang Chang, Jin-Nan Liu, Yen-Lin Chen, Wen-Yen Chang, Tung-Ju Hsieh*, Bormin Huang, " **Hyperspectral Band Selection Based on Parallel Particle Swarm Optimization and Impurity Function Band Prioritization Schemes**," *Journal of Applied Remote Sensing*, Vol. 8, 084798 (18 pages), 2014. **(SCI, EI, 2013 IF=0.892, 2013 RF=15/23, IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY)**

J10. Chuan-Ming Liu, Ta-Chih Su, Jenq-Haur Wang, Yen-Lin Chen, **"Data Broadcasting for Dependent Information Using Multiple Channels in Wireless Broadcast Environments"**, *Journal of Parallel and Distributed Computing*, Vol. 74, pp. 2795-2807, 2014. **(SCI, EI, 2013 IF=**1.011**, 2013 RF=37/102, COMPUTER SCIENCE, THEORY & METHODS)**

J11. Jenq-Haur Wang, Chuan-Ming Liu, Jhih-Siang Syu, Yen-Lin Chen*, **"An Image Retrieving Scheme Using Salient Features and Annotation Watermarking"**, Vol.8 No.1, pp. pp. 213-231, 2014. **(SCI, EI, 2013 IF=0.560, 2013 RF=95/132, COMPUTER SCIENCE, INFORMATION SYSTEMS)**

J12. Yen-Lin Chen, Chao-Wei Yu, Zi-Jie Chien, Chin-Hsuan Liu and Hsin-Han Chiang, **"On-road Driver Monitoring System based on a Solar-powered In-vehicle Embedded Platform"**, *International Journal of Photoenergy*, vol. 2014, Article ID 309578, 12 pages, 2014. **(SCI, EI, 2012 IF= 2.663, 2012 RF=9/79, OPTICS)**

J13. Yen-Lin Chen, Zi-Jie Chien, Wen-Shing Lee, Ching-Song Jwo, Kun-Ching Cho, **"Experimental Investigation on Thermoelectric Chiller Driven by Solar Cell"**, *International Journal of Photoenergy*, vol. 2014, Article ID 102510, 8 pages, 2014. **(SCI, EI, 2012 IF= 2.663, 2012 RF=9/79, OPTICS)**

J14. Bing-Fei Wu, Hao-Yu Huang, Jenq-Haur Wang, Chao-Jung Chen, Yen-Lin Chen*, **"Perceptual Zero-Tree Coding with Efficient Optimization for Embedded Platforms"**, *Journal of Applied Research and Technology*, Vol. 11, No. 4, pp. 487-495, 2013. **(SCI, EI, 2013 IF= 0.447, 2013 RF=203/248, ENGINEERING, ELECTRICAL & ELECTRONIC)**

J15. Bing-Fei Wu, Hao-Yu Huang, Chao-Jung Chen, Ying-Han Chen, Chia-Wei Chang, Yen-Lin Chen*, **"A Vision-based Blind Spot Warning System for Daytime and Nighttime Driver Assistance"**, *Computers and Electrical Engineering*, vol. 39, pp. 846-862, 2013. **(SCI, EI, 2013 IF=**0.992**, 2013 RF=26/50, COMPUTER SCIENCE, HARDWARE & ARCHITECTURE)**

J16. Cheng-Hung Chuang and Yen-Lin Chen*, **"A Steganographic Optical Image Encryption System Based on Reversible Data Hiding and Double Random Phase Encoding"**, *Optical Engineering*, Vol. 52, No. 2, 028201, doi: 10.1117/1.OE.52.2.028201, 2013. **(SCI, EI, 2013 IF=0.958, 2013 RF=55/83, OPTICS)**

J17. Zi-Jie Chien, Hung-Pin Cho, Ching-Song Jwo, Chao-Chun Chien, Sih-Li Chen and Yen-Lin Chen*, **"Experimental Investigation on an Absorption Refrigerator Driven by Solar Cells"**, *International Journal of Photoenergy*, vol. 2013, Article ID 490124, 6 pages, 2013. **(SCI, EI, 2012 IF= 2.663, 2012 RF=9/79, OPTICS)**

J18. Ching-Song Jwo, Zi-Jie Chien, Yen-Lin Chen*, Chao-Chun Chien, **"Development of a Wind Directly Forced Heat Pump and Its Efficiency Analysis"**, *International Journal of Photoenergy*, Vol. 2013, Article ID 862547, 7 pages, 2013. **(SCI, EI, 2012 IF= 2.663, 2012 RF=9/79, OPTICS)**

J19. Yen-Lin Chen, Hsin-Han Chiang, Chao-Wei Yu, Chuan-Yen Chiang, Chuan-Ming Liu, Jenq-Haur Wang*, **"An Intelligent Knowledge-Based and Customizable Home Care System Framework with Ubiquitous Patient Monitoring and Alerting Techniques"**, *Sensors*, vol. 12, no. 8, pp. 11154-11186, 2012. **(SCI, EI, 2013 IF=2.048, 2013 RF=10/57, INSTRUMENTS & INSTRUMENTATION) (NSC-101-2219-E-027-006, NSC-100-2221-E-027-033)**

J20. Bing-Fei Wu, Hao-Yu Huang, and Yen-Lin Chen*, **"The Single-Pass Perceptual Embedded Zero-Tree Coding Implementation on DSP"**, *Computers and Mathematics with Applications*, Vol. 64, No. 5, pp. 1140–1152, http://dx.doi.org/10.1016/j.camwa.2012.03.032, 2012. **(SCI, EI, 2013 IF=1.996, 2013 RF=17/251, MATHEMATICS, APPLIED) (NSC-100-2219-E-027-006, NSC-100-2221-E-027-033)**

J21. Yen-Lin Chen, Hsin-Han Chiang, Chuan-Yen Chiang, Chuan-Ming Liu, Shyan-Ming Yuan, Jenq-Haur Wang*, **"A Vision-based Driver Nighttime Assistance and Surveillance System based on Intelligent Image Sensing Techniques and Heterogamous Dual-Core Embedded System Architecture"**, *Sensors*, vol. 12, no. 3, pp. 2373-2399, 2012. **(SCI, EI, 2013 IF=2.048, 2013 RF=10/57, INSTRUMENTS & INSTRUMENTATION) (NSC-100-2219-E-027-006, NSC-100-2221-E-027-033)**

J22. Yen-Lin Chen, Zeng-Wei Hong, and Cheng-Hung Chuang*, **"A Knowledge-based System for Extracting Text-lines from Mixed and Overlapping Text/graphics Compound Document Images"**, *Expert systems with Applications*, vol. 39, no. 1, pp. 494-507, Jan. 2012. **(SCI, EI, 2013 IF= 1.965, 2013 RF=63/248, ENGINEERING, ELECTRICAL & ELECTRONIC) (NSC-100-2221-E-027-033)**

J23. Yang-Lang Chang*, Tung-Ju Hsieh, Antonio Plaza, Yen-Lin Chen, Wen-Yew Liang, Bormin Huang, and Jyh Perng Fang, "**Parallel Positive Boolean Function Approach to Classification of Remote Sensing Images**," *Journal of Applied Remote Sensing*, vol. 5, 051505 (15 pages), DOI:10.1117/1.3626866, 2012. **(SCI, EI, 2013 IF=0.892, 2013 RF=15/23, IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY)**

J24. Yen-Lin Chen*, Wen-Yew Liang, Chuan-Yen Chiang, Tung-Ju Hsieh, Da-Cheng Lee, Shyan-Ming Yuan, and Yang-Lang Chang*, **"Vision-based Finger Detection, Tracking, and Event Identification Techniques for Multi-touch Sensing and Displaying Systems"**, *Sensors*, vol. 11, no. 7, pp. 6868-6892, 2011. **(SCI, EI, 2013 IF=2.048, 2013 RF=10/57, INSTRUMENTS & INSTRUMENTATION) (NSC-99-2622-E-027-019-CC3, NSC-100-2219-E-027-006)**

J25. Yen-Lin Chen, Bing-Fei Wu, Hao-Yu Huang, and Chung-Jui Fan, "**A Real-time Vision System for Nighttime Vehicle Detection and Traffic Surveillance**", *IEEE Transactions on Industrial Electronics*, vol. 58, no. 5, pp. 2030 - 2044, 2011. **(SCI, EI, 2013 IF=6.500, 2013 RF=2/248, ENGINEERING, ELECTRICAL & ELECTRONIC) (NSC-98-2220-E-027-010)**

J26. Kai-Yi Chin, Yen-Lin Chen, Jong-Shin Chen, Zeng-Wei Hong*, and Jim-Min Lin, "**Exploring the efficiency of multimedia with an animated agent in Web- based learning systems**," *IEICE Transactions on Information and Systems*, vol. E94-D, no. 4, pp.754-762, 2011. **(SCI, EI, 2012 IF= 0.218, 2012 RF=129/132, COMPUTER SCIENCE, INFORMATION SYSTEMS)**

J27. Bing-Fei Wu, Hao-Yu Huang, Yen-Lin Chen* , Hsin-Yuan Peng, and Jia-Hsiung Huang, **"MPEG-2/4 Low-Complexity Advanced Audio Coding Optimization and Implementation on DSP"**, *IEICE Transactions on Information and Systems*, Vol. E93-D, No. 5, pp.1225-1237, 2010. **(SCI, EI, 2012 IF=0.218, 2012 RF=129/132, COMPUTER SCIENCE, INFORMATION SYSTEMS)**

(二)、科技部計畫：

序號	計畫名稱	計畫編號	執行期間	執行年數(例:1 年,2 年…)	補助金額	是否為主持人	備註
1	整合車載即時視覺辨識與智慧眼鏡技術之行車輔助系統暨其 CPU-GPU 嵌入式多核心運算平台之實現	MOST-104-2622-E-027 -006 -CC2	104.02 ~ 105.01	1 年	938,000	主持人	產學合作計畫
2	全天候行車安全輔助系統之快速視覺辨識技術暨其嵌入式多核心系統平台之研發(2/2)	MOST-103-2622-E-027 -002 -CC2	103.11 ~ 104.12	1 年	830,000	主持人	產學合作計畫
3	友善高效能智慧聯網電視之核心技術--子計畫四-智慧聯網電視之多模式多使用者視覺人機互動與異質運算關鍵技術	MOST-103-2221-E-027 -061	103.08 ~104.07	1 年	651,000	主持人	
4	以擴增實境為基礎之可穿戴式人機互動介面系統暨其嵌入式多核心運算技術之開發	MOST-103-2622-E-027-007-CC2	103.02 ~104.01	1 年	1,000,000	主持人	產學合作計畫
5	全天候行車安全輔助系統之快速視覺辨識技術暨其嵌入式多核心系統平台之研發(1/2)	NSC-102-2622-E-027-027 -CC2	102.11 ~103.10	1 年	763,000	主持人	產學合作計畫
6	聯網電視關鍵技術之研發及其應用--子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(3/3)	NSC-102-2219-E-027-006-	102.05 ~103.07	1 年	1,161,000	主持人	
7	主動式夜間視覺行車安全輔助與駕駛監控系統暨嵌入式多核心平台技術之研發（合作廠商：佐臻科技公司）	NSC-101-2622-E-027-025-CC3	101.11 ~102.10	1 年	608,000	主持人	產學合作計畫
8	聯網電視關鍵技術之研發及其應用--子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(2/3)	NSC-101-2219-E-027-006-	101.05 ~102.04	1 年	986,000	主持人	
9	應用於新一代數位電視之智慧型互動式肢體手勢人機操作介面關鍵技術之研究（合作廠商：佐臻科技公司）	NSC-100-2622-E-027-024-CC3	100.11 ~101.10	1 年	503,000	主持人	產學合作計畫
10	運輸機器人於智慧型路口安全防護之研究-子計畫四-智慧型路口之即時視訊壓縮與行人監控技術暨其嵌入式平台整合	NSC-100-2221-E-027-033	100.08 ~101.07	1 年	483,000	主持人	

	發展之研究(2/3)						
11	聯網電視關鍵技術之研發及其應用--子計畫五：聯網電視之互動式視覺人機操作介面暨其嵌入式平台整合發展之研究(1/3)	NSC-100-2219-E-027-006	100.05~101.04	1 年	973,000	主持人	
12	結合視覺辨識與視訊傳輸之嵌入式智慧型視障者行動輔助系統（合作廠商：新華電腦）	NSC-99-2622-E-027-019-CC3	99.11~100.10	1 年	519,000	主持人	產學合作計畫
13	導護與運輸機器人於智慧型路口安全防護之研究--子計畫四：智慧型路口之即時視訊壓縮與行人監控技術暨其嵌入式平台整合發展之研究	NSC-99-2221-E-027-100	99.08~100.07	1 年	575,000	主持人	

(三)、產學合作計畫：

序號	計畫名稱	委託單位	計畫編號	執行期間	執行年數(例:1年,2年…)	補助金額	主持人或共同/協同主持人	備註
一般產學合作計畫								
1	Android based 車用數位儀表板平台	財團法人資訊工業策進會	203N06	103.1-103.12	1 年	**700,000**	主持人	
2	冰水主機選機軟體開發	東元電機股份有限公司	202A092	102.8–103.7	1 年	**獲分配經費: 490,100 元** (計畫總經費 980,200 元)	分項計畫主持人 (計畫總主持人: 卓清松教授)	
3	冷凍空調產品效率提升研究計畫	東元電機股份有限公司	2007606	100.02-101.02	1 年	**獲分配經費: 372,000 元** (計畫總經費 1,860,000 元)	分項計畫主持人 (計畫總主持人: 卓清松教授)	
科技部(國科會)產學合作計畫廠商配合款								
4	整合車載即時視覺辨識與智慧眼鏡技術之行車輔助系統暨其 CPU-GPU 嵌入式多核心運算平台之實現	佐臻科技公司	MOST-104-2622-E-027 -006 -CC2	104.02~105.01	1 年	**256,300**	主持人	科技部產學合作計畫廠商配合款
5	全天候行車安全輔助系統之快速視覺辨識技術暨其嵌入式多核心系統平台之研發(2/2)	億像科技公司	MOST-103-2622-E-027 -002 -CC2	103.11~104.12	1 年	**250,200**	主持人	科技部產學合作計畫廠商配合款
6	以擴增實境為基礎之可穿戴式人機互	佐臻科技公司	MOST-103-2622-	103.02~104.01	1 年	**252,000**	主持人	科技部產學合

	動介面系統暨其嵌入式多核心運算技術之開發		E-027-007-CC2					作計畫廠商配合款
7	全天候行車安全輔助系統之快速視覺辨識技術暨其嵌入式多核心系統平台之研發(1/2)	億像科技公司	NSC-102-2622-E-027-027 -CC2	102.11~103.10	1 年	**250,200**	主持人	國科會產學合作計畫廠商配合款
8	主動式夜間視覺行車安全輔助與駕駛監控系統暨嵌入式多核心平台技術之研發	佐臻科技公司	NSC-101-2622-E-027-025-CC3	101.11~102.10	1 年	**166,480**	主持人	國科會產學合作計畫廠商配合款
9	應用於新一代數位電視之智慧型互動式肢體手勢人機操作介面關鍵技術之研究	佐臻科技公司	NSC-100-2622-E-027-024-CC3	100.11~101.10	1 年	**151,920**	主持人	國科會產學合作計畫廠商配合款
10	結合視覺辨識與視訊傳輸之嵌入式智慧型視障者行動輔助系統	新華電腦公司	NSC-99-2622-E-027-019-CC3	99.11 ~ 100.10	1 年	**140,700**	主持人	國科會產學合作計畫廠商配合款

- 近五年共執行 **10 件業界產學合作計畫**並擔任計畫主持人或分項計畫主持人,包含 **3 件**一般業界產學合作計畫案，以及 **7 件**科技部（國科會）產學合作計畫案業界配合款，**業界產學計畫經費合計: 3,029,900 元**

(四)、技術轉移案：

序號	技術名稱	委託單位	技轉期間	技轉金額	備註
1	應用於智慧機器人之人臉識別技術	泰金寶電通股份有限公司	103.12-104.06	500,000	
2	智慧家庭空調雲端控制技術	東元電機股份有限公司	103.08-103.12	380,000	
3	特定 BLE 裝置之測試 App 技術	海聚科技有限公司	103.12-104.03	50,000	
4	音樂貝殼 Android 運動 App 技術	快樂島股份有限公司	102.08-103.11	100,000	
5	特定螢光色帶偵測與輔助背誦學習 App 技術	恩宏國際有限公司	102.08-103.10	80,000	
6	全天候行車安全輔助系統之快速視覺辨識技術暨其嵌入式多核心系統平台之研發	億像科技公司	102.11~103.10	200,000	(國科會開發型產學計畫先期技轉金)
7	行人偵測及車前機車偵測演算法技術轉移開發案	億像科技公司	101.10~102.12	600,000	
8	主動式夜間視覺行車安全輔助與駕駛監控系統暨嵌入式多核心平台技術之研發	佐臻科技公司	101.11 ~ 102.10	61,980	(國科會應用型產學計畫先期技轉金)
9	應用於新一代數位電視之智慧型互動式肢體手勢人機操作介面關鍵技術之研究	佐臻科技公司	100.11 ~ 101.10	58,600	(國科會應用型產學計畫先期技轉金)
10	結合自畫像機之應用人臉影像處理技術	春雷創意顧問有限公司	100.07 ~ 101.06	50,000	

11	應用電腦視覺技術之嵌入式智慧型視障輔助辨識系統	新華電腦股份有限公司	99.11 ~ 100.10	53,000	(國科會應用型產學計畫先期技轉金)

- **共計獲得 11 件技術移轉案，獲技術移轉金合計: 2,133,580 元**

(五)、專利：

序號	專利名稱	專利核准號碼	核發專利之國家及日期	專利型態	專利發明人	專利權有效期間	備註
1	Multi-touch sensing system capable of optimizing touch blobs according to variation of ambient lighting conditions and method thereof	US 8941609 B2	美國，104.01.27	發明	陳彥霖，余兆偉，江川彥，張陽郎，梁文耀	104.01~ 122.09	
2	Guide system having function of real-time voice response for the visually impaired and method thereof	US 8922632B2	美國, 103.12.30	發明	陳彥霖，余兆偉，江川彥	103.12~ 122.08	
3	具即時語音回報功能的導盲系統及其方法	發明第 I442917 號	台灣，103.07.01	發明	陳彥霖，余兆偉，江川彥	103.07~ 121.02	
4	Vehicle Tracking System And Tracking Method Thereof	US 8,503,725 B2	美國，103.08.06	發明	吳炳飛、U 陳彥霖、黃皜昱、范崇瑞	102.08~ 120.09	
5	License plate recognition system and method	US 8,953,846 B2	美國，104.02.10	發明	吳炳飛、U 陳彥霖、黃皜昱、林信佑	104.02~ 122.06	
6	車輛追蹤系統及其方法	發明第 I408625 號	台灣，102.09.11	發明	吳炳飛、陳彥霖、黃皜昱、范崇瑞	103.09~ 119.04	

(六)、學術榮譽與獎勵

序號	榮譽名稱/競賽名稱及等次	贈與/舉辦機構及國家	授予/獲獎日期	是否為指導學生作品/運動參加競賽而獲得	備註 (例如所屬計畫案名稱、作者順位等)
學術榮譽與獎項					
1	榮獲本校國立臺北科技大學-"103 年度全校傑出研究獎"	台北科技大學/台灣	103.11	否	
2	榮獲「103 年度科技部工程司 技術及知識應用型產學合作計畫 電資通訊領域」《產學成果傑出獎》	科技部/台灣	103.12	否	主動式夜間視覺行車安全輔助與駕駛監控系統暨嵌入式多核心平台技術之研發
3	教育部 102 年度資訊及科技教育司網	教育部/台灣	103.01	否	

	路通訊人才培育先導型計畫,優良教材佳作獎				
4	榮獲國立臺北科技大學-“102 年度 Dr. Shechtman 年輕學者研究獎"	台北科技大學/台灣	102.12	否	
5	榮獲「102 年度國科會工程處技術及知識應用型產學合作計畫 電資通訊領域」《海報展示傑出獎》.	國科會/台灣	102.12	否	應用於新一代數位電視之智慧型互動式肢體手勢人機操作介面關鍵技術之研究
6	榮獲國立臺北科技大學-“電資學院 102 年度傑出研究獎"	台北科技大學/台灣	102.05	否	
7	榮獲中華民國系統學會-“第四屆傑出青年獎"	中華民國系統學會/台灣	102.04	否	
8	榮獲「101 年度國科會工程處 技術及知識應用型產學合作計畫 電資通訊領域」《海報展示傑出獎》	國科會/台灣	101.12	否	結合視覺辨識與視訊傳輸之嵌入式智慧型視障者行動輔助系統
9	榮獲經濟部智慧財產局-101 年度國家發明創作獎銀牌獎 - “基於電腦視覺的智慧型夜間車輛即時偵測與辨識系統”	經濟部/台灣	101.09	否	
10	中華智慧型運輸系統協會,101 年度智慧運輸論文獎 -“以電腦視覺為基礎的嵌入式智慧型夜間車輛偵測暨交通監控系統”	中華智慧型運輸系統協會/台灣	101.09	否	
11	獲升 IEEE Senior Member	IEEE/U.S.A.	101.04	否	
指導學生參與全國性與國際競賽獲獎					
12	指導學生參加「教育部 103 年度全國大專電腦軟體設計競賽」獲應用軟體設計組第三名	教育部/台灣	103.11.22	是	
13	指導學生參加經濟部「2014 Open Data 創新應用競賽」,以「開放法律判決智慧檢索與分析應用」榮獲特優獎	經濟部/台灣	103.9.24	是	
14	指導學生參與教育部 2014 大專校院軟體創作競賽, 社群運算與巨量資料應用組, 榮獲佳作獎	教育部/台灣	103.6.30	是	
15	指導學生參與中華民國民生電子學會 IEA-AIE 2014 電腦視覺技術競賽榮獲第三名	中華民國民生電子學會/台灣	103.6.5	是	
16	指導學生參與 2014 年機器人盃日本公開賽(RoboCup Japan Open 2014 Tokyo) 榮獲技術挑戰賽冠軍及足球賽季軍, 2014.	日本機器人協會/日本	103.6.1	是	
17	指導學生參與德州儀器 (TI) DSP 及 MCU 應用競賽（Taiwan DSP-MCU Design Contest 2014）榮獲 DSP 創思應用實現組第三名	德州儀器/台灣	103.5.17	是	
18	指導學生參與上銀科技第六屆上銀智慧機械手實作競賽榮獲佳作獎, 2013.	上銀科技/台灣	102.9.1	是	
19	研究成果指導學生餐與「第一屆 IPPR 技術創新暨產業應用獎」榮獲《佳作獎》- 「以電腦視覺為基礎的智慧型夜間駕駛輔助及交通監控系統」, 2013.	中華民國影像處理與圖形識別學會/台灣	102.8.18	是	

20	指導學生參與 2013 年機器人盃日本公開賽(RoboCup Japan Open 2013 Tokyo)榮獲亞軍, 2013.	日本機器人協會/日本	102.6.30	是	
21	指導學生參與第二屆中華太谷盃嵌入式創意應用競賽，榮獲第一名, 2012.	集博股份有限公司/台灣	101.12.14	是	
22	指導學生參與財團法人育秀教育基金會第九屆育秀盃創意獎，榮獲工業設計類佳作獎、菁英獎、最佳組合獎	財團法人育秀教育基金會/台灣	101.4.13	是	

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

- 開發自動化光學檢測之影像分析技術。送審人與致茂電子公司技轉開發一系列整合實現於嵌入式多核心運算平台之即時光學電子元件視覺檢測技術，期可大大提高電子元件檢測之效率，與提供高度客製化與低成本之光學自動檢測機台解決方案。(本技術技轉予致茂電子公司，共獲 810,000 技術移轉金)
- 開發基於 Android 平台之車用數位儀表板技術。送審人與資策會合作開發新一代基於 Android 平台之車用數位儀表板技術，並結合擴增實境顯示技術，以研發於抬頭顯示器（HUD）上顯示車輛駕駛前方路況與車輛狀況之即時訊息，以提供汽車駕駛更為安全便利的行車資訊顯示機制。(本合作案獲 70 萬元合作經費)
- 開發行人偵測及車前機車偵測嵌入式 DSP 演算法技術。送審人與億像科技公司合作開發一系列日間與夜間行人與機車偵測技術，並針對 TI 嵌入式多核心處理器平台加以實現新一代即時快速最佳化影像辨識技術模組，以提供汽車電子市場一系列主動式行人安全防護之極佳解決方案。(本技術技轉予億像科技公司，共獲 600,000 技術移轉金)
- 發展主動式夜間視覺行車安全輔助與駕駛監控系統暨嵌入式多核心平台技術。送審人針對「行車安全輔助與駕駛監控」關鍵技術發展新一代駕駛輔助與監控技術，與佐臻股份有限公司合作發展一套行車安全輔助與駕駛監控系統，其包含結合影像擷取裝置以及所預期開發之各項技術模組，包括行車紀錄、儲存、行車偏移偵測基於車道線、駕駛疲勞偵測利用眼睛視線偵測技術模組，並結合異質多核心嵌入式軟體技術，以達成低成本具高度整合性之多功能即時駕駛安全輔助與監控系統。計畫成果更榮獲國科會工程處 103 年度技術及知識應用型產學合作計畫 電資通訊領域《產學成果傑出獎》。(101 年度國科會應用型產學計畫，總經費共 774,480 元)
- 開發應用於聯網電視之體感人機互動技術平台。由於聯網電視的逐步普及與成為家庭多媒體網路中心，其提供之大量互動式數位內容，使傳統遙控器已不敷使用於內容檢索與互動操作。針對此需求，送審人與佐臻股份有限公司合作開發新一代整合式體感人機互動操控介面，應用裝設於聯網電視與客廳桌面之攝影機，辨識家庭使用者各種體感手勢人機互動動作，轉譯成一系列人機互動操作指令，並將這一系列技術模組整合於嵌入式機上盒平台，以達成使用者透過身體動作與聯網數位電視進行互動式人機操作，計畫成果更榮獲國科會工程處 技術及知識應用型產學合作計畫 電資通訊領域《海報展示傑出獎》。(100 年度國科會應用型產學計畫，總經費共 654,920 元)
- 發展應用於商用大型空調系統節能操控之嵌入式行動遠端監控介面技術、及選機軟體技術。主持人與東元電機股份有限公司合作，應用 ARM 嵌入式手持行動平台，開發一系列應用於圖形化監控、即時通訊技術、以及冰水主機之選機技術，並整合開發大型空調系統節能與舒適度最佳化技術，以整合發展一套智慧型遠端行動商用大型空調主機監控平台、以及具備最佳化節能之冰水主機搭配選機軟體。(本產學合作 100 年度總經費 1,860,000 元，主持人分項獲分配經費 372,000 元；102 年度計畫總經費 980,000 元，主持人分項獲分配經費 490,000 元)

王正豪 副教授

實驗 (研究) 室名稱：網路資訊檢索實驗室

聯絡電話：(02) 27712171 - 4238

e-mail：jhwang @ ntut.edu.tw

網址：http://www.cc.ntut.edu.tw/~jhwang/

研究聚焦領域：□ H：健康科技　　√ I：智慧整合科技
□ G：綠色科技　　□ H：人文與創新元素

專長：1._WEB 技術_ 2._商業智慧與資料探勘__ 3._平行與分散式應用_ 4. 數位版權保護及管理

1. 近年重要論文及著述

(a) 期刊論文

1. Chuan-Ming Liu, Ta-Chih Su, Jenq-Haur Wang, Yen-Lin Chen (2014, Sep). "Data broadcasting for dependent information using multiple channels in wireless broadcast environments," Journal of Parallel and Distributed Computing (JPDC), 74(9), 2795-2807. (SCI, 37/102, Computer Science, Thoery & Methods)
2. Jenq-Haur Wang*, Hung-Chi Chang (2014, Jul). Exploiting Near-Duplicate Relations in Organizing News Archives. International Journal of Intelligent Systems (IJIS), 29(7), 97-614. (SCI, 49/115, Computer Science, Artificial Intelligence).
3. Jenq-Haur Wang, Chuan-Ming Liu, Jhih-Siang Syu, and Yen-Lin Chen* (2014, Jan). An Image Retrieving Scheme Using Salient Features and Annotation Watermarking. KSII Transactions on Internet and Information Systems, 8(1), 213-231. (SCI)
4. Tung-Ju Hsieh, Yuan-Sen Yang, Jenq-Haur Wang, Wen-Jay Shen (2014, Jan). Feature extraction using bionic particle swarm tracing for transfer function design in direct volume rendering. The Visual Computer, 30(1), 33-44. (SCI, 60/105, Computer Science, Software Engineering).
5. Jenq-Haur Wang*, Hung-Chi Chang (2013, Dec). CoBITs: A Distributed Indexing Approach to Collaborative Content-based Multimedia Retrieval across Digital Archives. Multimedia Tools and Applications. (Accepted). (SCI, 35/102, Computer Science, Theory & Methods)
6. Jenq-Haur Wang, Meng-Han Shih (2013, Dec). Constructing Query Context Knowledge Bases for Relevant Term Suggestion. Journal of Information Science and Engineering (JISE). (Accepted). (SCI, 121/132, Computer Science, Information Systems).
7. Bing-Fei Wu, Hao-Yu Huang, Jenq-Haur Wang, and Yen-Lin Chen (2013, Aug). Perceptual Zero-Tree Coding with Efficient Optimization for Embedded Platforms Journal of Applied Research and Technology (JART), 11(4), 487-495. (SCI, 72/90, Engineering, Multidisciplinary).
8. Yen-Lin Chen, Chuan-Ming Liu, Chuan-Yen Chiang, Shyan-Ming Yuan and Jenq-Haur Wang* (2013, Aug). Building Communication Software: a Projectbased Approach for Teaching C++ Object-oriented Programming. International Journal of Innovative Computing, Information and Control (IJICIC), 9(8), 3415-3436. (EI).
9. Bing-Fei Wu, Hao-Yu Huang, Jenq-Haur Wang, and Yen-Lin Chen (2013, Jan).The Single-Pass Perceptual Embedded Zero-Tree Coding Implementation and Optimization on DSP. Applied Mechanics and Materials, 2115-2119. (EI).
10. Hung Wei Chang, Che Wun Chiou, Wen-Yew Liang, and Jenq-Haur Wang (2013,Jan). Full Multiplexers Implementation of Dual Basis Multiplier over GF(2^m).Applied Mechanics and Materials, 3423-3427. (EI).
11. Jenq-Haur Wang, Jhih-Siang Syu, Chuan-Ming Liu, and Yen-Lin Chen* (2013, Jan). An Annotation Watermarking Approach to Image Tagging for Relevant Information Retrieval. Applied Mechanics and Materials, 3310-3314. (EI).
12. Wen-Yew Liang, Ming-Feng Chang, Yen-Lin Chen, and Jenq-Haur Wang (2013, Jan). Performance Evaluation for Dynamic Voltage and Frequency Scaling Using Runtime Performance Counters. Applied

Mechanics and Materials, 2575-2579. (EI).

13. Jenq-Haur Wang, Hung Wei Chang, Che Wun Chiou, and Wen-Yew Liang (2012,Dec). Low-complexity Design of Bit-parallel Dual Basis Multiplier overGF(2^m). IET Information Security, 6(4), 324-328. (SCI, 68/100, ComputerScience, Theory & Methods).
14. Yen-Lin Chen, Hsin-Han Chiang, Chao-Wei Yu, Chuan-Yen Chiang, Chuan-Ming Liu, Jenq-Haur Wang* (2012, Aug). An Intelligent Knowledge-Based andCustomizable Home Care System Framework with Ubiquitous Patient Monitoring and Alerting Techniques. Sensors, 12(8), 11154-11186. (SCI, 9/57, Instruments & Instrumentation)
15. Yen-Lin Chen, Hsin-Han Chiang, Chuan-Yen Chiang, Chuan-Ming Liu, Shyan-Ming Yuan, Jenq-Haur Wang* (2012, Feb). A Vision-Based Driver NighttimeAssistance and Surveillance System Based on Intelligent Image Sensing Techniques and Heterogamous Dual-Core Embedded System Architecture .Sensors, 12(3), 2373-2399. (SCI, 9/57, Instruments & Instrumentation)
16. 王正豪*, 羅一中 (2011, Jun). 利用不相關回饋動態調整之個人化搜尋. Journal of National Taipei University of Technology, 44(1), 35-48. (THCI).

(b) 研討會論文

1. Chen-Tao Chuang, Kai-Hsiang Yang, Jenq-Haur Wang, Yu-Li Lin (2014, Aug). Combining Query Terms Extension and Weight Correlative for Expert Finding. The 2014 IEEE/WIC/ACM International Conference on Web Intelligence (WI 2014), Warsaw, Poland.
2. Jenq-Haur Wang and Hsin-Yang Wang (2014, Jun). Incremental Neural Network Construction for Text Classification. The IEEE International Symposium on Computer, Consumer and Control (IS3C 2014), Taichung, Taiwan.
3. Jenq-Haur Wang, Ting-Wei Ye (2013, Nov). Unsupervised Opinion Targets Expansion and Modification Relation Identification for Microblog Sentiment Analysis. The 5th International Conference on Social Informatics (SocInfo 2013), Kyoto, Japan.
4. Jenq-Haur Wang and Ting-Wei Ye (2013, Oct). Microblog Sentiment Analysis based on Opinion Target Modifying Relation. The 25th Conference on Computational Linguistics and Speech Processing (ROCLING 2013), Kaohsiung, Taiwan.
5. Han-Chih Liu, Jenq-Haur Wang* (2012, Dec). Aggregating Opinions on Hot Topics from Microblog Responses. The Eighth Asia Information Retrieval Societies Conference (AIRS 2012), Tianjin, China.
6. Jenq-Haur Wang*, Meng-Han Shih (2012, Nov). Relevant Term Suggestion based on Pseudo Relevance Feedback from Web Contexts. The 14th International Conference on Asia-Pacific Digital Libraries (ICADL 2012), Taipei, Taiwan.
7. Han-Chih Liu, Jenq-Haur Wang* (2012, Aug). Social Influence Estimation for Short Texts in Plurk. The 2012 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2012), Istanbul, Turkey.
8. Jenq-Haur Wang*, Jeng-Yuan Yang (2012, Mar). Statistical Single-Document Summarization for Chinese News Articles. Proceedings of the 26th IEEE International Conference on Advanced Information Networking and Applications (AINA 2012), Fukuoka, Japan.
9. Jenq-Haur Wang* and Chi-Ching Lee (2011, Oct). Unsupervised Opinion Phrase Extraction and Rating in Chinese Blog Posts. Proceedings of the 3rd IEEE International Conference on Social Computing (SocialCom 2011), Boston, USA.
10. Jenq-Haur Wang* (2011, Aug). Web-based Verification on the Representativeness of Terms Extracted from Single Short Documents. Proceedings of the 2011 IEEE/WIC/ACM International Conference on Web Intelligence (WI 2011), Lyon, France.
11. Jenq-Haur Wang* and Ming-Sheng Lin (2011, Jul). Using Inter-Comment Similarity for Comment Spam Detection in Chinese Blogs. Proceedings of the 2011 International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2011), Kaohsiung, Taiwan.

(c) 專利

(d) 技術移轉

(1) 判決書之證據力及法官心證推估演算法, 法愛公德會, 150,000, 2013/08 – 2014/01.

(e) 專書及專章

(f) 作品

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

(1) 國科會研究計畫: 主持人

1. 聯網電視關鍵技術之研發及其應用- 子計畫四：聯網電視之資訊整合與分析技術(3/3), NSC102-2219-E-027-005, 2013/05 – 2014/07, 874,000.
2. 聯網電視關鍵技術之研發及其應用- 子計畫四：聯網電視之資訊整合與分析技術(2/3), NSC101-2219-E-027-005, 2012/05 – 2013/04, 747,000.
3. 聯網電視關鍵技術之研發及其應用- 子計畫四：聯網電視之資訊整合與分析技術(1/3), NSC100-2219-E-027-005, 2011/05 – 2012/04, 740,000.
4. 基於社交網路探勘之網頁意見品質評估研究, NSC99-2221-E-027-094, 2010/08 – 2011/10, 565,000.
5. 基於內容比對的 Web 2.0 文件複製偵測及追蹤技術(II), NSC98-2221-E-027-069, 2009/08 – 2010/07, 605,000.

(2) 國科會研究計畫: 共同主持人

1. 搭配多元智慧載具並結合影像與聲音技術之聯網電視人性化互動介面(1/3), MOST103-2218-E-027-006-MY3, 2014/09 - 2015/08, 3,396,000.
2. 聯網電視關鍵技術之研發及其應用- 總計畫及子計畫一：聯網電視之視訊關鍵技術(3/3), NSC102-2219-E-027-002, 2013/05 – 2014/07, 2,290,000.
3. 聯網電視關鍵技術之研發及其應用- 總計畫：聯網電視關鍵技術之研發及其應用(1/3), NSC100-2219-E-027-001, 2011/05 – 2012/04, 1,229,000.
4. 運用互動學習與實境參與提升高中女性對無線網通科技之探索能力－應用無線通訊的互動科技增進女性科學教育課程之參與: 以中山女高為例(2/2), NSC100-2515-S-027-004, 2011/05 - 2012/04, 361,000.
5. 運用互動學習與實境參與提升高中女性對無線網通科技之探索能力－揭開網路的面紗--以無線校園社群系統來探索網路的概念 (科學探索計畫)(2/2), NSC100-2515-S-027-003, 2011/05 - 2012/04, 363,000.
6. 運用互動學習與實境參與提升高中女性對無線網通科技之探索能力－應用無線通訊的互動科技增進女性科學教育課程之參與: 以中山女高為例(1/2), NSC99-2515-S-027-005, 2010/05 - 2011/04, 331,000.
7. 運用互動學習與實境參與提升高中女性對無線網通科技之探索能力－揭開網路的面紗--以無線校園社群系統來探索網路的概念 (科學探索計畫)(1/2), NSC99-2515-S-027-003, 2010/05 - 2011/04, 485,000.

(3) 產學合作

1. 3C 產品通用名稱及網路價格搜尋統計分析技術, 神腦國際, 2014/06 – 2014/08, 88,000, 主持人.
2. 電視購物商品資料與節目相關性分析技術, 資策會, 2014/05 – 2014/11, 200,000, 主持人.
3. 旅遊平台相關開發與測試, 麗行資訊, 2014/01 – 2014/06, 384,970, 共同主持人.
4. 社群鉅量旅遊資料蒐集與分析技術, 資策會, 2013/08 – 2013/12, 300,000, 主持人.
5. No-SQL 巨量資料存取技術, 聯成數網, 2010/08 – 2011/07, 主持人.

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 指導學生參與 102 年度第 2 梯次創新創業激勵計畫 晉級前 40 強 (40/211), FITI, 國家實驗研究院 (Sep. 2013)
2. 指導學生榮獲 第一屆 IPPR 技術創新暨產業應用獎佳作獎, 中華民國影像處理與圖形識別學會(15/62) (Aug. 2013)
3. 指導學生榮獲 100 學年度大學校院網路通訊軟體與創意應用競賽網際應用與服務組

第二名, 教育部 (Apr. 2011)

4. SocialNLP 2013-2015: The International Workshop on Natural Language Processing for Social Media
5. SocialCom 2012: 2012 ASE/IEEE International Conference on Social Computing
6. ISCE 2012-2015: The IEEE International Symposium on Consumer Electronics
7. ISI 2009-2015: The IEEE International Conference on Intelligence and Security Informatics
8. TAAI 2012-2014: Conference on Technologies and Applications of Artificial Intelligence

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

(a) 近五年內最具代表性之學理創新、應用技術突破 - 以社群網路探勘進行資訊過濾, 檢索, 與推薦.

(1) 以分散式內容檢索進行大規模近似複製偵測及追蹤:

我們整合資訊檢索以及網路技術, 以 P2P 架構提供有效的過濾與追蹤機制. 我們提出了一個分散式索引架構, 以便於進行典藏內容之檢索, 及複製偵測, 可有效降低數位內容非常散佈並同時保存珍貴資產. 未來將進一步應用於 Web 規模的資訊安全應用, 如: 內容保護, 病毒行銷, 以及商業智慧(business intelligence)等.

(2) 社群網路探勘與意見分析

我們利用社群媒體內容並整合結構資訊如: 回覆, 轉載, 按讚等, 以辨別出最具影響力的熱門主題以及使用者意見. 透過短文分類, 熱門主題偵測, 以及訊息影響力的分析, 我們能有效的估計特定領域, 如: 總統大選, 的意見傾向, 以進行趨勢預測.

(b) 協助產業發展績效

1. 聯成數網: 社群搜尋及巨量網路社群資料之存取技術.
2. 資策會: 旅遊資訊擷取與意見分析, 電視節目相關產品推薦等.
3. 法愛公德會: 法律文件檢索探勘, 判決書證據力分析.

(c) 國內外之成就與榮譽

(1) 國際受邀演講

1. Microblog Opinion Mining for Trend Analysis and Recommendation, School of Information Systems, Singapore Management University, Oct. 23, 2014.
2. Social Media Mining for Trending Topic Analysis, EITA-New Media 2013, Nov. 23-24, 2013.

(2) 國際合作

本人自 2011 年起與新加坡管理大學 Prof. Ee-Peng Lim 密切合作, 建立一套社群意見趨勢分析展示系統 (Palanteer-TW Election). 並於 2014 年 10 月受邀至新加坡管理大學為訪問教授.

(d) 在人才培育及研究團隊建立與服務方面的重要貢獻或成就

1. 近五年內已畢業五屆碩士生 16 名, 大學專題生 24 名, 其中 2013, 2011 年兩組大學專題 “Name Search”, “Similar Page Detection”分別榮獲校內專題競賽優等獎.
2. 研究生畢業後, 分別前往國內外各大相關產業任職研發工程師, 例如: Yahoo, 華碩, 華碩雲端, 威盛, 資拓宏宇, 趨勢科技等, 均有不錯的表現.
3. 本人在 101 年度榮獲校內資工系傑出教學獎, 以及電資學院教學優良獎, 並於 100 年度榮獲全校優良導師, 在教學與輔導方面受到肯定.

劉建宏助理教授

實驗 (研究) 室名稱：軟體工程實驗室

聯絡電話：(02) 2771-2171 分機 4252

e-mail：cliu@ntut.edu.tw

網址：http://www.ntut.edu.tw/~cliu

研究聚焦領域：☐ H：健康科技 ☑ I：智慧整合科技
☐ G：綠色科技 ☐ H：人文與創新元素

專長：1. 軟體工程 2. 軟體測試 3. 敏捷方法 4. 網頁與 APP 開發技術

1. 近年重要論文及著述

(a)期刊論文

1. Weng-Ming Chu, Koan-Yuh Chang, Chien-Yu Lu, Chang-Hung Hsu, Chien-Hung Liu, and Yung-Chia Hsiao, "A New Approach to Determine the Critical Path in Stochastic Activity Network," *Mathematical Problems in Engineering*, Vol. 2014, 2014, pp. 1-13. (SCI)
2. Chien-Hung Liu, Shu-Ling Chen, and Teng-Yi Huang, "Data Flow Analysis and Testing for OWL-S Semantic Web Service Compositions," *International Journal of Computational Sci-ence and Engineering (IJCSE)*, Vol. 8, No. 4, 2013, pp. 349-360. (EI)
3. Peng-Hua Chu, Nien-Lin Hsueh, Hong-Hsiang Chen, and Chien-Hung Liu, "A Test Case Re-factoring Approach for Pattern-based Software Development," *Software Quality Journal*, Volume 20, Issue 1, 2012, pp. 43-75. (SCI)

(b)研討會論文

1. Chien-Hung Liu, Shu-Ling Chen, and Huang-Ke Chen, "RobotDroid - A Keyword-Driven Testing Tool for Android Applications," In *Proceedings of 2014 International Computer Symposium (ICS)*, Taichung, Taiwan, December 12-14, 2014, pp. 376-385.
2. Chien-Hung Liu, Shu-Ling Chen, Hao-Yuan Lyua, and Chuan-Ming Liu, "A Cost-Benefit Analysis Process for Cloud-Based Parallelized Testing from the User's Perspective," In *Proceedings of the 4th International Conference on Engineering and Applied Science*, Sapporo, Japan, July 22-24 2014, pp. 837-845. (NSC102-2218-E-027-008)
3. Chien-Hung Liu, Chien-Yu Lu, Shan-Jen Cheng, Koan-Yuh Chang, Yung-Chia Hsiao, and Weng-Ming Chu, "Capture-Replay Testing for Android Applications," In *Proceedings of the 2014 International Symposium on Computer, Consumer and Control*, Taichung city, Taiwan, June 10-12 2014, pp. 1129-1132. (NSC102-2218-E-027-008)
4. Chien-Hung Liu, Shu-Ling Chen, and Hsien-Liang Lin, "Parallel Testing Strategies for Cloud Testing," In *Proceedings of the 2013 National Computer Symposium(Workshop on Software Engineering and Programming Language)*, Taichung city, Taiwan, Dec. 13-14 2013. (NSC102-2218-E- 027-008)
5. Chien-Hung Liu and Shu-Ling Chen, "Classifying Dynamic Pages for Supporting JSP-Based Web Application Testing," In *Proceedings of the 2013 2nd International Conference on Information Technology and Management Innovation (Applied Mechanics and Materials Vols. 411-414 (2013) pp 563-567)*, Zhuhai, China, July 23-24, 2013. (NSC 101-2221-E-027-067)
6. Chien-Hung Liu, Shu-Ling Chen, and Tien-Chi Huang, "A Model-Based Testing Tool for Embedded Software," In *Proceedings of the Sixth International Conference on Genetic and Evolutionary Computing*, Kitakyushu, Japan, August 25-28 2012, pp. 180-183.
7. Chien-Hung Liu, Shu-Ling Chen, and Hsien-Liang Lin, "A Framework for Cloud Testing based

on MapReduce," In *Proceedings of the 8th Taiwan Conference on Software Engineering (TCSE)*, Taipei, Taiwan, July 6-7 2012, pp. 160-165.

8. Chien-Hung Liu, Shu-Ling Chen, Jong Yih Kuo, and Teng-Yi Huang, "A Flow Graph-Based Test Model for OWL-S Web Services," In *Proceedings of the 2011 International Conference on Machine Learning and Cybernetics (ICMLC)*, Guilin, Guangxi, China, July 10-13 2011, pp. 897-902. (NSC 99-2220-E-027-008-)
9. Chien-Hung Liu, Shu-Ling Chen, and Wei-Yu Chen "Using Program Slicing for the Analysis of Embedded Software," In *Proceedings of the 2011 Joint Conference on 7th Taiwan Software Engineering (TCSE) and 22nd Object-Oriented Technology and Applications (OOTA)*, Taipei, Taiwan, July 8-9 2011, pp. 419-424. (NSC 99-2220-E-027-008-)
10. Chien-Hung Liu, Shu-Ling Chen, and Wei-Lun Jhu, "Change Impact Analysis for Object-Oriented Programs Evolved to Aspect-Oriented Programs," In *Proceedings of the 26th ACM Symposium on Applied Computing (SAC2011)*, TaiChung, Taiwan, March 21-24 2011, pp. 59-65.

(c)專利

(d)技術移轉

起訖日期	技轉名稱	技轉金額	授權機構/公司行號	所屬計畫案
2014-12-01~ 2015-11-30	軟體測試驗證發展子計畫二	23,100	財團法人台灣電子檢驗中心	軟體測試驗證發展
2013-02-01~ 2013-05-31	軟體系統開發品質改善計畫	34,620	威剛科技股份有限公司	

(e)專書及專章

(f)作品

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

1. 參與國科會自由軟體專案整合型計畫「整合式雲端測試：平台與服務之開」，獲國科會推薦為 2012 年績優團隊。
2. 主持國科會自由軟體專案個別型計畫「Android 軟體錄製與播放測試工具之研發」，獲國科會推薦為 2011 年績優獎。
3. 發表於 2013 年 National Computer Symposium 之論文 "Parallel Testing Strategies for Cloud Testing" 獲得大會 Workshop on Software Engineering and Programming Language 最佳論文。
4. 發表於 2012 年 The 8th Taiwan Conference on Software Engineering (TCSE) 之論文 "A Framework for Cloud Testing Based on MapReduce" 獲得大會優良論文。
5. 發表於 2011 年 Joint Conference on 7th Taiwan Software Engineering (TCSE) and 22nd Object-Oriented Technology and Applications (OOTA) 之論文 "Using Program Slicing for the Analysis of Embedded Software" 獲得大會優良論文。
6. 發表於 2010 年 Joint Conference on 21st Object-Oriented Technology and Applications (OOTA) and 6th Taiwan Software Engineering (TCSE) 之 "Data Collection and Analysis for Unit Testing Process" 獲得大會論文佳作。

江佩穎助理教授

實驗 (研究) 室名稱：互動圖學實驗室

聯絡電話：2771-2171 #4236

e-mail：peiyingc@csie.ntut.edu.tw

網址：http://imedia.csie.ntut.edu.tw/

研究聚焦領域：☐ H：健康科技 ☐ I：智慧整合科技
☐ G：綠色科技 ☐ H：人文與創新元素

專長：1. 計算機圖學 2. 人機互動 3._____ 4._____

9. 近年重要論文及著述

(a) 期刊論文

1. Pei-Ying Chiang, C.-C. Jay Kuo (2011, Jul). Voxel-based Shape Decomposition for Feature-Preserving 3D Thumbnail Creation. Journal of Visual Communication and Image Representation, Volume 23 Issue 1, January, 2012 ,Pages 1-11. (SCI).
2. Pei-Ying Chiang, May-chen Kuoa, Jessy Leea, C.-C. Jay Kuoa, Todd Richmondb, Milton Rosenbergb, Jeff Lundb, Kip Haynesb, Lindsay Armstrong (2010, Apr). Technologies and the Development of the Automated Metadata Indexing and Analysis (AMIA) System. Journal of Visual Communication and Image Representation, Volume 21, Issue 3, April 2010, Pages 200–209. (SCI).

(b) 研討會論文

1. Pei-Ying Chiang and Wei-Yu Li. 2014. Augmented reality paper clay making based on hand gesture recognition. In Proceedings of the 2nd ACM symposium on Spatial user interaction (SUI '14). ACM, New York, NY, USA, 144-144.
2. Chia-Jung Tsai, Chih-Yuan Yao, Pei-ying Chiang, Yu-Chi Lai, Ming-Te Chi, Hung-Kuo Chu, Yu-Shiang Wong, and Yu-Shuen Wang (2013, Jul). Adaptive manga re-layout on mobile device. SIGGRAPH '13 ACM SIGGRAPH 2013, Anaheim, CA, USA.
3. Pei-Ying Chiang, May-Chen Kuo, C.-C. Jay Kuo (2010, Nov). Feature- Preserving 3D Thumbnail Creation with Voxel-based Two-Phase Decomposition. Advances in Visual Computing, 6th International Symposium, ISVC 2010,, Las Vegas, NV, USA.
4. May-chen Kuo, Pei-Ying Chiang, C.-C. Jay Kuo (2010, Jun). Coding of motion capture data via temporal-domain sampling and spatial-domain vector quantization techniques. Proceedings of the 11th Pacific Rim conference on Advances in multimedia information processing, Taipei, Taiwan.
5. Pei-Ying Chiang, May-chen Kuo, Teri M. Silva, Edgar Evangelista, Milton Rosenberg and C. -C. Jay Kuo (2010, Jun). Feature-preserving 3D thumbnail creation via mesh decomposition and approximation. Proceedings of the 11th Pacific Rim conference on Advances in multimedia information processing, Taipei, Taiwan.
6. May-Chen Kuo, Pei-Ying Chiang, Jessy Lee, C.-C.Jay Kuo (2009, May). On-line lossless mocap data compression. ISCAS 2009. IEEE International Symposium on Circuits and Systems, 2009. , Taipei, Taiwan.
7. Pei-Ying Chiang, May-chen Kuo, Jessy Lee, and C.-C.Jay Kuo. (2009, May). WiiStick: Enhancing motion recognition capability for Wii systems. ISCAS 2009. IEEE International Symposium on Circuits and Systems, 2009., Taipei, Taiwan.

(c)專利

(d)技術移轉

1. 技轉案: 與太極影音股份有限公司共同開發之「漢宮畫師」

(e)專書及專章

(f)作品

10. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

- 參與教育部人才培育計畫（楊士萱教授主持）

9.4 光電工程系

呂海涵 教授
實驗 (研究) 室名稱：光纖通訊系統實驗室
聯絡電話：(02)2771-2171 ext. 4621
e-mail：hhlu@ntut.edu.tw
網址：http://www.cc.ntut.edu.tw/~hhlu/index.htm

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長：1.光纖通訊/光纖有線電視系統 2.光纖/微波傳輸系統 3.可見光通訊系統4.分波多工被動光纖網路系統

近年重要論文著述、學理創新及應用技術突破

呂海涵教授近五年已發表 58 篇 SCI 期刊論文(包含 *Optics Express, Optics Letters, IEEE/OSA Journal of Lightwave Technology, IEEE Journal of Selected Topics in Quantum Electronics, IEEE Photonics Journal, IEEE Photonic Technology Letters, IEEE Communication Letters, Optics Communications* …)，其中 41 篇其 Impact Factor 於該領域論文排名為前 25% (*Optics Express* 18 篇(Rank: 6/83)、*IEEE Journal of Selected Topics in Quantum Electronics* 1 篇(Rank: 8/83)、*Optics Letters* 11 篇(Rank: 10/83)、*IEEE/OSA Journal of Lightwave Technology* 6 篇(Rank: 16/83)、*IEEE Photonics Journal* 2 篇(Rank: 19/83)、*IEEE Photonic Technology Letters* 3 篇(Rank: 20/83)、*IEEE Transactions on Microwave Theory and Techniques* 1 篇(Rank: 30/248))。值得一提的是在近五年內可見光通訊(Visible Light Communication)、非可見光通訊(InVisible Light Communication)及光纖微波、光纖毫米波(Fiber-Wireless Convergence, Radio-over-Fiber)研究上就有 46 篇光電學門指標性 SCI 國際期刊論文(*Optics Express* 18 篇、*IEEE Journal of Selected Topics in Quantum Electronics* 1 篇、*Optics Letters* 11 篇、*IEEE/OSA Journal of Lightwave Technology* 6 篇、*IEEE Photonics Journal* 2 篇、*IEEE Photonic Technology Letters* 3 篇、*IEEE Transactions on Microwave Theory and Techniques* 1 篇、*Optics Communications* 4 篇)，代表著計畫主持人在可見光通訊、非可見光通訊及光纖微波、光纖毫米波相關研究領域擁有深入的研究與探討。

此外 2009 年至今個人榮獲 **IEEE Senior Member Review Panel** (2015)、**SPIE Fellow** (Society for Optics and Photonics)(2014)、**國際傑出發明家學術國光獎章**(2014)、103 年資訊月『**百大創新產品獎**』(超高速率(14.4 Gbps)可見光通訊傳輸系統)、**中國工程師學會傑出工程教授獎**(2013)、**IET Fellow** (*The Institution of Engineering and Technology*)(2009)、**OSA Senior Member** (*Optical Society of America*)(2012)、**IEEE Senior Member** (*The Institute of Electrical and Electronics Engineering*) (2008)、國立台北科技大學三任「**特聘教授**」(8/2006-7/2009、8/2009-7/2012、2/2014-1/2017)、**教育部特殊優秀人才彈性薪資** 50 萬元殊榮(101/8～104/7)、**科技部特殊優秀人才彈性薪資**、所帶領主持之團隊研究成果榮獲科技部**光電工程學門采風報導-光電工程學門 Breakthrough 2** [工程科技通訊 133 期(102 年 4 月刊)「電資通訊領域專刊」]、科技部工程司 98 及 99 年度技術及知識**應用型產學合作計畫成果發表電資通訊領域海報展示傑出獎**…等多項獎項。

2012 年 4 月榮獲 *The 7th Asia-Pacific Microwave Photonics Conference (APMP)*國際會議邀請為 ***Invited Speaker & Session Chair***；2013 年 11 月榮獲 *EITC-New Media 2013, Workshop 2*

(W2): Broadband and Wireless Computing, Network Technologies, Services and Applications 邀請為 ***Invited Speaker***；2014 年 11 月榮獲 *Asia-Pacific Microwave Photonics Conference (APMP)*國際會議邀請為 ***Technical Program Sub-Committee***；2014 年 12 月榮獲 *The 4th International Conference on Electronics, Communications and Networks (CECNet2014)* 國際會議邀請為 ***Technical Program Committee***；及 2015 年榮獲 *Optical Communications (OC) Symposium on 4th Photonics Global Conference (PGC 2015)*、*4th International Symposium on Next-Generation Electronics (IEEE ISNE 2015)*邀請為 ***Invited Speaker***；代表著呂教授及其研究團隊的研究成果受到世界矚目，茲將研究成果與貢獻整理如下：

1. 可見光通訊 (visible light communication; VLC) 系統是世界上目前許多光通訊研究團隊所努力研發突破的亮點主題，而高亮度 白光 LED/RGB LED 則是各國光通訊研究團隊用來作為可見光通訊系統的光源 (Light Source)。高亮度 白光 LED/RGB LED 除了提供顯示及照明的功能之外，更進一步的可以提供自由空間 (Free-Space) 光信號通訊的功能。可見光通訊系統可以用來取代 RF 無線通訊傳輸系統，不但可以減少及防止電磁波的干擾，且在許多禁止使用 RF 電磁波的場所(諸如醫院、飛機……)，可見光通訊系統可以彌補 RF 無線通訊的不便。**「高傳輸速率」及「長距離自由空間傳輸」**是可見光通訊系統所努力追求的目標，每一個可見光通訊研究團隊都希望能在這兩個目標上有所革命性的突破。然而受限於 白光 LED/RGB LED 光源頻寬及功率的限制，「傳輸速率」及「自由空間傳輸距離」在各個研究團隊的努力研發下都已達到極限值 (~3.75Gbps/2.5m)。為了能夠突破「傳輸速率」及「自由空間傳輸距離」兩個極限瓶頸，計畫主持人及其所帶領之研究團隊選擇紅光雷射光作為可見光通訊系統的光源，**這是世界上第一個研究團隊提出利用單一顆紅光雷射(VCSEL, 680 nm)來建構超高速率可見光通訊傳輸系統，不但傳輸速率可高達 10Gbps、且自由空間傳輸距離亦可達 6m 之遠；突破了「傳輸速率」及「自由空間傳輸距離」兩個極限瓶頸、遠遠超過了 Optical WiMAX 的規格需求**。舉例來說一部 1.5 小時的電影容量大約 4.5G，在超高速率 10Gbps 可見光的傳輸下僅需約 0.45 秒的時間即可下載完成。各個可見光通訊研發團隊所競爭追求的不外乎就是更高的傳輸速率及更遠的自由空間傳輸距離，哪個團隊能在這兩方面有所突破、就能在可見光通訊研究領域佔有一席之地。此一研究主要貢獻在於提出一全新、具創意且具可行性之超高速率可見光通訊傳輸系統，突破了高亮度白光 LED 光源先天上條件的限制，讓可見光通訊系統具創新與實用之價值。

2. 近年來，網際網路 (Internet) 與全球資訊通信基礎建設 (Global Information Infrastructure) 在世界上發展中國家及先進國家的迅速發展下，帶動諸如高畫質影像、高速高容量資料傳輸、行動寬頻、巨資資料、及雲端服務等高速寬頻網路服務的熱潮，在 3C 整合及多媒體應用的趨勢下，對於網路傳輸頻寬的需求也快速增加，同時加快邁入下世代 5G 行動通訊之需求，更突顯出網路光纖化與高速率無線通訊、整合寬頻光纖固網與 5G 行動通訊、室內寬頻接取系統，實現光世代的高速寬頻整合通訊網路系統的重要性、迫切性與必然性。計畫主持人及其研究團隊應用 PM 多波長產生機制，產生超寬頻光源(BLS)，並加入 OSNR 改善機制優化系統傳輸信號品質，同時應用 Optical IL 做為倍頻暨分波多工機制，使系統達到二倍頻及四倍頻之效果，系統最後一哩產生 5Gbps/30GHz MW、5Gbps/60GHz MMW 訊息，訂定下世代 5G 行動通訊傳輸的基礎研究，另結合雙通道之超高速可見雷射光通訊系統，提出世界上第一個整合寬頻光纖固網與 MWMMW 行動通訊、室內可見光寬頻接取系統，使系統更具競爭優勢及延展性。

3. 可見雷射光相較於 LED 具有高頻寬、高指向性等優勢，適用於長距離、高傳輸速率之運用，加上 MIMO 多工與 16-QAM-OFDM 調變技術，使可見雷射光通訊傳輸速率高達 100Gbps，

對應即將到來的高速資料通訊與 Big Data 雲端儲存的運用及挑戰；雲端機房除了具備高速資料傳輸之外，同時要面對的就是機房負重及溫度的問題，由於一般機房所要求平均可承受的重量約每平方公尺 500 公斤左右，一旦超過了這個重量就必須進行地板結構的補強，才能避開地板下陷的問題，另於機房能量消耗上，溫度控制(製冷)占了總能量消耗 25%；如將可見雷射光通訊運用於雲端機房，取代傳統電纜進行資料傳遞，使用自由空間進行光信號傳輸，對於使用電纜於重量及高速資料傳輸上所產生的熱源等問題也就迎刃而解。有鑑於此，計畫主持人及其研究團隊累積先前的紅光可見光雷射及 MIMO 建構超高速率可見光通訊傳輸系統研究成果與能量，提出利用 8 顆紅光雷射(VCSELs, 670-680 nm)及 MIMO 多工技術，藉由自由空間 WDM 光分波多工技術傳送 12.5Gbps/5GHz 16-QAM-OFDM 信號，成功地建構自由空間 8 通道可見光分波多工超高速率可見光通訊傳輸系統 (12.5Gbps/Channel × 8Channels = 100 Gbps)。**這是世界上第一個研究團隊提出利用超高速率可見光通訊傳輸系統於雲端機房，不但傳輸速率可高達 100Gbps、且自由空間傳輸距離亦可達 5m 之遠；**由於可見雷射光通訊具備高速資料傳輸之外，同時也能解決雲端機房負重及溫度上能源消耗之問題，在新興技術的應用端深具潛力，同時需搭配有效的光纖網路以形成完整的配套架構，對應即將到來的高速資料通訊、Big Data 雲端儲存與光通訊時代的運用及挑戰。

4. 光纖通訊技術隨著人類對資訊之需求日益增加，對光纖所提供之頻寬足以決定網際網路的成長。預計於不久的將來，頻寬的需求將會提升至每秒十億位元的速度來傳輸高速之數據和視頻服務運用至光纖接取網路。光纖上網(FTTX)、光纖微波(RoF)及光纖毫米波(MMW)系統將會是最有希望成為通訊整合技術應用在無線與有線之光接取網路以滿足使用者之需求服務。將數位基頻(BB)、RF 微波(MW)、及 RF 毫米波(MMW)信號應用在分波多工傳輸系統上將會帶來很多益處，包括高效能、寬頻服務範圍及管理上的穩定性。計畫主持人及其研究團隊更利用 PM 產生多波長，再結合 IM 調變產生基頻 BB/微波 MW/毫米波 MMW 訊號，架構運用 PM 特性產生多波長機制結合 IM 調變 10GHz/1.25Gbps 訊號，進入 OSNR 改善機制經 20 公里後分別由 FBG 結合光循環器產出基頻 BB/微波 MW/毫米波 MMW 訊號，而上行則在由 IM 調變載入 1.25Gbps 訊號經 20 公里單膜光纖上傳，以單一顆雷射結合 PM 多波長機制取代需多顆雷射才能建構之混合式多頻傳輸系統，大大降低了系統建構上之成本及複雜度。同時應用 Direct-Detection 技術於基頻 BB/微波 MW/毫米波 MMW 傳輸系統中，使系統解調微波 MW/毫米波 MMW 信號時毋須用到昂貴、精緻的 RF 相關元件（eg.，local oscillator），提出世界上第一個於 接收端接收/解調 光信號最具效率及競爭優勢的解調架構。

5. 可見光通訊(Visible Light Communications; VLC) 及 LiFi (Optical WiFi)是近年來在光通訊領域中於自由空間通訊相當重要的研究主題；計畫主持人及其所帶領之研究團隊綜合多年來對光通訊傳輸系統之研究及了解，構思建構高速 LiFi 可見光通訊傳輸系統。不同於典型的高亮度白光 LED 可見光光源，我們使用了 Laser Pointer Lasers (LPLs)的紅光雷射(671nm)及綠光雷射(532nm)，以 WDM 光分波多工架構分別傳輸 500Mbps 的傳輸速率(500Mbps/λ × 2λ = 1Gbps)，**研究結果我們發現不但傳輸指向性高、而且傳輸距離可達 10m 之遠；更重要的是 LPLs 價格相當便宜、可大幅增加建構系統之競爭優勢。在可見光通訊傳輸系統研究領域上實屬創舉，此特點為世界上第一個研究團隊所提出，相關研究成果已於 2012 年 5 月份發表論文於 *Optics Express* 國際知名期刊上。該篇 Paper 不但榮獲 *Optics Express* 2012 年 5 月 Top Downloads 第一名之殊榮，亦為國際多篇相關雜誌/媒體所競相報導，**讓台灣研究團隊在可見光通訊學術領域上的表現獲得了國際的高度肯定與重視。

應用技術突破及協助產業發展績效

呂海涵教授團隊的研發技術不斷的創新及突破，近年共計獲得 **7 項中華民國發明**專利及 **13 項專利審核中**，進行光電工程與通訊科技跨領域的研發，並進一步將學術創新研發成果與產業界需求結合，不僅為國內光電領域開創成功的典範，同時對於國內光通訊產業有著相當大的貢獻、尤其是在可見光通訊領域。呂教授所帶領的研發團隊開發出 14.4Gbps 超高速率可見光通訊系統之關鍵技術，不但被國外多家知名刊物所報導(New Scientist、Advances in Engineering、…)，更重要的是該團隊已將部份成果技術移轉給國內光通訊相關產業公司、歷年來**技轉金額共達 320 萬元**。並透過科技部所予以支持的『光纖有線電視與光通訊產學聯盟』平台運作，垂直整合光通訊產業上、中、下游，是一項成功的學術研發及產學合作典範。

『光纖有線電視與光通訊產學聯盟』以光通訊科技領域研究技術為主軸，搭配技術理論導向產業研發與實務經驗，垂直整合及橫向交流之培訓方式，實現支援聯盟會員產業技術的升級。經由計畫團隊舉辦聯合專題講座、研討會、競賽等各項產官學研交流活動，建立多元化研習機制，使聯盟會員能達到多領域實務整合創新之目的，更藉由科技部對產學技術聯盟之大力推動，使學術研究團隊多年累積之研發能量得以有效運用，將已建立之核心技術與相關之上、中、下游產業界建構技術合作聯盟，更進一步協助產業界提昇競爭能力及產品價值。

任貽均教授

實驗 (研究) 室名稱：光學薄膜實驗室

聯絡電話：02-27712171 轉 4626

e-mail：jyjun@ntut.edu.tw

網址：http://wwwoe.web.ntut.edu.tw/files/11-1045-3094-1.php

研究聚焦領域：□ H：健康科技　□ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長

Optical thin film theory
Nano-sculptured thin films
Ellipsometry and polarized light
Surface plasmon
Scattering and effective medium approximation
FDTD simulation
Electrodynamics of metamaterials

1. 近五年成果

(a) 期刊論文

(1) Yi-Fan Huang, **Yi-Jun Jen**, Li-Chyong Chen, Kuei-Hsien Chen, and Surojit Chattopadhyay, "Design for Approaching Cicada-Wing Reflectance in Low- and High-Index Biomimetic Nanostructures," ACS Nano, 9, 1, 301-311 (2015)

(2) **Yi-Jun Jen**, Meng-Jie Lin, Ci-Yao Jheng, Wei-Chih Liu, "Optical coating on nano-optical antennas to enhance directional radiation," Journal of Nanophotonics, 9, 1, 093595 (2015)

(3) **Yi-Jun Jen**, Wei-Chih Liu, Jung-Hui Chao, Jyong-Wei Huang, Yuan-Tai Chang," Strong light coupling effect for a glancing-deposited silver," Nanoscale Research Letters, 9, 567 (2014)

(4) **Yi-Jun Jen**, Meng-Jie Lin, Yuan-Fong Chau, Ci-Yao Jheng, " Deposition of Ta2O5 upon silver nanorods as an ultra-thin light absorber," Thin Solid Films, 567, 38-46 (2014)

(5) **Yi-Jun Jen**, Chien-Chi Chen, and Ci-Yao Jheng, "Aluminum-jointed silicon dioxide octagon nanohelix array with desired complex refractive index" Optics Letters, 39, 12 (2014)

(6) Chuen-Lin Tien, Tsai-Wei Lin, Hung-Da Tzeng, **Yi-Jun Jen**, and Ming-Chung Lin, " Temperature-dependent optical and mechanical properties of obliquely deposited MgF2 thin films" Indian Journal

of Pure & Applied Physics, 52, 117-123 (2014)

(7) Ching-Wei Yu, Yung-Hsiang Wang, **Yi-Jun Jen**, ”Nano-Sculptured Metal Films as Surface Enhanced Raman Spectroscopy (SERS) Sensor” 科儀新知雙月刊, 197, 14-22 (2013)

(8) Abraham Mario Tapilouw, Liang-Chia Chen, **Yi-Jun Jen**, Shyh-Tsong Lin, and Sheng-Lih Yeh, “Orthogonal polarization Mirau interferometer using reflective-type waveplate” Optics Letters, 38, 14, 2502-2504 (2013)

(9) **Yi-Jun Jen**, Meng-Jie Lin, Huang-Ming Wu, Hung-Sheng Liao, and Jia-Wei Dai, “An interference coating of metamaterial as an ultrathin light absorber in the violet-to-infrared regime” Optics Express, 21, 8, 10259-10268 (2013)

(10) **Yi-Jun Jen**, Akhlesh Lakhtakia, Meng-Jie Lin, Wei-Hao Wang, Huang-Ming Wu and Sheng Liao, “Metal/dielectric/metal sandwich film for broadband reflection reduction” Scientific Reports, 3 (2013)

(11) **Yi-Jun Jen**, Motofumi Suzuki, Yung-Hsiang Wang and Meng-Jie Lin, “Near-field simulation of obliquely deposited surface-enhanced Raman scattering substrates” Journal of Applied Physics, 112, 11, 113111 (2012)

(12) **Yi-Jun Jen**, Meng-Jie Lin, Shun-Kai Yu, Chien-Chi Chen, “Extended Broadband Achromatic Reflective-type Waveplate” Optics Letters, 37, 20, 4296-4298 (2012)

(13) **Yi-Jun Jen**, Akhlesh Lakhtakia, Ching-Wei Yu, Jheng-Jie Jhou, Wei-Hao Wang, Meng-Jie Lin, Huang-Ming Wu and Hung-Sheng Liao, “Comment on ‘Silver/silicon dioxide/silver sandwich films in the blue-to-red spectral regime with negative-real refractive index” Applied Physics Letters, 101, 15, 156101(2012)

(14) Chia-Feng Lin, **Yi-Jun Jen**, “Use of Ta2O5 biaxial thin film as a high-efficiency polarization converter” Journal of Nanophotonics, 6, 1, 061507 (2012)

(15) **Yi-Jun Jen**, Meng-Jie Lin, Ching-Wei Yu, Chia-Feng Lin, Shun-Kai Yu, “Design of an achromatic optical coating waveplate” Journal of Nanophotonics, 6, 1, 061501 (2012)

(16) Cheng-Ying Chen, Jun-Han Huang, Kun-Yu Lai, **Yi-Jun Jen**, Chuan-Pu Liu, and Jr-Hau He, “Giant Optical Anisotropy of Oblique-Aligned ZnO Nanowire Arrays” Optics Express, 20, 3, 2015-2024 (2012)

(17) **Yi-Jun Jen**, Meng-Jie Lin and Akhlesh Lakhtakia, “Bio-inspired achromatic waveplates” SPIE Newsroom (2011)

(18) **Yi-Jun Jen** and Ching-Wei Yu, ” Optical configuration for unpolarized ultra-long-range surface-plasmon-polariton waves” applied optics, 50, 9, c154-C158 (2011)

(19) **Yi-Jun Jen**, Akhlesh Lakhtakia, Ching-Wei Yu, Jheng-Jie Jhou, Wei-Hao Wang, Meng-Jie Lin, Huang-Ming Wu and Hung-Sheng Liao, “Silver/silicon dioxide/silver sandwich films in the blue-to-red spectral regime with negative-real refractive index” Applied Physics Letters, 99, 18, 181117 (2011)

(20) **Yi-Jun Jen**, “Commentary: Arbitrarily polarized long-range surface-plasmon-polariton waves”

Journal of Nanophotonics, 5, 050304 (2011)

(21) **Yi-Jun Jen**, Chia-Feng Lin, and Meng-Jie Lin, "Slanted S-shaped nano-columnar thin films for broadband and wide-angle polarization conversion" Optical Materials Express, 1, 525-534 (2011)

(22) **Yi-Jun Jen**, Akhlesh Lakhtakia, Ching-Wei Yu, Chia-Feng Lin, Meng-Jie Lin, Shih-Hao Wang & Jyun-Rong Lai, "Bio-inspired Achromatic Waveplates for Visible Light" Nature Communications, 363, 1-5 (2011)

(23) **Yi-Jun Jen**, Ching-Wei Yu, Yu-Hsiung Wang, Jheng-Jie Jhou, "Shape effect on the real parts of equivalent permeability of chevron thin films of silver" Journal of Nanophotonics, 5, 051507-9 (2011)

(24) **Yi-Jun Jen**, Meng-Jie Lin, Wen-Pao Tsai, "Three-layered thin film system for broadband polarization conversion reflectance" Journal of Nanophotonics, 5, 051508-6 (2011)

(25) **Yi-Jun Jen**, Chih-Hui Chen, and Ching-Wei Yu, "Deposited metamaterial thin film with negative refractive index and permeability in the visible regime" Optics Letters, 36, 6, 1014-1016 (2011)

(b) 研討會論文

(1) Gun-Han Lyu, **Yi-Jun Jen**, " Negative index of a symmetrical metal-dielectric film stack" OPT2014 S1002-O005 (2014)

(2) Jyong-Wei Huang, **Yi-Jun Jen**, " Nanosculptured silver-jointed silicon dioxide otagon nano-helix array" OPT2014 S1005-O004 (2014)

(3) Chien-Hoa Tseng, **Yi-Jun Jen**, " Glancing angle deposited Ag structured thin film using substrate cooling method" OPT2014 P1002-P026 (2014)

(4) **Yi-Jun Jen**, Meng-Jie Lin, Ci-Yao Jheng, Wei-Chih Liu, "Local field enhancement effects for dielectric coating on silver nanorod arrays," Proc. of SPIE Vol. 9172-18 (2014)

(5) **Yi-Jun Jen**, Wei-Chih Liu, Ci-Yao Jheng, Chih-Chieh Yang, "Design a symmetrical film stack as a negative index metamaterial," Proc. of SPIE Vol. 9172-3 (2014)

(6) **Yi-Jun Jen**, Jia-Wei Dai, Jung-Hui Chao, "Broadband and wide angle light absorption for an aluminum nanorod" Proc. SPIE 8818, (2013)

(7) **Yi-Jun Jen**, Meng-Jie Lin, Jia-Wei Dai, "Optical property of obliquely deposited dielectric films upon a meatamaterial thin film" Proc. SPIE 8818, (2013)

(8) **Yi-Jun Jen**, Hung-Sheng Liao, Meng-Jie Lin, "Size effect of aluminum / silicon-dioxide / aluminum nanosandwich films for negative optical properties" Proc. SPIE 8818, (2013)

(9) **Yi-Jun Jen**, " Oblique angle deposited optical thin films and their applications" OPT2013 S1004-I001 (2013)

(10) Yi-Jun Jen, Hung-Sheng Liao, Meng-Jie Lin, " A nanosandwich thin film with double negative" OPT2013 P1002-P022 (2013)

(11) Ching-Wei Yu, Xuan Li, and **Yi-Jun Jen**, "Rapid detection of paraquat using surface-

enhanced Raman scattering (SERS) sensor" OPT2013 P1001-P013 (2013)

(12) **Yi-Jun Jen**, Meng-Jie Lin, Yuan-Fong Chau, Ci-Yao Jheng, "Numerically investigation of an ultra-thin light absorber composed of an Ag nanorod array covered with Ta2O5 upon each rod" OPT'2013 P1002-P026 (2013)

(13) **Yi-Jun Jen**, Yung-Hsiang Wang, Ching-Wei Yu, and Meng-Jie Lin, "Using oblique angle deposition technique to fabricate silver-pillar arrays for Surface-enhanced Raman Scattering" OPT'2012

(14) **Yi-Jun Jen** and Jung-Hui Chao, "Broadband light absorption for a silver nanorod array arranged in Kretschmann configuration" OPT'2012

(15) **Yi-Jun Jen**, Meng-Jie Lin, Huang-Ming Wu, Jia-Wei Dai, " Optical property of a deposited aluminum nanorod array" OPT'2012

(16) **Yi-Jun Jen**, Shih-Hao Wang, Chia-Feng Lin, and Meng-Jie Lin, "Using a single anisotropic thin film as a phase retarder for oblique incident wave" Proc. SPIE 8104, (2011) (oral)

(17) **Yi-Jun Jen**, Ching-Wei Yu, Meng-Jie Lin, and Chia-Feng Lin, "Optical birefringence in a bideposited symmetric nanorod arrays" Proc. SPIE 8104, (2011) (oral)

(18) **Yi-Jun Jen**, Jheng-Jie Jhou, and Ching-Wei Yu, "An investigation on magnetic responses in Ag-SiO2-Ag nanosandwich structures" Proc. SPIE 8104, (2011) (oral)

(19) **Yi-Jun Jen**, Chia-Feng Lin, Tai-Hung Yu, and Chun-Jung Lai, "Anisotropic optical property of an asymmetric bideposition Ta2O5 film: fabrication and measurement" Proc. SPIE 8104, (2011)

(20) **Yi-Jun Jen**, Wei-Hao Wang, and Ching-Wei Yu, "Study on magnetic metamaterials of aluminum nanostructures in the visible range" Proc. of SPIE 8104, (2011)

(c) 專利

(1) **Yi-Jun Jen**, Optical configuration for generating polarization conversion. (Taiwan)

(2) **Yi-Jun Jen**, Optical configuration for generating polarization conversion. (USA)

(3) **Yi-Jun Jen**, 具非均向性薄膜的低色差相位延遲器及其製作方法, filed and Pending.(USA)

(4) **Yi-Jun Jen**, 可增強光線中某一偏極態之光學系統與具有此系統之光源系統, filed and pending.(USA)

(5) **Yi-Jun Jen**, 可產生偏極轉換之光學結構, filed and pending

(6) **Yi-Jun Jen**, 反射式相位延遲器及包含該反射式相位延遲器之半導體發光元件研製技術 (Taiwan)

(d) 技術移轉

(1) 移轉單位: 晶元光電，反射式相位延遲器及包含該反射式相位延遲器之半導體發光元件研製技術 2014-03-01 2015-2-28

(2) 移轉單位: 汎鍶科藝，表面增強拉曼光譜(SERS)感測基板、及其製造方法 2012-11-20 2013-11-19

(e) 作品

i. 2015 台北國際光電展 光電科技工業協進會 2015-06-16

ii. 2014 台北國際光電展 光電科技工業協進會 2014-06-17

iii. 2013 台北國際光電展 光電科技工業協進會 2013-06-18

iv. 2012 年台北國際發明展暨技術交易展 南臺科技大學 2012-09-20

v. 2012 年台北國際光電週 光電科技工業協進會 2012-06-19

(f)研發與產學合作計畫

科技部

(1) 102 科技部研究計畫 "運用超穎材料之製鍍技術於新穎光學元件之開發" (102-2221-E-027-096-MY3)

(2) 101 科技部研究計畫，學研合作計畫-綠色電漿子奈米光電子發展與應用(3/3)"(101-3113-P-002-021)

(3) 100 科技部研究計畫 "學研合作計畫-綠色電漿子奈米光電子發展與應用(2/3)" (100-2120-M-002-012)

(4) 99 科技部研究計畫 "學研合作計畫-綠色電漿子奈米光電子發展與應用(1/3)" (99-2120-M-002-012)

(5) 99 科技部研究計畫 "負折射率光學薄膜之研製、量測與應用" (99-2221-E-027-043-MY3)

產學合作計畫

(1) 委託單位:汎鍶科藝，SERS 結構製程委託 2015-04-01 2015-09-30

(2) 委託單位:汎鍶科藝，表面增強拉曼(SERS)基板製程委託 2013-10-01 2014-03-31

(3) 委託單位:晶元光電，發光二極體內反射式波板之鍍製技術開發與發光偏極態之量測評估 2014-03-01 2015-02-28

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

(1) Invited Speaker in the SPIE Optics & Photonics nanostructured thin films VII, San Diego, USA(2014)

(2) Invited Speaker in the 23rd Int'l Optoelectronics Exposition, Taipei (2014)

(3) Invited Speaker in the 22nd Int'l Optoelectronics Exposition, Taipei(2013)

(4) Invited Speaker in the Nanovision Symposium, Shizuoka University, Japan (2013)

(5) Invited Speaker in the Progress In Electromagnetics Research Symposium, Taipei, Taiwan (2013)

(6) Invited Speaker in the Optics & Photonics Taiwan International Conference, National Central University, Taiwan (2013)

(7) Invited Speaker in the Nanovision Symposium, Shizuoka University, Japan(2011)

(8) Invited Speaker in the International Photonics Conference, National Cheng Kung University, Tainan Taiwan (2011)

(i) 其他成果展示

(1) SPIE Fellow(2014~)

(2) SPIE senior member(2010~)

(3) Conference Chair in Nanostructured Thin Films, SPIE Optics+Photonics (2011-2013)

(4) Session Chair in Nanostructured Thin Films, SPIE Optics+Photonics (2011-2013)

(5) Committee Member in Nanostructured Thin Films, SPIE Optics+Photonics (2014)

(6) SPIE Scholarship committee member(2012~)

(7) Associate Editor of Journal of Nanophotonics(2012~)

2. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

甲、 最具代表性研究成果

i. **Yi-Jun Jen**, Chien-Chi Chen, and Ci-Yao Jheng(2014), Aluminum-jointed silicon dioxide octagon nanohelix array with desired complex refractive index, Optics Letters, 39, 12 (SCI, Impact Factor:3.179)

ii. **Yi-Jun Jen**, Akhlesh Lakhtakia, Meng-Jie Lin, Wei-Hao Wang, Huang-Ming, Hung-Sheng Liao (2013), Metal/dielectric/metal sandwich film for broadband reflection reduction, Scientific Reports 3, Article number: 1672 (SCI, Impact Factor:5.078) Citations: 9.

iii. **Yi-Jun Jen**, Akhlesh Lakhtakis, Ching-Wei Yu, Chia-Feng Lin, Meng-Jie Lin, Shih-Hao Wang and Jyun-Rong Lai, (2011), Bio-inspired Achromatic Waveplates for Visible Light, Nat. Commun 2, 1-5.(SCI, Impact Factor:10.015), Citations: 25

iv. **Yi-Jun Jen**, Chih-Hui Chen and Ching-Wei Yu, (2011), Deposited metamaterial thin film with negative refractive index and permeability in visible regime, Opt. Lett. 36, 1014-1016. (SCI, Impact Factor:3.385), Citations: 16

v. **Yi-Jun Jen**, A. Lakhtakia, Ching-Wei Yu, and Chin-Te Lin, (2009), Vapor-deposited thin films with negative real refractive index in the visible regime, Opt. Express 17, 7784. (SCI Impact Factor: 3.546), Citations: 48.

乙、 研究成果之個人之重要貢獻

i. 研製負折射率薄膜並在可見光範圍觀察負折射率現象，最低波長為 532nm 為世界最低之紀錄，本研究並獲得 Optics.org News, SPIE newsroom, Optical Future, Technology published by MIT, Voice of progress 等國際媒體介紹。

ii. 激發長程表面電漿，提出多層薄膜之設計方法，可將可見光波長之電磁波偶合至金屬層並傳播達一公分之遠，並可突破偏極態之限制，未來在生醫感測尚有極大應用。

iii. 研製非均向性光學薄膜，並應用於偏極態的調製上，目前已可研製廣波域以及 wideangle 之偏極轉換器，此一轉換器可搭配偏極分光器形成一完美的偏極器，在未來顯示器以及投影機上扮演節能的關鍵性角色。

由螳螂蝦眼的結構激發靈感，進而利用斜向沈積技術，成功製鍍大面積在可見光波段之消色差波板，提供不隨波長改變的相位延遲,可應用於顯示科技以及光資訊系統上。實際製鍍 3 個週期的多層膜結構，並且量測在可見光波段之穿透率與相位延遲，其相位延遲為 10.41 ± 1.16 度，另外也提出 23 個週期多層膜結構之設計其相位延遲為 89.33 ± 6.83 度，此研究成果已發表於國際期刊 Nature communications。

林世聰教授

實驗 (研究) 室名稱：光電精密量測實驗室
聯絡電話：(02)27712171 ext.4629
e-mail：f10402@ntut.edu.tw
網址：http://eo.ntut.edu.tw/files/11-1045-3096-1.php
專長

1. 光學量測系統之光機設計	2. 光電精密量測	3. 實驗力學	4.

3. 近五年成果

(a) 期刊論文

1. H. X. Trịnh, S. T. Lin, L. C. Chen, and S. L. Yeh, “Polarization phase-shifting Newton interferometer without errors caused by polarization crosstalk,” Sensors and Actuators A: Physical, 220, 243-248(2014). (SCI)
2. L. C. Chen, M. T. Le, D. C. Phuc, and S. T. Lin, “In-situ volumetric topography of IC chips for defect detection using infrared confocal measurement with active structure light,” Meas. Sci. Technol. 25, 094013 (8pp) (2014). (SCI)
3. A. M. Tapilouw, L. C. Chen, Y. J. Jen, S. T. Lin, and S. L. Yeh, “Orthogonal polarization Mirau interferometer using reflective-type waveplate,” Opt. Letters, 38, 2502-2504 (2013).
4. S. T. Lin, S. L. Yeh, Y. C. Wang, and M. Z. Chen, “Laser profilometer using a Fabry-Perot etalon and an objective,” Sensors and Actuators A : Physical, 203, 47-51(2013)
5. S. L. Yeh and S. T. Lin, “Grating-dot two-dimensional barcode patterns with extra binary data for encoding secret information,” J. Opt., 15, 025404(4pp) (2013). (SCI)
6. S. L. Yeh and S. T. Lin, “Identifying a dot-matrix hologram with the fringe-overlapping phenomena of grating dots,” Opt. Commun., 285, 2545 – 2548 (2012).
7. S. T. Lin, S. L. Yeh, and M. H. Hxieh, “Broadband light source shearing interferometer using Savart plate and angular scanning technique,” Opt. Letters, 37, 1907-1909 (2012).
8. S. T. Lin, L. C. Chen, S. L. Yeh, H. X. Trịnh, and H. P. Chen, “Polarization phase-shifting Newton interferometer for plane optical surface measurements,” Opt. Letter, 37, 467-469 (2012).
9. S. T. Lin, S. L. Yeh, C. S. Chiu, and M. S. Huang, “A calibrator based on the use of low-coherent light source straightness interferometer and compensation method,” Optics Express, 19 (22), 21929-21937 (2011). (SCI).
10. S. L. Yeh, S. T. Lin, and M. W. Wu, “A diffractive barcode using diffusion-dot lines to form intersected bright bars with different orientations,” J. Opt., 12, 115601(6pp) (2010). (SCI)
11. S. T. Lin, S. L. Yeh, and Z. F. Lin, “Angular probe based on using Fabry-Perot etalon and scanning technique,” Optics Express, 18 (3), 1794-1800 (2010). (SCI).
12. S. L. Yeh and S. T. Lin, "Identifying a dot-matrix hologram by checking the intersecting angles of its gratings," Optics Communications, 283, 243–248 (2010). (SCI).

13. L. C. Chen, A. M. Tapilouw, S. L. Yeh, S. T. Lin, J. L. Chen, and H. C. Huang, "Development of innovative fringe locking strategies for vibration-resistant white light vertical scanning interferometer (VSI)," Key Engineering Material, 437, 89-94(2010).
14. S. L. Yeh, H. J. Yang, S. T. Lin, and M. W. Wu, "Replacers of barcodes for small application areas by using grating dots to diffractively form bright points," APPL. OPTICS, 48(36), 6940-6945(2009). (SCI).
15. S. L. Yeh, S. T. Lin, and Y. H Chang, "Precise displacement measurement for a local surface," Optics Letters, 34(21), 3406-3408(2009). (SCI).
16. S. T. Lin and W. J. Syu **"**Heterodyne Angular Interferometer Using a Square Prism," Optics and Lasers in Engineering, 47, 80–83(2009). (SCI).
17. S. L. Yeh and S. T. Lin, "A diffusion pattern composed of two-dimensional diffusion dots for encrypting a digital image," J. Opt. A: Pure Appl. Opt., **10,** 115307 (8pp) (2008). (SCI).
18. S. T. Lin, S. L. Yeh, and C. W. Chang, "Low-coherent light source angular interferometer using square prism and angular scanning technique," OPTICS LETTERS, 33, 2344-2346(2008). (SCI).
19. S. L. Yeh, S. T. Lin, and Y. C. Tu, "Diffractive barcode using grating-dot lines," OPTICS LETTERS, 33,1942-1944(2008). (SCI).
20. S. T. Lin, S. L. Yeh, and C. W. Chang, "Absolute angular displacement determination using Mach-Zehnder interferometer," J. Opt. A: Pure Appl. Opt. 10, 095304(6pp) (2008). (SCI).
21. S. T. Lin and T. L. Lin, "Refractive index and thickness determinations using a dual-path Mach-Zehnder interferometer." Key Engineering Materials, 381-382, 97-100 (2008). (EI).
22. Y. K. Lu, S. M. Yeh, S. T. Lin, P. Yeh, and W. H. Cheng , "Wavefront measurements of diode laser beams with large dynamic ranges," OPTICS LETTERS, 33, 1183-1185 (2008). (SCI).
23. S. T. Lin, H. H. Lu, and C. C. Chang "Wavelength shift determinations using a high sensitivity and stability interferometer," J. Opt. A: Pure Appl. Opt., **9,** 1144–1148 (2007). (SCI).
24. S. T. Lin, K. T. Lin, and W. J. Syu, "Angular Interferometer Using Calcite Prism and Rotating Analyzer," Optics communications, 277, 251–255(2007). (SCI).
25. S. T. Lin, K.T. Lin, and Yi-Chang Liao, "Shearing Interferometer Using Low-coherent Light Source and Calcite Prism," Optics communications, 276, 201-205 (2007). (SCI).
26. S. T. Lin, S. H. Shih, H. N. Feng, and T. C. Tasi, "Phase-shifting Sarvat shearing interferometer," Optical Engineering, 45(12), 1-1-1-5(2006). (SCI).
27. S. J. Hwang, S. T. Lin, and C. H. Lai, "A novel method to measure the cell gap and pretilt angle of a reflective liquid crystal display," Optics Communications, 260, 614-620(2006). (SCI).
28. S. T. Lin, and Y. R. Cheng, "Wavelength shift determination using a dual-path heterodyne Mach-Zehnder interferometer," Optics Communications, 266, 50-54(2006). (SCI).

29. M. Wu, S. T. Lin, and J. Fu, “Heterodyne Interferometer with Two Spatial Separated Polarization Beams for Nanometrology”, Optical and Quantum Electronics, 34(12), 1267-1276(2002). (SCI).
30. 劉惠中，謝文賢，林世聰， “653nm半導體雷射穩頻” ，台北科技大學學報，35(2), 53(2002).
31. S. T. Lin and H. L. Chen, “Roll Displacement Measurement Using Laser Interferometer”, J. National Taipei University of Tech. , 35(1), 201(2002).
32. S. L. Yeh and S. T. Lin, “Dot-matrix Hologram with Hidden Image” , Optical Eng., 41(2), 314 (2002). (SCI).
33. S. T. Lin, “A New Moire’ Interferometer for Measuring In-plane Displacement,” Experimental Mechanics, 41(2), 140(2001). (SCI).
34. S. T. Lin, “A Laser Interferometer for Measuring Straightness”, Optics & Laser Tech., 33(3), 195 (2001). (SCI).
35. S. T. Lin, “Three Dimensional Displacement Measurement Using a Newly Designed Moire’ Interferometer,” Optical Eng. 40(5), (2001). (SCI).
36. 李文興，林世聰，及胡清煌， “導電性薄膜之製程研究” ，台北科技大學學報，34(1), 11(2001).
37. W. H. Lee, C. M. Hu, S. T. Lin, Y. F. Hwang, and A. Zone, “ A study on the properties of Conductive Optical Fiber”, J. National Taipei University of Tech. , 34(1), 27(2001).
38. S. T. Lin, “Blind-hole Residual Stress Determination Using Optical Interferometry,” Experimental Mechanics, 40(1), 60(2000). (SCI).
39. S. T. Lin, C. T. Hsieh, and C. K. Lee, “A general Form for Calculating Residual Stresses Detected by Using Holographic Blind-Hole Method,” Experimental Mechanics, 38(4), 255(1998). (SCI).
40. S. T. Lin, C. T. Hsieh, and C. P. Hu, “Two Holographic Blind-Hole Methods for Measuring Residual Stresses,” Experimental Mechanics, 34(2), 141(1994). (SCI).
41. S. L.Yeh, S. T. Lin, and C. P. Hu, “Real-Time Speckle-Shearing Interferometry for Direct Measurement of Surface Strains,” Proc. Natl. Sci. Counc. ROC(A), 17(5), 339.
42. S. T. Lin, C. T. Hsieh, and C. P. Hu, “An Improved Holographic Blind-Hole Method for Measuring Residual Stresses,” Proc. Natl. Sci. Counc. ROC(A), 17(2), 124.

(b). 研討會論文

1. S. T. Lin and N. V. Hung, “ Measurement of refractive index of liquids using low-coherence fiber-optic Fabry-Perot interferometer,”Optic 2014, Dec. 4-5, 2014, National Chung Hsing University, Taiwan
2. 林鈺涵、謝樺岳、林世聰，“數位全像術在二維形變量測之應用”，Optic 2014, Dec. 4-5, 2014, National Chung Hsing University, Taiwan
3. S. M. Wu and S. T. Lin, “One shot interference microscope,” Optic 2014, Dec. 4-5, 2014, National Chung Hsing University, Taiwan

4. S. T. Lin, H. X. Trịnh, L. C. Chen, and S. L. Yeh, " Polarization phase-shifting Newton interferometer without polarization crosstalk," 18th International Conference on Mechatronics Technology (ICMT2014), Oct. 21-24, 2014, Taipei, Taiwan.

5. S. T. Lin, P. H. Tuan, W. T. Wu, and N.T. Hop, "White light shearing interferometer and its application to examine residual stress of deposited thin films," Proceedings - ASPE/ASPEN Summer Topical Meeting: Manufacture and Metrology of Freeform and Off-Axis Aspheric Surfaces, 172-175(2014).

6. S. L. Yeh, S. T. Lin, D. J. Wu, and M. W. Wu, "Distance measurement method using two Fizeau interferometers and laser-beam wavelength-shifting phenomena ," Proceedings - ASPE/ASPEN Summer Topical Meeting: Manufacture and Metrology of Freeform and Off-Axis Aspheric Surfaces, 190-194(2014).

7. L. C. Chen, T. Y. Lin, and S. T. Lin, "Chromatic confocal surface profilometry employing signal recovering methodology for simultaneously resolving lateral and axial cross talk problems," Proceedings of SPIE - The International Society for Optical Engineering, 8759, 87594I(2013)

8. L. C. Chen, Y. S. Chen, Y. W. Chang, S. T. Lin, and S. L. Yeh "Spectrally resolved chromatic confocal interferometry for one-shot nano-scale surface profilometry with several tens of micrometric depth range," Proceedings of SPIE - The International Society for Optical Engineering, 8759, 87592C(2013)

9. 林世聰,鄭春興、魏孟琪、林仲珩、林鈺涵、吳威霆,"使用Fabry-Perot etelon的奈米表面輪廓儀," 台灣光電科技研討會(OPTIC 2013) 暨國科會光電學門研究成果發表會，中央大學，中壢

10. S. T. Lin and M. H. Hxieh, "Slope contour measurements using digital holographic interferometry," The 3rd conference on applied and engineering physics, Oct. 8-12, 2013, Hue, Vietnam.

11. L. C. Chen,H. H. Hai, S. T. Lin, and S. L. Yeh, "Realization of optical nanoscopy by developing novel optical super-resolution detection in white light interferometry," The 3rd conference on applied and engineering physics, Oct. 8-12, 2013, Hue, Vietnam.

12. 林世聰、陳孟珠、謝明翰、魏孟琪、及林仲珩，"相移式顯微干涉儀量測性能改進計畫"， 台灣光電科技研討會(OPTIC 2012) 暨國科會光電學門研究成果發表會，台灣大學，台北

13. H. X. Trịnh, S. T. Lin, L. C. Chen, S. L. Yeh, Polarization Phase - shifting Newton interferometerwithout polarization crosstalk," The7th International Conference on Photonics and Applications (ICPA7), Nov. 26 – 29, 2012, Ho Chi Minh city, Vietnam

14. C. H. Lin and S. T. Lin, "Scanning white light Newton interferometer for plane optical surface measurements," The7th International Conference on Photonics and Applications (ICPA7), Nov. 26 – 29, 2012, Ho Chi Minh city, Vietnam

15. M. C. Wei and S. T. Lin, “Novel phase-shifting savart shearing interferometer for slope contour measurements,” The7th International Conference on Photonics and Applications (ICPA7), Nov. 26 – 29, 2012, Ho Chi Minh city, Vietnam

16. S. T. Lin and M. H. Hxieh, “Innovative shearing interferometer for slope contour measurements,” 2012 IUTAM Symposium on Advances of Optical Methods in Experimental Mechanics, Nov. 3-6, 2012, The grand hotel, Taipei

17. 林世聰、謝明漢，"角度掃描與相移式Savart剪切干涉儀”， 第五屆 二十一世紀的實驗力學學科發展-海峽兩岸實驗力學研討會， 2012年7月31日，中國昆明。

18. S. T. Lin and M. H, Xie, “ANGULAR SCANNING WHITE LIGHT SHEARING INTERFEROMETER,” 15th International conference on Experimental Mechanics, July 22-27, 2.12, Porto, Portugal.

19. 陳孟珠、王奕淳、林世聰，“使用Fabry-Perot etalon及顯微物鏡的雷射表面輪廓儀”中國機械工程學會第二十八屆全國學術研討會

20. 樊大正、黃懋憲、邱祺祥、及林世聰，“使用寬頻光源與即時補償法之真直度干涉儀”中國機械工程學會第二十八屆全國學術研討會

21. 謝明漢及林世聰 “相移式低同調光源Savart剪切干涉儀”中國機械工程學會第二十八屆全國學術研討會

22. S. T. Lin, Y. C. Wang, and M. S. Huang, “Heterodyne interferometer with improved sensitivity for displacement determinations,” 2010台灣光電科技研討會(OPT2010)

23. 王奕淳、林志鋒、及林世聰，“使用Fabry-Perot etalon之絕對角度測量儀”，中國機械工程學會第二十七屆全國學術研討會

24. 黃懋憲、邱祺詳、及林世聰，“白光光源式真直度干涉儀”，中國機械工程學會第二十七屆全國學術研討會

25. 邱祺詳及林世聰，“白光光源式真直度干涉儀”，2009台灣光電科技研討會(OPT2009)

26. 林志鋒及林世聰，“使用Fabry-Perot etalon之絕對角度測量儀”，2009台灣光電科技研討會(OPT2009)

27. S. T. Lin and Z. F. Lin, “Angular displacement determinations using Fabry-Perot etalon and angular scanning technique” 9th International Symposium on Measurement Technology and Intelligent Instruments (ISMTII 2009), Saint-Petersburg, Russia, June 29- July 2, 2009.

28. 張浩銘及林世聰，“共路徑非等光程干涉儀及其在多工式光纖光柵感測系統之應用”，中國機械工程學會第二十五屆全國學術研討會

29. 葉芳如及林世聰，“共路徑異光程麥克森干涉儀在波長飄移量測之研究”，中國機械工程學會第二十五屆全國學術研討會

30. 張建偉、林世聰及廖益昌， “白光角度干涉儀”，2007台灣光電科技研討會(OPT2007)

31. 苟孝第、李鎧淩及林世聰，“一套結合白光與差頻干涉儀的晶體參數量測”，2007台灣光電科技研討會(OPT2007)

32. S. T. Lin and T. L. Lin, “Refractive index and thickness determinations using a dual-path Mach-Zehnder interferometer,” The 8th International Symposium on Measurement Technology and Intelligent Instruments, Sep. 24-27, 2007.

33. S. T. Lin and C. C. Chang, “Wavelength shift determination using a common-path interferometer,” 13th International Conference on Experimental Mechanics, Alexandroupolis, Greece, July 1-6, 2007.

34. S. T. Lin and C. C. Chang, “A common-path interferometer for determining strains of Bragg grating sensors,” 2007 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, June, 4-6, Springfield, Massachusetts, USA

35. S. T. Lin, and H. Y. Cheng, “Shearing Interferometer Using Achromatic Light Source,” 2006 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, June, 4-7, St. Louis, Missouri, USA

36. 林世聰及林志龍，“共路徑非等光程波長掃描干涉儀在晶體參數量測之應用”2006台灣光電科技研討會(OPT2006)

37. 林世聰及張政中，“共路徑非等光程干涉儀及其在光纖光柵感測器之應用”2006台灣光電科技研討會(OPT2006)

38. 林世聰及廖益昌，“白光剪切干涉儀”2006台灣光電科技研討會(OPT2006)

39. 林世聰及徐偉傑，“一套使用Calcite稜鏡及旋轉分析板的角度干涉儀”第六屆海峽兩案計量與品質研討會

40. 林世聰及張家豪，“結合相移術與波長位移術之偏光儀”第六屆海峽兩案計量與品質研討會

41. 林世聰及鄭晏如，“波長位移量測用干涉儀”2005台灣光電科技研討會(OPT2005)

42. 林世聰及鄭翔允，“白光剪切顯微干涉儀”2005台灣光電科技研討會(OPT2005)

43. 林世聰及何恭瑄，“雷射光干涉儀應用在動態光碟片的量測”2005台灣光電科技研討會(OPT2005)

44. 林世聰及黃振添，”改良式投射條紋顯微干涉儀應用於微結構之量測”2004台灣光電科技研討會(OPT2004)論文集

45. 林世聰及林尹豪，”顯微干涉儀在微機電系統之量測”2004台灣光電科技研討會(OPT2004)論文集

46. 林世聰及沈仁立，”ZEEMAN雙頻雷射干涉儀應用於向列型液晶之量測”2004台灣光電科技研討會(OPT2004)論文集

47. S. T. Lin, H. N. Feng, T. C. Tsai, S. H. Shih, “Crack Tip Deformation Field Measurements Using Phase-shifting Savart Shearing Interferometer”, Proceeding of 2004 SEM X International Congress & Exposition on Experimental and Applied Mechanics, June 7-10, 2004, Costa Mesa, California USA.

48. 林世聰及許淑惠， ”DVD光碟機動態檢測系統”2003台灣光電科技研討會(OPT2003)論文集二，p.p.507-509

49. 林世聰及賴君紅， ”都卜勒雷射干涉儀應用於向列型液晶之相變量測研究”2003台灣光電科技研討會(OPT2003)論文集二，p.p.522-524

50. 林世聰及蔡文川， ”GLV晶片之光機特性鑑別研究”2003台灣光電科技研討會(OPT2003)論文集二，p.p.589-591

51. S.T. Lin, “Interferometer for Determining 3-D Displacement of Joule Heater Actuator”, 2003 SEM Annual Conference & Exposition on Experimental and Applied Mechanics: Exploring the Frontiers of Experimental Mechanics, Charlotte, North Carolina

52. S.T. Lin, “A New Phase-shifting Mechanism for Photoelasticity”, 2003 SEM Annual Conference & Exposition on Experimental and Applied Mechanics: Exploring the Frontiers of Experimental Mechanics, Charlotte, North Carolina

53. S. T. Lin, H. L. Chen, and T. R. Huang “The applications and Phase-shifting mechanism of a Savart shearing interferometer” ISEM, Dec. 2002, Taipei

54. H. L. Chen and S. T. Lin, “Interferometic method used for three-dimensional displacement Measurements of microelectromechanical system” ISEM, Dec. 2002, Taipei

55. H. J. Cheng and S. T. Lin, “Phase-Shifting Interferometry Using Intelliwave” ISEM, Dec. 2002, Taipei

56. 林世聰及錢玉涵， “量測MEMS三維雷射干涉儀”2002台灣光電研討會(OPT2002)論文集

57. S. T. Lin, H. L. Chen, and T. R. Huang, “A laser interferometer for determining three-dimensional displacements of microelectromechanical system,” 2002 IEEE/ASME International Conference on Advanced Manufacturing Technologies and Education in the 21st Century, Chia Yi, Taiwan, R.O.C, August 11-14, 2002

58. 林世聰及程和專，“Savart 剪切干涉儀在裂縫尖端之應變量測”中華民國第二十五屆全國力學會議論文， 2871-2880(2001)

59. 林世聰及劉耿豪，“改良型Savart 剪切干涉儀在應變量測上之應用”中國機械工程學會第十八屆全國學術研討會論文集，， 1041-1048(2001)

60. 莊益宗，林世聰，及吳見明，“微徑度滾動角的量測”，台灣光電科技研討會論文集，839-841(2001)

61. 邱銘宏，簡志成，吳見明，及林世聰，“共光程外差干涉儀應用在微小角度量測”，台灣光電科技研討會論文集，1164-1166(2001)

62. 林世聰及黃富民，“使用光束位移器之剪切干涉儀”中國機械工程師學會第十七屆全國學術研討會論文集

63. S. T. Lin and F. M. Huang, “Shearing Interferometer Using a Beam Displacer”, Proc. SPIE, 4317, 54-59(2000 Singapore)

64. S. T. Lin and F. M. Huang, “Three Dimensional Displacement Measurement Using a Newly Designed Moire’ Interferometer,” Proceeding of the SEM IX International Congress on Experimental Mechanics, June 5-8, 2000, Orlando, Florida

65. 楊趙銘，張世格，及林世聰， “一種真直度雷射干涉儀之改良設計”第七屆中華民國計量學術研討會

66. 林世聰及張世格， “一種量測轉軸旋轉角之雷射干涉儀”第六屆中華民國計量學術研討會

67. S.T. Lin, “A general Form for Calculating Residual Stresses Detected by Using Holographic Blind-Hole Method,” Abstract Proceedings of the VIII International Congress on Experimental Mechanics and Experimental/Numerical Mechanics in Electronic Packaging, Society for Experimental Mechanics, Inc., Tennessee, June 10-13, 1996

68. C. T. Hsieh, S. T. Lin, and C. K. Lee, “In-Plane Residual Stress Measurement with one axis-symmetric Phase-Shifting Holographic Blind-Hole Fringe Pattern,” International Conference on Optical Fabrication and Testing and Applications of Optical Holography

69. S. T. Lin, C. T. Hsieh, and C.K. Lee, “Full-field Phase-Shifting Holographic Blind-Hole Technique for In-Plane Residual Stress Detection,” International Conference on Optical Fabrication and Testing and Applications of Optical Holography

70. S. T. Lin and C. P. Hu, “Improved Holographic Blind-Hole Methods for Measuring Residual Stresses,”13th.WNDT Conference

71. S. T. Lin and C. P. Hu, “A Pratical Method for Measuring Through Thickness Residual Stresses by the Blind-Hole Method,” First Far East NDT Conference

2.專利

編號	專利名稱	國別	專利號碼	發明人
1	System and Method for Generating a Grating Image	USA	US 6473443 B1	郭奇旺及林世聰
2	光柵影像製作方法	ROC	139975	郭奇旺及林世聰
3	光柵影像之製作方法	ROC	122997	郭奇旺及林世聰
4	量測轉軸旋轉角之雷射干涉儀	ROC	113411	林世聰
5	旋轉線性光柵式角度編碼器	ROC	107899	林世聰
6	兩點干涉儀之光機設計	ROC	119405	林世聰等
7	剪相式光波波前量測裝置	USA	6115126	李世光等

8	數位式全彩全像片之製作方法	ROC	369608	吳文中等
9	Vibration resistant interferometric scanning system and method	USA	US7855791	葉勝利等
10	Orthogonal-polarization Mirau interferometry and beam-splitting module and interferometric system using the same	USA	已核准、領證中	葉勝利等
11	抗振型干涉掃描系統及其方法	ROC	I371574	葉勝利等
12	正交偏極式 Mirau 干涉術以及其分光模組與干涉系統	大陸	CN 101881604 B	葉勝利等

3. 執行計畫(2007-2014)

年度	計劃名稱	擔任工作	執行情形	補助金額(元)
102-103	相移與相位掃描式差分顯微干涉儀	計畫主持人	執行中	2,221,000
101	使用 Fabry-Perot etalon 的奈米表面輪廓儀	計畫主持人	結案中	843,000
101	利用創新型頻閃式影像映像技術探討小鼠酒精性心肌病變模式之心臟電生理變化	計畫主持人	結案	680,000
100	相移式顯微干涉儀量測性能改進計畫	計畫主持人	結案	868,000
98-99	創新型雷射表面輪廓儀之研發	計畫主持人	結案	2,492,000
97	白光角度干涉儀之研發	計畫主持人	結案	1,097,000
96	差頻式偏光干涉儀及其應用	計畫主持人	結案	978,000
96-98	高中職科學教師尖端科技研究經驗培育計畫--高中職科學教師尖端光電科技研究經驗培育計畫	計畫主持人	結案	3,588,000

陳堯輝教授

實驗 (研究) 室名稱：顯示與雷射應用實驗室
聯絡電話：(02)27712171#4628
e-mail：yhchen@ntut.edu.tw
網址：http://wwwoe.web.ntut.edu.tw/files/11-1045-3100-1.php
專長

4. 化合物半導體
5. 光調制反射光譜
6. 摻染料液晶雷射
7. 超快光學量測

4. 近五年成果

(a) 期刊論文

1. Ja-Hon Lin,* Ying-Li Hsiao, Bo-Yu Ciou, Sheng-Hung Lin, **Yao-Hui Chen**, Jin-Jei Wu, "Manipulation of Random Lasing Action From Dye-Doped Liquid Crystals Infilling Two-Dimensional Confinement Single Core Capillary," IEEE Photon. J. 7, 1501809 (2015).

(b)研討會論文

1. Kuan-Cheng Liao, Chun-Hao Chen, Li-Hao Jian, Ja-Hon Lin,***** Shwu-Yun Tsay, **Yao-Hui Chen** "Two color bandedge lasing from cholesteric liquid crystals in capillary," The 75th JSAP Autumn Meeting (JSAP 2014), Sapporo, Japan, September 17-September 20 (2014).
2. Hsiang-Lin Huang, Chen Feng Chou, Shi Hua Shiao, Yi-Cheng Liu, Jian-Jang Huang, **Yao-Hui Chen** and Hai-Pang Chiang, "Plasmon-enhanced Photoluminescence of DCJTB by using Silver Nanoparticle Arrays", the 9th Asia-Pacific Conference on Near-Field Optics (APNFO), (2013).
3. Hsiang-Lin Huang, Chen Feng Chou, Shi Hua Shiao, Yi-Cheng Liu, Jian-Jang Huang, **Yao-Hui Chen** and Hai-Pang Chiang, "Surface Plasmon-enhanced Photoluminescence of DCJTB by using Silver Nanoparticle Arrays", Asia-Pacific Radio Science Conference, D3c-1 (2013).
4. Po-Yen, Kuan-Cheng Liao, Ja-Hon Lin, **Yao-Hui Chen**, Shwu-Yun Tzeng and Jin-Jey Wu; "Temperature Dependent Color Cone Lasing in Cholesteric Liquid Crystal", CLEO-PR & OECC/PS, 2013-06-30~-07-04 日本 Kyoto (2013).
5. Min-Song Lin, Ja-Hon Lin*, Shwu-Yun Tsay, Yao-Hui Chen, Jin-Jei Wu, "Mirrorless Lasing behavior of Dye-Doped Twisted Nematic Liquid Crystal cell," Optic 2013, Chungli, Taiwan, October 5-7.
6. Kuan-Cheng Liao, Ja-Hon Lin*, Shwu-Yun Tsay, Yao-Hui. Chen, "Two color lasing of dye doped cholesteric liquid crystal in capillary tube," Optic 2013, Chungli, Taiwan, October 5-7.
7. Chen-Yu Lin, Shui-Shang Hu, **Yao-Hui Chen**, Tien-Jung Chen and Jin-Je Wu; "Backlight design for a vertical-field-switching blue phase liquid crystal display."中華民國液態晶體學會年會暨研討會 2012-12-21 台灣，中華民國 高雄市
8. 王振華, 蕭志祥,陳堯輝,林泰源,洪魏寬; "以無催化劑輔助的方式於玻璃基板成長氧化

鋅奈米柱”, OPTIC 2012-12-06~12-08 台灣，中華民國 台北市

9. Yao-Hui Chen and Jin-Je Wu; “無配向層鐵電型液晶水平電極液晶盒均勻配向機制”, 中華民國液態晶體學會年會暨研討會 2011-12-16~12-16 2011 台灣，中華民國 台中市

(c)專利
(d)技術移轉
(e)專書及專章
(f)作品
(g) 研發與產學合作計畫
(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)
101 學年度電資學院教學研究獎
(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

吳俊傑教授

實驗 (研究) 室名稱：液態晶體實驗室
聯絡電話：(02)2771-2171 ext.4625
e-mail：jjwu45@yahoo.com.tw
網址：http://wwwoe.web.ntut.edu.tw/files/11-1045-3097-1.php

研究聚焦領域：□ H：健康科技　■ I：智慧整合科技
□ G：綠色科技　□ H：人文與創新元素

專長

1. 電子學	2. 光電工程	3. 顯示器	4.

5. 近五年成果

學術期刊：

1. King-Lien Lee, **Jin-Jei Wu***, Tien-Jung Chen, Yeong-Shiun Wu, Fu-Chen Chen, and Shu-Hsia Chen, "Brightness enhancement with a fingerprint chiral nematic liquid crystal," *Jpn. J. Appl. Phys.*, 50, 032601 (2011). [SCI]
2. Cheng-Chung Peng, Kuei-Chu Hsu, Shun-Jian Huang, **Jin-Jei Wu***, "Stability improvement of a twisted-vertical aligned nematic liquid crystal cell," *Jpn. J. Appl. Phys*., 50, 062601 (2011).[SCI]
3. **Jin-Jei Wu***, Shui-Shang Hu, Chia-Chun Hsu, Tien-Jung Chen, King-Lien Lee, and Qing Li "Director model for the electro-optics of blue-phase liquid crystal," *IEEE Photo. Tech. Lett.*, 24, 503 (2012). [SCI]
4. Shui-Shang Hu, **Jin-Jei Wu***, Chia-Chun Hsu, Tien-Jung Chen, and King-Lien Lee, "Simulation of the in-plane-switching blue-phase liquid crystal using the director model," *Opt. Express*, 20, 23954 (2012). [SCI]
5. **Jin-Jei Wu***, Shui-Shang Hu, Chia-Chun Hsu, Tien-Jung Chen, King-Lien Lee, "Electro-optical characteristics of high-pretilt twisted liquid crystal pi-cells," *Appl. Phys. Express.* 6, 012201, (2013). [SCI]
6. Chia-Chun Hsu, **Jin-Jei Wu***, Shui-Shang Hu, Chen-Yu Lin and Tien-Jung Chen, "The Essential of Kerr Effect for Polymer-Stabilized Blue Phase Liquid Crystal," paper submitted. (2014).
7. Guan-Jhong Lin, Tien-Jung Chen, Bo-Yu Chen, **Jin-Jei Wu***, and Ying-Jay Yang, "Enhanced electro-optical properties of vertically aligned in-plane-switching liquid crystal displays employing polymer networks," *Opt. Express*. 4, 1657 (2014).[SCI]
8. Ja-Hon Lin, Po-Yen Chen, and **Jin-Jei Wu**, "Mode competition of two bandedge lasing from dye doped cholesteric liquid crystal laser," *Opt. Express*. 22, 9932(2014). [SCIE]
9. Tien-Jung Chen , Guan-Jhong Lin , Bo-Yu Chen , Bo-Rong Lin, **Jin-Jei Wu**, Ying-Jay Yang,"Optimized electro-optical properties of polymer-stabilized vertical-aligned liquid crystal displays driven by an in-plane field," displays. 37,94(2014) [EI]

10.Guan-Jhong Lin, Tien-Jung Chen, Yu-Ting Lin,**Jin-JeiWu**, and Ying-Jay Yang,“ Effects of chiral dopant on electro-optical properties of nematic liquid crystal cells under in-plane switching and non-uniform vertical electric fields,” *Opt. Express*.4,2468(2014) [SCI]

11. Jie-Wen Chen, King-Lien Lee, **Jin-Jei Wu**, Chen-Yu Lin,“ Design a backlight system to a LCD of vertical-field-switching blue phase ,” Optik .125,6713(2014) [EI]

研討會論文：

1. 陳柏宇, 陳殿榮, 王子建, 莊棋凱, **吳俊傑**, “向列型液晶攙雜高分子快速響應VA-IPS顯示模式,” Annual Meeting of TLCS, PT-09 (2011)
2. 陳葆根, 陳殿榮, **吳俊傑**, “高分子穩定型雙穩態液晶顯示之光電特性研究,” Annual Meeting of TLCS, PT-10 (2011)
3. 黃群涵, 李欣達, 彭政忠, 沈毓仁, **吳俊傑**, 陳殿榮, “用水平電場驅動的垂直配向液晶盒,” Annual Meeting of TLCS, PT-11(2011)
4. 楊礎豪, 姚怡安, **吳俊傑**, 陳殿榮, “觸控液晶顯示器之光學優化設計,” Annual Meeting of TLCS, PT-14 (2011)
5. 戴琛琮, **吳俊傑**, 陳殿榮, 李金連, 陳堯輝, “無配向層鐵電型液晶水平電極液晶盒均勻配向機制,” Annual Meeting of TLCS, PT-18 (2011)
6. Shui-Shang Hu, Chia-Chun Hsu, **Jin-Jei Wu**, Tien-Jung Chen, “Optical simulation and analysis of the In-Plane-Switching blue-phase liquid crystal by a director model,” Annual Meeting of TLCS, PP-27 (2011)
7. Chia-Chun Hsu, Shui-Shang Hu, Tien-Jung Chen, **Jin-Jei Wu**, “Simulation of the electro-optical characteristics of blue phase liquid crystal with a director model,” IPC’11, 2011 Annual Meeting of the International Photonics Conference, National Cheng Kung University (2011)
8. 蔡譯緯, 陳殿榮, 林冠中, **吳俊傑**, “非均勻電場配向研製IPS-VA液晶顯示器及光電特性研究,“ Annual Meeting of TLCS, PT-03(2012)
9. 黃建幃, 陳殿榮, **吳俊傑**, “高分子配向製作快速響應IPS液晶顯示模式,“ Annual Meeting of TLCS, PT-04(2012)
10. 王奕凱, **吳俊傑**, 陳殿榮, “A Study of the Electro-optic Characteristics by Polymer Concentrations to Homeotropic In-Plane Switching Ferroelectric Liquid Crystal Cell,“ Annual Meeting of TLCS, PT-05(2012)
11. 謝欣容, 陳殿榮, **吳俊傑**, “高分子材料研製雙穩態液晶顯示元件及光電特性研究, “Annual Meeting of TLCS, PT-02(2012)
12. Chen-Yu Lin, Shui-Shang Hu, Yau-Huei Chen, Tien-Jung Chen, and **Jin-Jei Wu**, “Backlight design for a vertical-field-switching bule phase liquid crystal display , “Annual Meeting of TLCS, PP-03(2012)
13. 廖軒逸, 林柏榮, 林冠中, 張毅, 陳殿榮, **吳俊傑**, 楊英杰, “混合Polyimide的配向層製作OCB液晶元件及光電特性之研究, “Annual Meeting of TLCS, PP-05(2012)
14. Chia-Chun Hsu*, **Jin-Jei Wu**, Shui-Shang Hu, Guan-Jhong Lin and Tien-Jung Chen, “Using the Director Model to Simulate and Analyze the Optical Properties of Polymer-Stabilized Blue-

Phase Liquid Crystal," ILCC (International Liquid Crystal Conference), Frankfurt, Germerny (2012).

15. Tien-Jung Chen, Guan-Jhong Lin, Bo-Yu Chen, **Jin-Jei Wu**, Ying-Jay Yang, "Fast-response liquid crystal display by the VA-IPS display mode with nematic liquid crystal and polymer networks," *Proc. SPIE* 8475, Liquid Crystals XVI, 847513 (2012).
16. 林冠輝, 陳殿榮, **吳俊傑**, "研製電場作用的高分子穩定型液晶顯示元件," Annual Meeting of TLCS, PT-04(2013)
17. 林柏榮, 吳昭霆, 林冠中, 陳殿榮, **吳俊傑**, 楊英杰, "Polyimide 配向膜及高分子網製作OCB液晶元件及光電特性比較," Annual Meeting of TLCS, PP-05(2013)
18. Yu-Ting Lin, Guan-Jhong Lin, Tien-Jung Chen, **Jin-Jie Wu**, Ying-Jay Yang, "Studu ob Electro-optical Properties of Cholesteric Liquid Crystal Cells with the Negative Dielectric Anisotropy by In-plane/Vertical Field,'' Annual Meeting of TLCS, PT-03(2013)
19. Sin-Yan Tsai, Shui-Shang Hu, Bo-Hau Tseng, Ja-Hon Lin, Yao-Hui Chen,Tien-Jung Chen and **Jin-Jei Wu**, "The relation between the Kerr constant and cell thickness in a blue phase liquid crystal cell," Annual Meeting of TLCS, PP-10(2013)
20. Bo-Hau Tseng, Sin-Yan Tsai, Ja-Hon Lin, Yao-Hui Chen, Tien-Jung Chen and **Jin-Jei Wu**, "Insulation layer effect on twist vertically aligned nematic liquid crystal cell," Annual Meeting of TLCS, PT-08(2013)
21. Ping-Hsun Tsai, I-An Yao, Jia-Hsin Lee, Cho-Hao Yang, Tien-Jung Chen, Chia-Hong Lin, **Jin-Jei Wu**, "Design for Invisible ITO Pattern of Capacitive Touch LCD Panel," Annual Meeting of TLCS, PT-09(2013)
22. Yu-Ting Lin, Guan-Jhong Lin, Tien-Jung Chen, **Jin-Jie Wu**, Ying-Jay Yang, "Electro-optical Properties of Cholesteric Liquid Crystal Cells with the Negative Dielectric Anisotropy Driven by In-plane switching,'' International Conference on Optics and Photonics in Taiwan, OPT7-P-013 (2013)
23. B.R. Lin, G.J. Lin, T.J. Chen, **J.J. Wu**, Y.J. Yang, "Effect of Pretilt Angle on the Electro-optical Performance of Optically Compensated Bend Liquid Crystal Cells with the Mixed-Polyimide Alignment," International Conference on Optics and Photonics in Taiwan, OPT7-P-016 (2013)
24. Hsing-Ru Tsai, Min-Song Lin, Chen-Hsiu Wu, Ja-Hon Lin*, and **Jin-Jei Wu**, "Lasing behavior of dye doped liquid crystal within glass cell," CLEO-PR (Conference on Lasers and Electro-Optics Pacific Rim) (2013).
25. Po-Yen Chen, Kuan-Cheng Liao, Ja-Hon Lin*, Yao-Hui. Chen, Shwu-Yun Tsay Tzeng, **Jin-Jei Wu**, "Temperature dependent color cone lasing in cholesteric liquid crystal" CLEO-PR (Conference on Lasers and Electro-Optics Pacific Rim) (2013)
26. Z. T. Wu, B. R. Lin, G. J. Lin, T. J. Chen, **Jin-Jei Wu**, Y. J. Yang, "Study of Electro-Optical Properties of Optically Compensated Bend Liquid Crystal Cells with Polymer Networks " OPTIC 光電科技研討會(2014)
27. T. W. Hsu, T. J. Chen, Y. H. Chen, K.L. Lee, **Jin-Jei Wu**, "Moiré Phenomena in Liquid Crystal Display," 2014中華民國液態晶體學會年會暨研討會(Annual Meeting of TLCS) (2014)

28. S. H. Qiu, T. J. Chen, J. H. Lin, and **Jin-Jei Wu**, “A simulation for a vertical-field-switch blue phase liquid crystal cell by the director model,” 2014中華民國液態晶體學會年會暨研討會(Annual Meeting of TLCS) (2014)

29. Yun-Tzu Lin,Guan-Jhong Lin, Tien-Jung Chen, Ying-Jay Yang, **Jin-Jei Wu**, “A study of the Plane-Parallel Aligned Liquid Crystal Microlens,” OPTIC 光電科技研討會(2014)

30. Guan-Jhong Lin, Yu-Ting Lin, Tien-Jung Chen, **Jin-Jei Wu**, Ying-Jay Yang, “Cholesteric Liquid Crystal Components Driven by a Three-Terminal-Electrode Architecture with a Long-Term Unplugged State,” OPTIC 光電科技研討會(2014)

專利：

1. Cheng-Chung Peng, Yuren Shen, Shih-Hung Fa, **Jin-Jei Wu**, “Liquid crystal display device having particular orienting structures,” US Patent 8279386 (2012)
2. Tzu-Yuan Lin, Po-Kai Liu, Ren-Hung Huang, Po-Chang Wu, Fu-Cheng Sie, Chun-Hung Chiang, Shune-Long Wu, **Jin-Jei Wu**, Po-Lun Chen, “Liquid crystal display panel and method for manufacturing thereof and liquid crystal display incorporating the same,” US Patent 8289485 (2012).

蔡淑雲教授

實驗 (研究) 室名稱：**液晶非線性光學實驗室**

聯絡電話：4624
e-mail：sytsay@mail.ntut.edu.tw
網址：http://wwwoe.web.ntut.edu.tw/files/11-1045-3171-1.php

專長

1. 1. 多體物理。	2. 半導體元件混沌現象之探討。	3.膽固醇液晶。	4.

6. 近五年成果

(a)期刊論文

1. Yiharn Tzeng, Shwu-Yun Tsay Tzeng, T. T. S. Kuo and J. W. Holt, 「Binding Energy of O(16) in the ring diagram method with chiral two- and three-neucleon low momentum interactions,,」 Chinese Journal of Physics 52, 1450 (2014)

2. Shwu-Yun Tsay Tzeng*, C. N. Chen and Y. Tzeng, 「Thermal tuning band gap in cholesteric liquid crystals,」Liquid Crystals 37, 1221 (2010).

3 Shwu-Yun Tsay Tzeng*, Kelvin Liu and Y. Tzeng,「Instabilities in n-GaAs including chaos and period 3 simulated by numerical computation,」J. of the Physical Society of Japan 71,094702 (2009).

(b)研討會論文

1. Y. Tzeng* and Shwu-Yun Tsay Tzeng, T. T. S. Kuo "Contribution of chiral two- and three- nucleon interactions to closed shell nuclei" 21st International Conference on Few-Body Problems in Physics, Chicago, Illinois, USA, May 18-22(2015)
2 .Kuan-Cheng Liao, Chun-Hao Chen, Li-Hao Jian, Ja-Hon Lin*, Shwu-Yun Tsay, Yao-Hui Chen "Two color bandedge lasing from cholesteric liquid crystals in capillary" The 75th JSAP Autumn Meeting (JSAP 2014), Sapporo, Japan, September 17-18(2014).
3..Li-Hao Jian, Chun-Hao Chen, Kuan-Cheng Liao, Ja-Hon Lin*, Shwu-Yun Tsay "Spatial control of lasing peak from cholesteric liquid crystal laser" Optic & Photonics 2014, Taichung, Taiwan , December 4-5(2014).
4.Kuan-Cheng Liao, Chun-Hao Chen, Li-Hao Jian, Ja-Hon Lin*, Shwu-Yun Tsay, Yao-Hui Chen "Bandedge lasing from dye doped liquid crystals at Smectic phase" 中華民國液態晶體學會年暨研討會,December 19(2014)
5. Ching-Ching Lin[1]; Shwu-Yun Tsay Tzeng*, "Current Instabilities Under Longitudinal Magnetic Fields In A Semiconductor" Annual Meeting of the Physics Society, Taichung,Taiwan, Jan.21- 23 (2014).

6. Chun-Hao Chen; Li-Hao Jian; Shwu-Yun Tsay Tzeng*, Ja-Hon Lin, "Thermal Tuning The Photonic Band Gap In Cholesteric Liquid Crystals" Annual Meeting of the Physics Society, Taichung,Taiwan, Jan.21- 23 (2014).
7. Min-Song Lin**,** Ja-Hon Lin*, Shwu-Yun Tsay Tzeng, Yau-Huei Chen, Jin-Jei Wu, "Mirrorless Lasing behavior of Dye-Doped Twisted Nematic Liquid Crystal cell," Optics & photonics Taiwan, international conference 2013, Zhongli, Taiwan, December 5-7 (2013).
8. Kuan-Cheng Liao, Ja-Hon Lin, Shwu-Yun Tsay Tzeng and Yao-Hui. Chen, Two color lasing of dye doped cholesteric liquid crystal in capillary tube,"Optics & photonics Taiwan, international conference 2013, Zhongli, Taiwan, December 5-7 (2013).
9. Po-Yen Chen, Kuan-Cheng Liao, Ja-Hon Lin*, Yao-Hui. Chen, Shwu-Yun Tsay Tzeng and Jin-Jei Wu, "Temperature dependent Color cone lasing in cholesteric liquid cystal",LEO-PR2013, Tokyo, Japan, June30-July4(2013)
10. Y. Tzeng* and Shwu-Yun Tsay Tzeng, Measurements of Open Heavy Flavor Hadrons and Future Upgrade in STAR Experiment , International Nuclear Physics Conference INPC2013, Firenze, Italy, June2-7(2013)
11. Shwu-Yun Tsay Tzeng*, Ching-Ching Lin,"Bifurcation routes induced by" transverse magnetic field in a semiconductor GaAs", Annual Meeting of the Physics Society, Taichung,Taiwan, Jan.29- 31 (2013).
12. Y. Tzeng and Shwu-Yun Tsay Tzeng, "Halo Nuclei in a Two-frequency Low-momentum Potential Model", International IUPAP Conference on FewBody Problem in Physics, Fukuok, Japan, Aug.20-25(2012)
13. G.-L. Huang, T.-H. Wu, M. Jani , S.-Y. Tsay Tzeng, C.- L. Cheng,"Temperature effects on the carbon containing mixed phase TiO_2 nanowires" 30th Symposium on Spectroscopic Technologies and Surface Science, Taichung,Taiwan, July.25-27(2012).
14. Shwu-Yun Tsay Tzeng*, C. N. Chen ,"Variation in reflection bands of polymer added cholesteric liquid crystal films by varying exposure time of UV curing", Tainan,Taiwan, Feb.1-3(2010)
15. Shwu-Yun Tsay Tzeng*, C. N. Chen "Temperature dependence of reflection bands of cholesteric liquid crystals", Tainan,Taiwan, Feb.1-3(2010)
16. 陳俊男，蔡淑雲，"手性分子濃度和溫度對膽固醇液晶光電特性之影響"，中國材料科學學會年會,花蓮, Nov.26-28(2009).

(c)專利
(d)技術移轉
(e)專書及專章
(f)作品
(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)
(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)
(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

王子建 教授

實驗 (研究) 室名稱：積體光電實驗室

聯絡電話：(02)2771-2171 分機 4631

e-mail：f10939@ntut.edu.tw

網址：http://www.ntut.edu.tw/~f10939

研究聚焦領域：☐ H：健康科技　　∨ I：智慧整合科技
☐ G：綠色科技　　☐ H：人文與創新元素

專長： 1. 積體光電元件　2. 表面電漿共振生化感測技術
3. 光纖雷射　4. 半導體製程

7. 近年重要論文及著述

(a)期刊論文

1. Tzyy-Jiann Wang, Chi-Kai Chaung, Tien-Jung Chen, and Bo-Yu Chen, " Liquid Crystal Optical Channel Waveguides with Strong Polarization-Dependent Mode Tunability," *Journal of Lightwave Technology*, vol. 32, no. 24, pp. 4891-4897, Dec. 2014.
2. Tzyy-Jiann Wang*, Kuo-Hao Lee, and Tsung-Te Chen, "Sensitivity enhancement of magneto-optic surface plasmon resonance sensors with noble/ferromagnetic metal heterostructure", *Laser Physics*, vol. 24, no. 3, pp. 036001, Mar. 2014..
3. Tzyy-Jiann Wang*, Wan-Jing Li, and Tien-Jung Chen, "Radially realigning nematic liquid crystal for efficient tuning of microring resonators," *Optics Express*, vol. 21, no. 23, pp. 28974-28979, Nov. 2013. .
4. Tzyy-Jiann Wang*, Chi-Kai Chaung, Wan-Jing Li, Tien-Jung Chen, and Bo-Yu Chen, "Electrically tunable liquid-crystal-core optical channel waveguide," *Journal of Lightwave Technology*, vol. 31, vol. 22, pp. 3570-3574, Nov. 2013. .
5. Tzyy-Jiann Wang*, Jheng-Yu He, Cheng-An Lee, and Huan Niu, "High-quality $LiNbO_3$ microdisk resonators by undercut etching and surface tension reshaping," *Optics Express*, vol. 20, no. 27, pp. 28119-28124, Dec. 2012..
6. Tzyy-Jiann Wang*, Shun-Chen Yang, Tien-Jung Chen, and Bo-Yu Chen, "Wide tuning of SiN microring resonators by auto-realigning nematic liquid crystal," *Optics Express*, vol. 20, no. 14, pp. 15853-15858, July 2012..
7. Tzyy-Jiann Wang*, and Yu-Chen Cheng, "Integrated-optic polarization rotator with obliquely deposited columnar thin film," *Optics Express*, vol. 20, no. 1, pp. 601-606, Jan. 2012.
8. Tzyy-Jiann Wang*, and Po-Ching Ho, "Localized surface plasmon resonance biosensing by electro-optic modulation with sensitivity and resolution tunability," *Journal of Applied Physics*, vol. 109, 064703, Jun. 2011.
9. Tzyy-Jiann Wang*, Chin-Chan Cheng, and Shun-Chen Yang, "Surface plasmon resonance biosensing by electro-optically modulated attenuated total reflection," *Applied Physics B: Lasers and Optics*, vol. 103, no. 3, pp. 701-706, Jun. 2011.
10. Tzyy-Jiann Wang*, Yueh-Hsun Tsou, Wen-Che Chang, and Huan Niu, "Fabrication of three-dimensional crystalline microstructures by selective ion implantation and chemical etching," *Applied Physics A: Materials Science & Processing*, vol. 102, pp. 463-467, Feb. 2011.

(b)研討會論文

1. 陳柏廷、蕭文傑、王子建、牛寰,"鈮酸鋰微環芯共振元件之研製," 2015 電子,信號,與通訊創新科技研討會, 國立高雄應用科技大學, 高雄, May 29, 2015.
2. 劉尚遠、陳柏維、王子建,"高折射率二氧化鈦微碟形共振元件之製作," *The 9th Conference on Integrated Opto-Mechatronic Technology and Intellectual Property Rights*, 中華科技大學, 台北, May 19, 2015.
3. Po-Ting Chen, Hung-Ye Chen, Tzyy-Jiann Wang, and Huan Nu, " Coupling Characteristics of High-Q Elliptical Microresonator on $LiNbO_3$," *Optics & Photonics Taiwan, International Conference 2014*, Taichung, Taiwan, Dec. 4-5, 2014.
4. Cheng-An Lee, Po-Ting Chen, Tzyy-Jiann Wang, and Huan Nu, "Thermo-optic tuning of high-quality microdisk resonators on $LiNbO_3$," *Optics & Photonics Taiwan, International Conference 2013*, Chungli, Taiwan, Dec. 5-7, 2013.
5. 王子建、李鎮安、陳柏廷、牛寰,"鈮酸鋰微碟形共振元件品質因子之提昇," *Taiwan Vacuum Society 2013 Annual Meeting*, 成功大學, 台南, Oct. 25-26, 2013.
6. Tzyy-Jiann Wang, Cheng-An Lee, Shang-Yuan Liu, and Huan Niu, "High-Q whispering gallery mode lithium niobate microdisk resonators," *2013 Asia-Pacific Radio Science Conference*, Taipei, Taiwan, Sep. 3-7, 2013.
7. Tzyy-Jiann Wang, Jheng-Yu He, Cheng-An Lee, and Huan Niu, "Resonant characteristics of whispering gallery mode lithium niobate microdisk resonators", 2013 *Annual Meeting of Physics Society*, 東華大學, 花蓮, Jan. 29-31, 2013.
8. 李婉靖、王子建、楊舜臣、陳殿榮、陳柏宇, "使用自動重排向列型液晶之寬調諧氮化矽微環形濾波器," 2012 *Annual Meeting of ROC Taiwan Liquid Crystal Society*, 中山大學, 高雄, Dec. 21, 2012.
9. Tzyy-Jiann Wang, Kuo-Hao Lee, and Tsung-Te Chen, "Sensitivity analysis of magneto-optic surface-plasmon-resonance sensor using Au/Co/Au films," *Optics & Photonics Taiwan, International Conference 2012*, Taipei, Dec. 6-8, 2012.
10. Tzyy-Jiann Wang, Jheng-Yu He, Cheng-An Lee, and Huan Niu, "Whispering-gallery-mode lithium niobate microdisk resonators," *Optics & Photonics Taiwan, International Conference 2012*, Taipei, Dec. 6-8, 2012.
11. Tzyy-Jiann Wang, Shun-Chen Yang, Wang-Jing Li, Tien-Jung Chen, and Bo-Yu Chen, "Widely-tunable silicon nitride microring resonators by liquid crystal auto-realigning," *Optics & Photonics Taiwan, International Conference 2012*, Taipei, Dec. 6-8, 2012.
12. Tzyy-Jiann Wang, Xiang-Nan Xiao, Jen-Yuan Lu, Hsin-Hao Lee, "Application of ultrasound-aided-etching on the fabrication of lithium niobate ridge devices," *2012 Electronic Technology Symposium*, AO-18, Kaohsiung, Jun. 1, 2012.
13. 陳柏宇，陳殿榮，王子建，莊棋凱，吳俊傑, "向列型液晶攙雜高分子製作快速響應 VA-IPS 顯示模式", 2011 *Annual Meeting of ROC Taiwan Liquid Crystal Society*, 逢甲大學, 台中, Dec.16, 2011.
14. Tzyy-Jiann Wang and Yu-Chen Cheng, "Novel integrated-optic polarization rotator with obliquely deposited columnar thin film," *2011 International Photonics Conference*, Tainan, Dec. 8-10, 2011.
15. Tzyy-Jiann Wang, Kuo-Hao Lee, Ping-Lun Chen, Wan-Chien Yang, Chia-Lin Lee, and Jian-Wen Du, "Sensitivity analysis of magneto-optic surface-plasmon-resonance sensor using Co/Au films," *2011 International Photonics Conference*, Tainan, Dec. 8-10, 2011.
16. Tzyy-Jiann Wang, Chi-Kai Chaung, Tien-Jung Chen, Bo-Yu Chen, "Nematic liquid-crystal optical channel waveguide in etched glass groove," *Taiwan Vacuum Society 2011 Annual Meeting*, Hsinchu, Oct. 28, 2011.
17. Tzyy-Jiann Wang, Hsing-Hao Lee, Yao-Te Wang, "Single-mode zinc-oxide nonlinear optical waveguide with large mode area," *Taiwan Vacuum Society 2011 Annual Meeting*, Hsinchu, Oct. 28, 2011.

18. Tzyy-Jiann Wang, Xiang-Nan Xiao, Jheng-Yu He, "Fabrication of Racetrack Microring Filter on $LiNbO_3$," *2011 Electronic Technology Symposium*, AO-03, Kaohsiung, Jun. 10, 2011.
19. Tzyy-Jiann Wang, Chih-Bin Fan, and Hung-Yu Lin, "Smoothing the etched surface of lithium niobate by post-etching with proton exchange process," *2011 Electronic Technology Symposium*, AP-11, Jun. 10, 2011.

(c)專利

1. Tzyy-Jiann Wang and Yueh-Hsun Tsou, *Method of forming an undercut microstructure*, US patent, No. 8377320B2, 2010/7/23~2031/6/21.
2. 王子建、鄒岳勳，製作底切蝕刻微結構的製程方法，中華民國專利號碼發明第 I 404136 號，2013/8/1~2030/4/12。
3. Tzyy-Jiann Wang and Chih-Wuei Hsieh, *Method and device for characterizing analyte using electro-optically modulated surface plasmon resonance based on phase detection*, US patent, No. 7728979B2, 2010/6/1~2030/6/1.
4. 王子建、謝志威，相位檢測之電光調變表面電漿共振以檢測待測物之方法及其裝置，中華民國專利號碼發明第 I 324253 號，2010/5/1~2027/1/14。

(d)技術移轉

(e)專書及專章

(f)作品

其他表現

(a) 近五年內最具代表性之學理創新或應用技術突破

1. 提出具有創新環形電極設計之波長可調微環形元件，藉由在微環形波導上方的兩側製作環形電極，可使原先垂直配向的正向列型液晶分子由垂直排列轉向為水平排列，且對於任何位置的微環形波導，液晶分子皆沿著徑向排列且與環形路徑相垂直，如此可獲得最佳的共振波長調變效果。此研究中的 TE 極化濾波波長調變範圍、與兩個極化的波長電光調變率皆為最佳值，相關研究成果已在 SCI 國際期刊 *Optics Express* 上發表。
2. 提出使用創新的製程方法，結合選擇性離子佈植、化學蝕刻、與表面張力重塑等製程技術，成功製作世界首例在電光及非線性光學晶體上的微碟形共振元件，直徑 20μm 的鈮酸鋰微碟形共振元件的品質因素可達 2.6×10^4、自由頻譜範圍高達 16.43nm。所製作的鈮酸鋰微碟形元件，未來可開展將微碟形優良選頻共振特性，與電光效應、非線性光學效應結合的先進光學應用，此一研究成果已在 SCI 國際期刊 *Optics Express* 上發表。
3. 提出創新具有液晶自動重排作用之波長可調微環形元件，結構中使用負向列型液晶與未摩擦配向層，當施加電壓時，液晶分子受到脊形波導凸起作用，自動沿著波導的環形方向排列，此一沿著環形方向的均勻液晶排列分佈，可有效調變微環形元件的共振波長。實驗結果顯示 TM 與 TE 模態的共振波長調變範圍可高達 13nm 與 2.1nm，遠大於先前論文的調變效果。所提出的新型微環形元件具有大調變範圍、雙極化調變、元件製作與標準半導體製程相容等特點，此一研究成果已在 SCI 國際期刊 *Optics Express* 上發表。
4. 提出利用斜向蒸鍍所製作的光學非等向性薄膜來作為光波導披覆層，以誘導產生光波導中的混成極化模態，使傳播光場產生極化旋轉，以構成積體光學極化轉換器。此一設計可在任何種類或結構的光波導上製作積體光學極化轉換器。所設計的元件具有極化轉換效率高、極化訊熄比大、插入損失小、與可適用於任何種類光波導的特點，此一研究成果已在 SCI 國際期刊 *Optics Express* 上發表。
5. 提出創新的製作底切微結構之製程方法，可在鈮酸鋰上製作僅以一微支柱與基板連接的半懸浮結構。此結構可藉由位於厚光阻保護區的支柱所支撐，因此具有比懸浮結構較佳的機械強度。此一創新製程方法已在 SCI 國際期刊 *Applied Physics A* 上發表，並獲得美國專利(專利號碼：8377320B2)與中華民國發明專利(專利號碼：發明第 I 404136 號)。

(b) 近五年協助產業發展績效

1. 與中山科學研究院合作，從事高峰值功率 Q 開關光纖雷射之研發，於 2010 年完成為期三年的合作研究計畫。
2. 擔任經濟部科專計畫審查委員(2010/12~)

(c) 國內外之成就與榮譽

1. 列名於 *Who's Who in Science and Engineering* (2008~)
2. 列名於 *Who's Who in the World* (2009~)
3. 列名於 *Who's Who in America* (2009~)
4. 擔任下列國際 SCI 期刊的論文審稿委員(Reviewer or Referee)：
   Optics Express、*Optics Letters*、*Journal of Lightwave Technology*、*IEEE Journal of Selected Topics in Quantum Electronics*、*IEEE Photonics Technology Letters*、*Journal of Optical Society of America B*、*Applied Optics*、*Biosensors & Bioelectronics*、*IEEE Sensors Journal*、*Optical Engineering*、*Optics & Laser Technology*

(d) 在人才培育、研究團隊建立及服務方面的重要貢獻及成就：獲得各類教學獎項；所指導之學生曾獲之獎項及特出之表現

1. 指導本校光電系學生南平、林昇榆、姚信宇、張誠，以專題題目「腦電波量測分析儀」，獲得第 9 屆電資學院金手獎佳作。
2. 指導本校光電系學生南平、林昇榆、姚信宇、張誠，以專題題目「腦電波量測分析儀」，獲得光電系 102 學年度專題競賽第一名。
3. 指導本校光電系學生張坤和、林佑軒、彭皇凱、廖偉辰，以專題題目「可程式化光波長濾波器」，獲得光電系 102 學年度專題競賽第三名。
4. 指導本校光電系學生王思文、徐阡、梁凱傑，以專題題目「高功率二氧化碳雷射系統控制器之研製」，獲得光電系 101 學年度專題競賽第一名。
5. 指導本校光電系碩士班學生莊棋凱，於 2011 年 10 月參加"台灣真空學會論文發表會"，以「玻璃蝕刻凹槽中之向列形液晶通道光波導」論文，榮獲學會論文優等獎。
6. 指導本校電資專班學生李佳陵，於 2011 年 10 月參加"太陽光電第三屆論壇大專研發成果產品應用競賽"，以參賽作品「彎道警示燈」，榮獲產品應用組第二名。
7. 指導本校電資專班學生李佳陵，以專題題目「應用磁光效應於表面電漿共振檢測之研究」，獲得通過國科會 100 年度大專學生參與專題研究計畫。
8. 指導本校光電系學生李佳陵、毒健文、陳平倫、楊琬茜，以專題題目「應用磁光效應於表面電漿共振檢測之研究」，獲得光電系 99 學年度專題競賽第三名。

陳殿榮教授

實驗 (研究) 室名稱：液態晶體實驗室(II)
聯絡電話：4637
e-mail：tjchen@ntut.edu.tw
網址： http://www.eo.ntut.edu.tw/files/11-1045-3176-1.php
專長

1. 液晶顯示器光學	2. 液晶光電元件	3. 光纖元件及感測	4.光電工程

8.近五年成果

A. 期刊論文

1. King-Lien Lee, Jin-Jei Wu, Tien-Jung Chen, Yeong-Shiun Wu, Fu-Chen Chen and Shu-Hsia Chen, 2011, "Brightness enhancement with a fingerprint chiral nematic liquid crystal", *Jpn. J. Appl. Phys.*, Vol .50, 032601-1 –032601-5. (SCI)

2. Jin-Jei Wu, Shui-Shang Hu, Chia-Chun Hsu, Tien-Jung Chen, King-Lien Lee, and Qing Li, 2012, "a Director model for the electro-optics of blue phase liquid crystal", *IEEE Photon. Technol. Lett.*, Vol .24, 503-505. (SCI)

3. Shui-Shang Hu, Jin-Jei Wu, Chia-Chun Hsu, Tien-Jung Chen, and King-Lien Lee, 2012, "Simulation of the in-plane-switching blue-phase liquid crystal using the director model", *Opt. Express*,Vol.20, 23954-23959. (SCI)

4. Tzyy-Jiann Wang, Shun-Chen Yang, Tien-Jung Chen, and Bo-Yu Chen, 2012, "Wide tuning of SiN microring resonators by auto-realigning nematic liquid crystal", *Opt. Express*, Vol.20, 15853-15858. (SCI)

5. Tien-Jung Chen*, Guan-Jhong Lin, Bo-Yu Chen, Jin-Jei Wu, Ying-Jay Yang, 2012, "Fast response liquid crystal display by the VA-IPS display mode with nematic liquid crystal and polymer networks", *Proc. SPIE*, Vol. OP211, 847513-1–847513-6. (EI)

6. Tzyy-Jiann Wang, Chi-Kai Chaung, Wan-Jing Li, Tien-Jung Chen, and Bo-Yu Chen, 2013, "Electrically Tunable Liquid-Crystal-Core Optical Channel Waveguide", J. Lightwave Technol. , Vol. 31, 3570-3574. (SCI)

7. Tzyy-Jiann Wang, Wan-Jing Li, and Tien-Jung Chen, 2013, "Radially realigning nematic liquid crystal for efficient tuning of microring resonators", *Opt. Express*, Vol.21, 28974-28979. (SCI)

8. Jin-Jei Wu, Shui-Shang Hu, Chia-Chun Hsu, Tien-Jung Chen, and King-Lien Lee, 2013, "Electro optical characteristics of high-pretilt twisted liquid

crystal pi-cells", *Appl. Phys. Expr.*, Vol. 6, 012201-1-012201-3. (SCI)

9. Chia-Chun Hsu , Shui-Shang Hu, Tien-Jung Chen , Chen-Yu Lin , Sin-Yan Tsai , and Jin-Jei Wu, 2014, "The essentials of the Kerr effect for polymer-stabilized blue phase liquid crystal", *Opt. Commun*., Vol.322, pp.78-81. (SCI)

10. Guan-Jhong Lin, Tien-Jung Chen*, Bo-Yu Chen, Jin-Jei Wu, and Ying-Jay Yang, 2014, "Enhanced electro-optical properties of vertically aligned in-plane-switching liquid crystal displays employing polymer networks", *Opt. Mater. Express*, Vol.4, pp.1657-1667. (SCI)

11. G. J. Lin, T. J. Chen*, Y. W. Tsai, Y. T. Lin, J. J. Wu, and Y. J. Yang, 2014, "Performance enhancement using a non-uniform vertical electric field and polymer networks for in-plane switching of multi-pretilt, vertically aligned liquid crystal devices", *Opt. Lett.*, Vol. 39, pp. 6225-6228. (SCI)

12. Guan-Jhong Lin, Tien-Jung Chen*, Yu-Ting Lin, Jin-Jei Wu, and Ying-Jay Yang, 2014, "Effects of chiral dopant on electro-optical properties of nematic liquid crystal cells under in-plane switching and non-uniform vertical electric fields", *Opt. Mater. Express*, Vol. 4, pp. 2468-2477. (SCI)

13. Tzyy-Jiann Wang, Chi-Kai Chaung, Tien-Jung Chen, and Bo-Yu Chen, 2014, "Liquid Crystal Optical Channel Waveguides with Strong Polarization-Dependent Mode Tunability", J. Lightwave Technol. , Vol. 32, 4289-4295. (SCI)

B. 研討會論文

1. K.-C. Kao, T.-J. Chen, and J.-J. Wu, 2010, "Electro-optical Characteristics of Polymer Induced HAN Liquid Crystal Cell", 2010 Taiwan Display Conference, Apr.29, 成功大學.
2. 許行遠，陳殿榮，吳俊傑, 2010, "高分子配向液晶盒預傾角與響應時間關係的研究", 2010 Taiwan Display Conference, 2010 Taiwan Display Conference, Apr.29, 成功大學.
3. Yi-San Hsieh and Tien-Jung Chen, 2010, "Bistable Switching of Twisted-Bend and Twisted-Nematic in a Dual-Frequency Liquid Crystal cell", International Conference on Optics and Photonics in Taiwan,, Dec.3- Dec.4, 南台科技大學.
4. 謝育展，陳殿榮, 2010, "向列型液晶摻雜高分子製作HAN顯示模式", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.17, 台南.
5. 謝依珊，陳殿榮, 2010, "高分子穩定型之雙穩態液晶顯示元件", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.17, 台南.
6. Tzyy-Jiann Wang, Chi-Kai Chaung, Tien-Jung Chen, Bo-Yu Chen, 2011, "Nematic liquid-crystal optical channel waveguide in etched glass groove", Taiwan Vacuum Society Annual Meeting, Oct. 28, 2011.
7. Pao-Ken Chen and Tien-Jung Chen, 2011, "Bistable twist states in a polymer stabilized nematic liquid crystal cell", International Photonics Conference, Dec.8- Dec.10,成功大學.
8. Chia-Chun Hsu, Shui-Shang Hu, Tien-Jung Chen, and Jin-Jei Wu, 2011, "Simulation of the electro-optic characteristics of blue phase liquid crystal with a director model", International Photonics

Conference, Dec.8- Dec.10, 成功大學.

9. 陳柏宇，陳殿榮，王子建，莊棋凱，吳俊傑, 2011, “向列型液晶攙雜高分子製作快速響應VA-IPS顯示模式”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.16, 逢甲大學.
10. 陳葆根，陳殿榮，吳俊傑, 2011, “高分子穩定型雙穩態液晶顯示元件之光電特性研究”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.16, 逢甲大學.
11. Shui-Shang Hu, Chia-Chun Hsu, Jin-Jei Wu, and Tien-Jung Chen, 2011, “Optical simulation and analysis of the in-plane-switching blue-phase liquid crystal by a director model”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.16, 逢甲大學.
12. 林冠輝，陳殿榮，顏佑華，翁嘉君, 2011, “液晶顯示元件OCB mode光電特性改善之研究”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.16, 逢甲大學.
13. 楊礎豪，姚怡安，吳俊傑，陳殿榮, 2011, “觸控液晶顯示器之光學優化設計”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.16, 逢甲大學.
14. T.-J. Chen, G.-J. Lin, B.-Y. Chen, J.-J. Wu, Y.-J. Yang, 2012, “ A fast-response liquid crystal display by the VA-IPS display mode with nematic liquid crystal and polymer networks”, SPIE International symposium on Optics + Photonics, Aug. 12-16, San Diego, California, United States.
15. H. I. Liao, G. J. Lin, Y.Chang, B. R. Lin, T. J. Chen, J. J. Wu, and Y. J. Yang, 2012, “Effect of the mixed polyimides on the pretilt angle and electro-optical properties for the hybrid aligned nematic liquid crystal cell”, Optics & Photonics Taiwan, International Conference, Dec.6- Dec.8, 台灣大學.
16. Tzyy-Jiann Wang, Shun-Chen Yang, Wang-Jing Li, Tien-Jung Chen, and Bo-Yu Chen, 2012, “Widely-tunable silicon nitride microring resonators by liquid crystal auto- realigning”, Optics & Photonics Taiwan, International Conference, Dec. 6-8, 台灣大學.
17. 廖軒逸，林柏榮，林冠中，陳殿榮，吳俊傑, 2012, “混合polyimide的配向層製作OCB液晶元件及光電特性研究”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.21, 中山大學.
18. 謝欣容，陳殿榮，吳俊傑, 2012, “高分子材料研製雙穩態液晶顯示元件及光電特性研究”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.21, 中山大學.
19. 蔡譯緯，陳殿榮，林冠中，吳俊傑, 2012, “非均勻電場配向研製IPS-VA液晶顯示器及光電特性研究”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.21, 中山大學.
20. 黃建幃，陳殿榮，吳俊傑, 2012, “高分子配向製作快速響應IPS液晶顯示模式”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.21, 中山大學.
21. 李婉靖、王子建、楊舜臣、陳殿榮、陳柏宇, 2012, “使用自動重排向列型液晶之寬調諧氮化矽微環形濾波器”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec. 21, 中山大學.
22. Y.-T. Lin, G.-J. Lin, T.-J. Chen, Y.-W. Tsai, J.-J. Wu, Y.-J. Yang, 2013, “Electro-optical properties of cholesteric liquid crystal cell with negative dielectric anisotropy driven by in-plane switching”, Optics & Photonics Taiwan, International Conference, Dec.5- Dec.7, 中央大學.
23. B. R. Lin, G. J. Lin, T. J. Chen, J. J. Wu, and Y. J. Yang, 2013, “Effect of the pretilt angle on the electro-optical performance of optically compensated bend liquid crystal cells with mixed-polyimide alignment”, Optics & Photonics Taiwan, International Conference, Dec.5- Dec.7, 中央大學.
24. 林柏榮，吳昭霆，林冠中，陳殿榮，吳俊傑，楊英杰, 2013, “Polyimide配向膜及高分子網製作OCB液晶元件及光電特性比較”, Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.20, 彰化師範大學.
25. Y.-T. Lin, G.-J. Lin, T.-J. Chen, J.-J. Wu, Y.-J. Yang, 2013, “Study on Electro-optical Properties of Cholesteric Liquid Crystal Cells with the Negative Dielectric Anisotropy by In-plane/Vertical Field”,

Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.20, 彰化師範大學.

26. 林冠輝，陳殿榮，吳俊傑, 2013, "研製電場作用的高分子穩定型液晶顯示元件", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.20, 彰化師範大學.
27. G.-J. Lin, T.-J. Chen, B.-Y. Chen, J.-J. Wu, Y.-J. Yang, 2014, "Effect of hybrid polyimides on electro-optical performance of optically compensated bend display mode", SPIE International symposium on Optics + Photonics, Aug. 17-21, San Diego, California, United States.
28. G.-J. Lin, T.-J. Chen, B.-Y. Chen, J.-J. Wu, Y.-J. Yang, 2014, "Study of Fast Response on Vertically Aligned In-plane Switching Liquid Crystal Display with Polymer Networks", International Liquid Crystal Conference, Jun. 29-Jul. 4, Dublin, Ireland.
29. Tien-Jung Chen, Guan-Jhong Lin, Yu-Ting Lin, Jin-Jei Wu, and Ying-Jay Yang, 2014, "Electro-optical Performance of Cholesteric Liquid Crystal Cells with the Negative Dielectric Anisotropy by Switching In-plane and Vertical Field", International Liquid Crystal Conference, Jun. 29-Jul. 4, Dublin, Ireland.
30. Guan-Jhong Lin, Yu-Ting Lin, Tien-Jung Chen, Jin-Jei Wu, and Ying-Jay Yang, 2014, "Eco-Displays: Cholesteric Liquid Crystal Components Driven by a Three-Terminal-Electrode Architecture with a Long-Term Unplugged State", Optics & Photonics Taiwan, International Conference, Dec.4- Dec.5, 中興大學.
31. G. J. Lin, T. J. Chen, B. Y. Chen, Y. T. Lin, Y. W. Tsai, J. J. Wu, and Y. J. Yang, 2014, "Enhanced Electro-Optical Performance of In-Plane Switching Vertically Aligned Liquid Crystal Devices Using Surface Polymer Stabilized Networks", Optics & Photonics Taiwan, International Conference, Dec.4-Dec.5, 中興大學.
32. Z. T. Wu, B. R. Lin, G. J. Lin, T. J. Chen, J. J. Wu, and Y. J. Yang, 2014, "Study of Electro-Optical Properties of Optically Compensated Bend Liquid Crystal Cells with Polymer Networks", Optics & Photonics Taiwan, International Conference, Dec.4- Dec.5, 中興大學. NSC101-2221-E-027-114-MY2
33. Yun-Tzu Lin, Guan-Jhong Lin, Tien-Jung Chen, Ying-Jay Yang, Jin-Jei Wu, 2014, "A study of the plane-parallel aligned liquid crystal microlens", Optics & Photonics Taiwan, International Conference, Dec.4- Dec.5, 中興大學.
34. S. Y. Tsai, G. J. Lin, S. S. Hu, T. J. Chen, Y. J. Yang, and J. J. Wu, 2014, "Effect of cell thickness on optoelectric properties of blue phase liquid crystal displays", Optics & Photonics Taiwan, International Conference, Dec.4- Dec.5, 中興大學.
35. G. J. Lin, T. J. Chen, B. Y. Chen, Y. T. Lin, Y. W. Tsai, B. R. Lin, J. J. Wu, and Y. J. Yang, 2014, "Effect of polymeric networks on electro-optical properties of in-plane switching vertically aligned liquid crystal devices", International Electron Devices and Materials Symposium, Nov.20-Nov.21, 花蓮.
36. Guan-Jhong Lin, Tien-Jung Chen, Bo-Yu Chen, Jin-Jei Wu, and Ying-Jay Yang, 2014, "Improved

electrical-optical performance of vertically aligned liquid crystals using interdigital electrodes and cross-linking polymers", 18th Micro and Nano System Technology Conference, Aug.21-Aug.22, 台南.

37. 廖柏凱，林冠中，陳殿榮，吳俊傑，2014,"表面聚合高分子網對膽固醇液晶結構之影響"，Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。
38. 李定穎，林冠輝，陳殿榮，吳俊傑，2014,"高分子材料研製雙穩態液晶顯示元件之新型技術"，Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。
39. B. R Lin, G. J. Lin, T. J. Chen, J. J. Wu, and Y. J. Yang, 2014, "Effect of polymer networks on the electro-optical properties of cholesteric liquid crystal displays", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。
40. Y.-T. Lin, G.-J. Lin, T. -J. Chen, Y.-J. Yang, and J.-J. Wu, 2014, "A study of the liquid crystal microlens", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。
41. Q. H. Qiu, T. -J. Chen, J. H. Lin, J. J. Wu, 2014, "A simulation for a vertical-field-switch blue phase liqui crystal cell bt the director model", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。
42. 林桂帆，陳殿榮，吳俊傑，2014，"利用里曼雷射量測液晶盒相位特性之探討"，Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。
43. T. W. Hsu, T. J. Chen, Y. H. Chen, K. L. Lee, J. J. Wu, 2014, "Moire Phenomena in Liquid Crystal Display", Annual Meeting of ROC Taiwan Liquid Crystal Society, Dec.19, 新竹。

C. 目前有效的專利

1. Tien-Jung Chen and Shu-Hsia Chen, "光纖中波導模的選擇裝置及其製作方法", R.O.C. Patent No.074716 (1995).
2. Tien-Jung Chen and Shu-Hsia Chen, "An apparatus for selecting waveguide modes in optical fiber and the method of manufacturing the same", US Patent 5,586,205 (1996).
3. Tien-Jung Chen and Shu-Hsia Chen, "光纖干涉儀及其干涉方法", R.O.C.Patent No.196883 (2004).
4. Tien-Jung Chen and Shu-Hsia Chen, "Dual mode Fiber-optic interferometer with circular-core fibers and birefringent modal filters and an interfering method thereof ", US Patent No.7030992 (2006).

D. 執行的研究計畫

1. 九十八年度國科會計畫(兩年期) "高分子配向技術研製高亮度液晶顯示元件及光電特性研究" (編號NSC 98-2221-E-027-010-MY2)

2. 一百年度國科會計畫“新型雙穩態及動態液晶顯示元件之研製及光電特性之研究”(編號 NSC 100-2221-E-027-052)

一百零一年度國科會計畫(兩年期)“快速切換雙穩態及動態液晶顯示元件之研製及光電特性之研究”(編號 NSC 101-2221-E-027 -114 -MY2)

陳隆建 教授

實驗 (研究) 室名稱：半導體材料暨光電元件製成實驗室

聯絡電話：02-27712171 轉 4634

e-mail：ocean@ntut.edu.tw

網址：http://wwwoe.web.ntut.edu.tw/files/11-1045-3106-1.php

研究聚焦領域：□ H：健康科技　□ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長：1. 發光二極體(LED)研製 2. 太陽能電池(Solar cell)研製 3. III-V 族化合物半導體/氧化物半導體元件製程與分析 4. 奈米材料與製程

9. 近年重要論文及著述

(a)期刊論文

2014

1. **L. C. Chen***, M. H. Chiang, Ag/Ni/Multilayer graphene reflective ohmic contacts with p-type GaN, Sci. Adv. Mater. **6**(2014) 159-163. (2014) (SCI, 2012 MATERIALS SCIENCE, MULTIDISCIPLINARY, Impact Factor: 2.509, Rank: 45/241)

2. C. H. Hsu, **L. C. Chen*,** X. Y. Zhang, Effect of the Cu Source on Optical Properties of CuZnO Films Deposited by Ultrasonic Spraying, Materials **7**(2) 1261-1270. (2014) (SCI, 2012 MATERIALS SCIENCE, MULTIDISCIPLINARY, Impact Factor: 2.247, Rank: 55/241)

3. C. H. Hsu, J. R. Wu, Y. T. Lu, D. J. Flood, A. R. Barron, **L. C. Chen*,** Fabrication and characteristics of black silicon for solar cell applications: An overview, Mater. Sci. Semicond. Process. **25**(2014) 2-17. (2014) (SCI, 2012 ENGINEERING, ELECTRICAL & ELECTRONIC , Impact Factor: 1.338, Rank: 95/243)

4. C. H. Hsu, J. R. Wu, **L. C. Chen***, P. S. Chan and C. C. Chen, Enhanced performance of dye-sensitized solar cells with nanostructure graphene electron transfer layer, Adv. Mater. Sci. Eng. **2014**(2014) 107352. (2014) (SCI, 2012 MATERIALS SCIENCE, MULTIDISCIPLINARY, Impact Factor: 0.500, Rank: 202/241)

5. **L. C. Chen***, W. W. Lin, and C. A. Chiou, Relaxation of stress in GaN-based light-emitting diodes on stainless steel substrate by plasma etching using a mask of silver nanoparticles, Sci. Adv. Mater. **6**(2014) 1179-1183. (2014) (SCI, 2012 MATERIALS SCIENCE, MULTIDISCIPLINARY, Impact Factor: 2.509, Rank: 45/241)

6. C. H. Hsu**, L. C. Chen*** and J. R. Wu, Prepared and characteristics of ZnO:YAG/silicon nanostructure diodes prepared by ultrasonic spraying, Int. J. Photoenergy **2014**(2014) 128235. (2014) (SCI, 2012 OPTICS, Impact Factor: 2.663, Rank: 10/80)

7. **L. C. Chen***, C. H. Hsu, X. Y. Zhang and J. R. Wu, Low-cost ZnO:YAG-based metal-insulator-semiconductor white light-emitting diodes with various insulators, Int. J. Photoenergy **2014**(2014) 959620. (2014) (SCI, 2012 OPTICS, Impact Factor: 2.663, Rank: 10/80)

8. C. H. Hsu, C. C. Lai, **L. C. Chen*** and C. P. Shun, Enhanced performance of dye-sensitized solar cells with graphene/ZnO nanoparticles bilayer structure, J. Nanomater. **2014**(2014) 748319. (2014) (SCI, 2012 MATERIALS SCIENCE, MULTIDISCIPLINARY , Impact Factor: 1.547, Rank: 95/241)

9. **L. C. Chen*,** C. H. Hsu, P. S. Chan**,** X. Y. Zhang and C. J. Huang Improving the performance of dye-sensitized solar cells with TiO2/graphene/TiO2 sandwich structure, Nanoscale Res. Lett., **9**(2014) 380. (2014) (SCI, 2013 MATERIALS SCIENCE, MULTIDISCIPLINARY, Impact Factor: 2.481, Rank: 53/251)

10. C. H. Hsu, **L. C. Chen***, J. R. Wu, Y. C. Chen, Preparation and Characteristics of IZO/InN/CIGS Heterostructure and Its Solar Cell Applications, J. Nanoelectron. Optoelectron. **9**(3) 334-337 (2014) (SCI, 2013 ENGINEERING, ELECTRICAL & ELECTRONIC, Impact Factor: 0.369, Rank: 217/248)

11. **L. C. Chen*** , C. A. Hsieh and X. Y. Zhang, Electrical Properties of CZO Films Prepared by Ultrasonic Spray Pyrolysis, Materials **7**(11) 7304-7313 (2014) (SCI, 2013 MATERIALS SCIENCE, MULTIDISCIPLINARY, Impact Factor: 1.879, Rank: 81/251)

(b)專書及專章

- 陳隆建 編著, 發光二極體之原理與製程 [第三版], 全華圖書股份有限公司, ISBN 978-957-21-7752-5
- 陳隆建 編著, LED 元件與產業概況 [第一版], 五南, ISBN 978-957-11-6825-8
- Lung-Chien Chen, Photodiodes - From Fundamentls to Application - Chapter 6 Si based ZnO ultraviolet photodiodes, INTECH, ISBN 978-953-51-0895-5.
- Lung-Chien Chen, Nanotechnology Series Multi Volume Set: 1to 10 Volumes, Volume 8 : ElECTRONICS AND PHOTOVOLTAICS, Chapter 13 GaN-Based Light-Emitting Diodes with Nanostructure, STUDIUM PRESS LLC, ISBN 1-62699-008-5.
- Lung-Chien Chen, Nanotechnology：Bioimaging Volume 12 - Chapter 5 Nanophosphor ： Preparation and Nanoimage Applications, STUDIUM PRESS LLC, ISBN 1-62699-012-3.

10. 其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

➢ **代表性之學理創新、應用技術突破**

(一) InGaN/GaN 發光二極體性能之提升

A. AlN 彎曲狀螺旋緩衝層

2012 年，本實驗室利用射頻反應式磁控濺鍍機成長以傾斜角透過載台旋轉方式沉積 AlN 彎曲螺旋緩衝層，作為 GaN 系發光二極體之緩衝層，在電流 20mA 的注入下，相較傳統 AlN 緩衝層 LED 結構，約可提升 28.6%的效率。此一結果已刊登在 J. Nanomater. **2012** (2012) 409123。

B. 雷射鑽孔技術應用於 LED 散熱

2012 年，本實驗室利用研磨技術將 LED 晶片厚度研磨至 120μm，接著蝕刻 LED 晶片表面到 N-GaN 層，於 N-GaN 表面使用雷射鑽孔技術製作一貫通孔。製作電極(Ni/Au)於 P-GaN 及電極(Au/Cr)於 N-GaN 上方，透過 Au 薄膜在晶片的側邊來當作背部導熱層，在注入 350mA 電流條件下分別量測之光強度，有雷射鑽孔為 45.2 mW 傳統無鑽孔之 LED 為 39 mW，此一結果以刊登在 Journal of Vacuum Science & Technology B **30** (2012) 031213。同年接著進行延伸研究，透過雷射鑽孔應用之後將其 LED 晶片放置於 $CuSO_4$ 的銅電解液當中浸泡，透過電鍍方式成長銅薄膜當作散熱連接層使用，更進一步提高散熱效率，量測到在電流 500mA 注入下，透過電鍍銅薄膜之導熱層與傳統 LED，量測之光強分別為 54.36 與 45.12mW，測得熱阻值分別為有電鍍銅之導熱層為 8.4℃/W 與傳統 LED 17.4℃/W，此一結果已刊登在 Mater. Sci. Semicond. Process, **16** (1) (2013) 58-61。

C. 軟性基板轉移技術

2013 年，本實驗室利用雷射剝離技術的對基板進行轉移。將 LED 和替代基板鍵合並且藉由雷射剝離(Laser lift off, LLO)的技術成功將藍寶石基板舉離，接著再將可撓式的不鏽鋼基板(Stainless steel foil, SSF)和 LED 結構鍵合並且利用導電銀膠當作黏著層達到歐姆接觸的效果，主要目的在於如何減化轉移技術的複雜度與觀察應力對多重量子井(MQW)的影響。

D. P 型氮化鎵歐姆接觸之特性研究

2013 年，本實驗室主要藉由射頻反應式磁控濺鍍法來進行反射層之薄膜成長，在 p-GaN 表面濺鍍銀當作反射式電極，其中銀在可見光波段約有 90%以上的高反射率，接續濺鍍沉積鎳薄膜，使鎳銀接面具有較佳的特徵接觸電阻值，而後製備多層石墨烯，利用石墨烯具高機械強度和良好的導熱特性，降低銀在熱退火中所產生之團聚效應並增加熱穩定性以維持薄膜的高反射率，此外石墨烯材料兼具良好的 UV 光穿透特性和電子遷移率，製作成發光二極體元件後反射式電極的製作可增加元件整體光萃取效率，且在 p-GaN 與正電極的接觸電阻下降，光輸出功率可增加 40%以上。

(二)液相化學沉積技術成長 ZnO、MnZnO 和 GaSb 及磁光效應的研究

2012 年，本實驗室使用液相化學沉積法錳摻雜氧化鋅(ZnO:Mn)膜，在 Mn 約 1.5%時被證實有一吸收邊緣，分別在 2.74 和 2.84 eV，推測原因為 Mn 的摻雜引起的 s-d 和 P-D 之間相互作用或高濃度載子的交換，當 ZnO：Mn 膜被放置在磁場 0.5 T，被觀察到光致發光

（PL）所造成之位移約為 0.1 eV 和 85meV。此一結果已刊登在 Mater. Sci. Semicond. Process **15**(1) (2012) 80-85。

(三)固態混合型太陽能電池

2012 年本實驗室利用濺鍍法傾斜角成長斜向 InN 結構在上方以旋轉塗佈方式製作 PbPc 形成有機/無機混合式太陽能電池結構，可量測到短路電流(J_{SC})、開路電壓(V_{OC})和轉換效率(η)分別為 1.2 mA/cm ^{2}、0.6 V 及 0.144%。其結果已刊登在 Molecules ***17***(8) (2012) 9496-9505。

(四)新型螢光氧化物半導體之發光二極體

2013 年，本實驗室提出一種新的白光光源研究，主要是以氧化鋅(Zinc oxide，ZnO)為基礎材料，將釔鋁石榴石(Yttrium aluminium garnet，YAG)螢光粉摻入，並進一步探討受到摻雜過後的 ZnO 的晶體結構變化與發光特性，在元件部分則是沉積於 P-Si，製作出 ZnO:YAG/P-Si 的異質接面結構，以探討其元件特性。此一結果已刊登於 Int. J. Photoenergy 2014(2014) 128235. 同年將 ZnO:YAG 引入應用於金屬-氧化物-半導體(metal-insulator-semiconductor，MIS)結構，此一結果已刊登於 Int. J. Photoenergy 2014(2014) 959620.

- **國內外之成就與榮譽**

- Superlattices and Microstructures (SCI) - Reviewer (2009/2013)
- Nanotechnology (SCI) - Associate Editor (2011)
- Applied Surface Science (SCI) - Reviewer (2011)
- Materials Science in Semiconductor Processing (SCI) - Editorial Member (2011/2015)/ Invited review (2013)
- Hans Advances in Condensed Matter Physics - Editorial Board member (2012)/ Editorial member(2015)
- Physical Chemistry Chemical Physics review (SCI) – Reviewer (2013)
- Materials Science and Engineering B (SCI) – Reviewer (2012/2013)
- Journal of Nanomaterials (SCI) – Reviewer (2013)
- Reviews in Advanced Sciences and Engineering – Guest Editor (2013)
- The Optical Society - Senior Member (2014)

Open Chemistry Journal - Assistance Editor (2015)

李金連教授

實驗 (研究) 室名稱：光電產業分析與技術創新實驗室

聯絡電話：02-27712171#4622

e-mail：kllee@ntut.edu.tw

網址：http://www.eo.ntut.edu.tw/files/11-1045-3175-1.php

研究聚焦領域：□ H：健康科技　　□ I：智慧整合科技
■ G：綠色科技　　□ H：人文與創新元素

10. 近年重要論文及著述

(a) 期刊論文

1. Jie-Wen Chen, King-Lien Lee*, Jin-Jei Wu, Chen-Yu Lin, "Design a backlight system to a LCD of vertical-field-swithing blue phase", Optik 125,**(2014)**6713-6715.

2. King-Lien Lee*, Jie-Wen Chen, "Process of Protoype Design in Innovative Function", GPEM,**(2014)** Vol.3 Iss.1, PP.1-9

3. Jin-Jei Wu, Shui-Shang Hu*, Chia-Chun Hsu, Tien-Jung Chen, and King-Lien Lee, "Electro-optical characteristics of high-pretilt twisted liquid crystal pi-Cells "**,** Applied Physics Express 6,**(2013)**012201/SCI

4. Shui-Shang Hu . Jin-Jei Wu*, Chia-Chun Hsu , Tien-Jung Chen, and King-Lien Lee, "Simulation of the in-plane-switching blue-phase liquid crystal using the director model", Optic Express 20, **(2012)** 23954/SCI

5. Jin-Jei Wu*, Shui-Shang Hu, Chia-Chun Hsu, Tien-Jung Chen, King-Lien Lee, and Qing Li "Director model for the electro-optics of blue-phase liquid crystal", IEEE PHOTONICS TECHNOLOGY LETTERS 24, **(2012)**503/SCI

6. King-Lien Lee*, and Kun-Yu He "Effect of Micro-Structural Light Guide Plate on Source of Linearly Polarized Light", Journal of lightwave technology 29**(2011)** pp.3327-3330/SCI

7. King-Lien Lee*, Jin-Jei Wu, Tien-Jung Chen, Yeong-Shiun Wu, Fu-Chen Chen, and Shu-Hsia Chen, "Brightness Enhancement with a Fingerprint Chiral Nematic Liquid Crystal", Japanese Journal of Applied Physics 50 (**2011**) 032601 / SCI

8. Shu-Jen Hu*, Ling-Huey Su, King-Lien Lee, J. C. Chen, An-Chi Huang, "Using TRIZ Methods in Product Design and Improvement of a Presenter Mouse", Key Engineering Materials 486 (**2011**) pp. 13-16 / EI

9. Lee King-Lien*, Yin-Tsung Chang & Jin-Jei Wu, "Process of a Refined Prototype Design Integrating Designing the Theory of Inventive Problem-Solving and Systematic Controlling Variables Method ", **2011** APBITMS Paper 1119 / EI.

10. Lee King-Lien*, Chih-Hsiung Ku, and Chao-Chia heng, "New prototype design process integrating designing around existing patents and the theory of inventive problem-solving", American Society for Engineering Education, **2011** / EI

11.Chih-Hsiung Ku, Wen-Cheng Chen, Lee King-Lien and Chao-Chia heng, "How Do They Think? Engineering College Students' Conceptions of Electricity", American Society for Engineering Education, **2011** / EI.
12. Chao-Chia heng, Lee King-Lien and Chih-Hsiung Ku, "Instrumentation for Highly Accurate Index Measurement of Liquid ", American Society for Engineering Education, **2011** / EI.
13. Shu-Jen Hu*, Ling-Huey Su, King-Lien Lee, J. C. Chen, Chih-Heng Chang, "Applying TRIZ Methodology to Assist Product Improvement – Take Folding Bicycle as an Example", Key Engineering Materials Vol. 450 (**2011**) pp 27-30 / EI.
14. Si Chunlin & Lee King-Lien*, "The strategy of designing around existing patents in technology innovation - Case study of critical technology of OTFT", Journal of Chinese Entrepreneurship, Vol. 2 No. 3, **2010** pp. 270-281 / SSCI.
15. Cheng-Sz Wu*, Li-Yuan Kuo, Yuan-Hsin Cheng, King-Lien Lee, Tien-Jung Chen, Jin-Jei Wu, and Shune-Long Wu , "Study of Twisted Optically Compensated Bend Cell Using Patterned Alignment", Japanese Journal of Applied Physics 48 (2009) 081502 / SCI.
16. 創新矩陣在分析產業競爭又事中的應用探究-以有線電視產業提供光纖到府服務為例，台北科技大學學報，第四十三之一期，49-72
17. 設計新原型開發流程-統合專利迴避設計策略與發明解決問題理論，技術學刊，25(4),293-305, 2010
18. LED 背光模組中導光板的微結構與齊排列規則對光輝度與均齊度之影響,台北科技大學學報,42-2,37-51,2009
19. "On The Mobility of OTFT:An Innovative Designing and the Avoidance of Patent Infringement",台北科技大學學報,第 41 期之 2,2008
20. "Method for Measuring Twist Angle of Nematic Liquid Crystal Cell",Japanesejournal of Aoolyied Physics,45(11),8775-8777,2006,SCI
21. "情知意的理念在任事積至中之角色碳就,科學月刊,第 13 卷第 3 期,347-365,2005,
22. "A study of the Relationship between Patent Analysis and R&D Strategies in OTFT ",第 40 期之 1,2007
23. "先前之是在科學問題解決過程中角色的探討,物理教育期刊,第 6 卷第 1 期,43-60,2005
24.「科學與人生」通識課程規劃與教材發展之探究,科學月刊,第 280 期,2-11,2005
25. 從人文與科技的融合問題探究學校教育中之通識教育,科學月刊,第 268 期,20-29,2004
26. "350KM Transmission of 15-Channel 256-QAM Signals",journal of optical communication,23 779,2002
27. Gowin's Ves 啟發式理念在工專靜電學中的教學應用,物理教育學刊,第三卷第二期,75-87,2000
28. 大學通識教育課程規劃之實例研究,通識教育季刊,第七卷第一期,67-92,2000
29. 科學教育的 STS 理念在通識教育中之運用,通識教育季刊,第六卷第一期,77-98,1999
30. 從後現代主義觀點探究科學知識之解題,台北科技大學學報,第三十一之一期,55-78,1998
31. An Analysisi of Learner's Modes of Knoeledge from the doubtful viewpoint,台北科技大學學報,第三十一之二期,1998

32. 從兩種競爭的宇宙論模型看延遲判決性實驗,科學教育月刊,第 208,2-8,1998

(b) 研討會論文

1.Jie-Wen Chen, King-Lien Lee, and Shu-Jen Hu*, "A Backlight Module for Blue Phase Liquid Crystal Display", ILCC, Ireland, Aug, 2014

2.Jin-Jei Wu, Sin-Yan Tsai*, Sui-Shang Hu, Tien-Jung Chen, Ja-Hon Lin, King-Lien Lee and Ciung-Cheng Huang, "Kerr Effect in Blue Phase Liquid Crystal Cells with Various Thicknesses", ILCC, Ireland, Aug, 2014

3.Che-Yen Lin, King-Lien Lee, Po-Yu Tsai, Jie Wen Chen, "Design of directional light source for blue phase LCD",SPIE PA(2014), China

4.Jie-Wen Chen, Chan-Ching Wu, Yu-Ting Chen, Chih-Yuan Chou, King-Lien Lee, Jin-Jei Wu, "Design of a Blue Phase Liquid Crystal Backlight", Optics and Photonics Taiwan, International Conference (OPTIC 2012), PE-TH-I-(1)-5, Taipei, Taiwan, Dec. 6-8, 2012.

5. Lee King-Lien, Yin-Tsung Chang & Shu-Jen Hu , "Process of a Refined Prototype Design Integrating Designing the Theory of Inventive Problem-Solving and Systematic Controlling Variables Method ", The 2011 (Summer) International Conference on Asia Pacific Business Innovation and Technology Management, IEEExplore indexed by Engineering Index (EI) July 10-12, 2011, Dalian, China.

6. Lee King-Lien, Chih-Hsiung Ku, and Chao-Chia Cheng, "NEW PROTOTYPE DESIGN PROCESS INTEGRATING DESIGNING AROUND EXISTING PATENTS AND THE THEORY OF INVENTIVE PROBLEM-SOLVING ", American Society for Engineering Education, June 26 - 29, 2011, Vancouver, BC, Canada.

7.Chih-Hsiung Ku, Wen-Cheng Chen, Lee King-Lien and Chao-Chia Cheng, "How Do They Think? Engineering College Students' Conceptions of Electricity" , American Society for Engineering Education, June 26 - 29, 2011, Vancouver, BC, Canada.

8.Chao-Chia Cheng, Lee King-Lien and Chih-Hsiung Ku, "Instrumentation for Highly Accurate Index Measurement of Liquid " , American Society for Engineering Education, June 26 - 29, 2011, Vancouver, BC, Canada.

9. 李金連、洪健閔，"技術創新流程之主要機制的權重指標研究-以台灣平面顯示器之研發為例"，2011 第十二屆科技與管理學術研討會，國立台北科技大學，10 月 27 日，2011, ,ISBN : 978-986-02-9609-9.

10. Kun-Yu He & King-Lien Lee，"線偏振光於不同導光板微結構下對光輝度與均齊度的影響"， 2010 Taiwan Display Conference Proceedings, 台南國立成功大學-自強校區,2010 年 04 月 29~30 日 , ISBN : 978-957-28522-7-9.

11. 吳祥賓、李金連， "提供無線通用序列匯流排功能的主機板之關鍵成功因素-以 G 電腦公司為例"， 2010 年資訊科技國際研討會論文集，朝陽科技大學, 2010 年 04 月 23~24 日, ISBN: 978-986-7043-30-6。

12. Yu-Jih Chen and Lee King-Lien，"Design New Light Source to Improve Illumination and Uniformity Effects of Back-Light Unit "，台灣光電科技研討會，12 月 3~4 日，2010.

13. 李金連、楊薪傳、陳志恆，“高功率 LED 基板之散熱設計研發”，2010 彰雲嘉大學校院聯盟學術研討會”，彰化明道大學，12 月 3 日，2010.

14. 王偉毅、李金連，“專利侵權判定效率之探究 – 以背光模組中之創新導光板設計為例”，台灣光電科技研討會， 國立臺灣師範大學，12 月 11 日，2009.

15 吳宗明、李金連，“非對稱式電橋運用於 AC-LED 發光裝置之研究”，台灣光電科技研討會， 國立臺灣師範大學，12 月 11 日，2009.

16. 林德沛、李金連，“高科技產業之技術產權管理的營運績效指標知探究”，2009 年科技與管理研討會，國立台北科技大學，98 年 9 月 25 日.

17. 黃金臨、李金連，“企業之技術創新管理與期營運績效關係之初探 – 以台灣三類高科技產業為例”，2009 年科技與管理研討會，國立台北科技大學，98 年 9 月 25 日.

18. 吳毓庭、李金連，“The research of the optical defect inspection validity and scan method on the wafer- example by DRAM 70nm manufacturing process”，台灣光電科技研討會，2008.

19. Si Chunlin & Lee King-Lien, “The Strategy of Designing Around Existing Patents in Technology Innovation -- Case Study of Critical Technology of OTFT ”, EURAM2008, 14-17, May, 2008, Ljubljana.

20. 李金連、徐宏智、杜壯，“The Study of Constructing a Frame about Technological Innovation Management System – Case Study of the Technological Innovation about OTFT Carry Mobility ”, 2008 第九屆科技與管理國際學術研討會, 建國科技大學, 2008 年 10 月 2 日, ISBN: 978-986-825-29-5-0。

21. 楊貫榆、李金連，’LED 側入光式複合化導光板開發之探究’, 台灣光電科技研討會, 2007.

22. 李金連、徐宏智，’TRIZ 理念運用於 OTFT 電子遷移率的創新設計之探究’, 台灣光電科技研討會, 2007.

23.黃敏強、李金連，’設計 LCD 背光模組散熱機構主要關鍵因素之探究’-以 LED 作光源為例, 台灣光電科技研討會, 2007.

24. 李宗霖、李金連，’數位電視盒應用於汽車電子產業的成功關鍵因素之探究-以 A 科技為例’, 台灣光電科技研討會, 2007.

25. Hung Kuo-Fang, Lee King-Lien & Yeh Huey-Jiuan, “The Investigation of Apply the TRIZ theory to Innovate the New Product Development Model”, The Second Conference of Taiwan TRIZ Association, 國立清華大學, 12/05/2007.

26. 洪國芳、李金連，’TRIZ 理念下創新新產品開發模式之初探’, 2007 兩岸中小企業經營管理學術研討會, 2007/6.

27. Shu-Ming Tseng, Ching-Pin Yang, King-Lien Lee, and Kuen-Cherng Lin, ’The Efficiency of ODF Process for Small and Medium Size TFT-LCD Manufacturing in 3rd Generation Factories’, 台灣光電科技研討會, 2005.

(c)專利

序號	專利名稱	專利號碼	核發專利之國家及日期	專利型態	專利發明人	專利權有效期間	備註
1.	交流電發光二極體裝置	M393127	中華民國99年11月21日	新型	李金連、吳宗明	自2010年11月21日至2020年5月4日	
2.	具有提昇亮度與光均齊度之導光板及使用該導光板之發光裝置	M399994	中華民國100年3月11日	新型	李金連、楊貫榆	自2011年3月11日至2020年9月11日	

(d)專書及專章

序號	書名	作者	出版單位	發行日期	ISBN編號	備註
1.	基礎物理	楊宗哲、李金連、葉麗文、吳文義、李泗賓、戴仁欽	全華科技圖書股份有限公司	民國95年6月　初版	957-21-5294-7	
2.	物理【上冊】	楊宗哲、李金連、葉麗文、吳文義、李泗賓、戴仁欽	全華科技圖書股份有限公司	民國96年6月　初版	978-957-21-5818-0	
3.	物理【下冊】	楊宗哲、李金連、葉麗文、吳文義、李泗賓、戴仁欽	全華科技圖書股份有限公司	民國97年元月　初版	978-957-21-6113-5	
4.	選修物理【上冊】	楊宗哲、李金連、莊振益、葉麗文、吳文義、李泗賓、戴仁欽	全華科技圖書股份有限公司	民國97年6月　初版	978-957-21-6365-8	
5.	選修物理【下冊】	楊宗哲、李金連、莊振益、葉麗文、吳文義、李泗賓、戴仁欽	全華科技圖書股份有限公司	民國97年12月初版	978-957-21-6892-9	
6.	基礎物理（一）	楊宗哲、李金連、莊振益、李泗賓、簡麗賢、戴仁欽	全華科技圖書股份有限公司	民國99年2月　初版	978-957-21-7490-6	
7.	基礎物理(二)B 上冊	楊宗哲、李金連、莊振益、李泗賓、吳文義、李彥璋、張仁壽、簡麗賢	全華科技圖書股份有限公司	民國100年3月初版 民國104年5月三版	978-957-21-8002-0 4806812S	

彭朋群 教授

實驗室名稱：光電訊號處理實驗室
聯絡電話：(02) 2771-2171 轉 4671
e-mail：pcpeng@ntut.edu.tw
網址：http://www.eo.ntut.edu.tw/files/11-1045-3181-1.php
研究聚焦領域：智慧整合科技

專長

1. 光通訊	2. 微波光電	3. 訊號處理	4. 感測系統

11. 近五年成果

SCI 期刊論文

1. ***P. C. Peng****, H. Y. Wang, C. H. Chang, H. L. Hu, W. Y. Yang, and F. K. Wu, "DSBCS Modulation Scheme for Hybrid Wireless and Cable Television System" ***Optics Express***, vol. 22, pp. 1135-1142, 2014
2. Q. C. Huang, ***P. C. Peng****, S. F. Fu, W. Y. Yang, J. H. Huang, and H. H. Yee, "Double Sideband With Optical Carrier Suppression Scheme for Broadcasting Transmission," ***IEEE Photonics Technology Letters***, vol. 26, pp. 1172-1175, 2014.
3. H. W. Gu, C. H. Chang, Y. C. Chen, ***P. C. Peng****, S. T. Kuo, H. H. Lu, C. Y. Li, S. S. Yang, and J. J.Jhang, "Hexagonal Mesh Architecturefor Large-Area Multipoint Fiber Sensor System," ***IEEE Photonics Technology Letters***, vol. 26, pp.1878-1881, 2014.
4. ***P. C. Peng****, L. H. Yen, C. H. Chang, Y. C. Chen, and J. J. Jhang, "Hybrid wireline and Wireless Transport System Based on Polarization Modulator" ***IEEE Photonics Technology Letters***, vol. 25, pp.1069-1072, Apr. 2013.
5. ***P. C. Peng****, K. C. Shiu, C. H. Chang, Y. C Shu, Y. T. Lin, H. H. Lu, "Vertical-Cavity Surface-Emitting Laser for Tunable Microwave Photonic Filter" ***IEEE Journal of Selected Topics in Quantum Electronics***, vol. 19, pp.1701605-1701609, Jul. 2013.
6. ***P. C. Peng****, K. C. Shiu, W. Y. Lee, C. H. Chang, B. L. Lin, J. J. Jhang, "Multi-Service Cable Television System Using a Single Wavelength" ***IEEE Photonics Journal***, vol. 5, no.4, pp. 6601307, Aug. 2013.
7. ***P. C. Peng****, F. K. Wu, Y. C. Chen, and T. L. Chang, "A distributed feedback laser for tunable microwave photonic filter" ***Laser Physics Letters***, vol. 10 , no. 7, pp. 075109, Jun. 2013.
8. ***P. C. Peng****, W. Y. Lee, S. S. Wu, H. L. Hu, "Multiwavelength Fiber Laser for Fiber Link Monitoring System" ***Optics & Laser Technology***, vol. 51, pp. 62-66, Oct. 2013.
9. ***P. C. Peng****, K. C. Shiu, W. C. Liu, K. J. Chen, H. H. Lu, "A Fiber-Optical Cable Television System Using a Reflective Semiconductor Optical Amplifier," ***Laser Physics***, vol. 23 , no. 2, pp. 025106, Jan. 2013.
10. ***P. C. Peng****, F. K. Wu, W. C. Kao, J. Chen, C. T. Lin, and S. Chi, "Fast and Slow Light Property Improvement in Erbium-Doped Amplifier," ***Laser Physics***, vol. 23, no. 1, pp. 015104, Nov. 2013.
11. ***P. C. Peng****, H. L. Hu, and J. B. Wang, "Improvement of Triple-wavelength Erbium-doped Fiber Laser using a Fabry-Perot Laser Diode," ***Laser Physics***, vol. 23, no. 2, pp. 025105, Jan. 2013.
12. ***P. C. Peng****, A. L. Tsou, H. H. Yee, H. Y. Wang, and H. H. Lu, "A Stable Multiwavelength SOA-Based Fiber Ring Laser with Ultra-Narrow Wavelength Spacing," ***Laser Physics***, vol. 22 , pp. 268-272, Jan. 2012.
13. W. Y. Lin, C. H. Chang, H. H. Lu, ***P. C. Peng***, Y. P. Lin, C. Y. Chen, and C. Y. Li, "A hybrid

CATV/OFDM long-reach passive optical network architecture," ***Optics Express***, vol.20, pp. 4219-4224, Feb. 2012.

14. ***P. C. Peng****, H. Y. Wang, R. L. Lan, and R. Y. Peng, "Microwave transport systems that use semiconductor laser as radio-frequency amplifier," ***Optics Communications***, vol. 285, pp. 2433-2438, May. 2012.
15. ***P. C. Peng****, C. H. Chang, H. H. Lu, Y. T. Lin, J. W. Sun, and C. H. Jiang, "Novel optical add-drop multiplexer for wavelength-division-multiplexing networks", ***Optics Communications***, vol.285, pp. 3093-3099, Jun. 2012.
16. ***P. C. Peng****, H. Y. Wang, R. L. Lan, H. H. Lu, G. R. Lin, G. Lin, J. Y. Chi, "Wavelength Switching Based on Quantum-Dot Vertical-Cavity Surface-Emitting Laser," ***Laser Physics***, vol.22, pp. 1373-1377, Sep. 2012.
17. ***P. C. Peng****, Y. C. Chen, C. H. Jiang, H. H. Lu, "Fiber-Laser-Based Sensor System with Bus-Ring Architecture," ***Laser Physics***, vol.22, pp. 1419-1424, Sep. 2012.
18. Y. C. Chi, Y. C. Li, H. Y. Wang, ***P. C. Peng***, H. H. Lu, and G. R. Lin, "Optical 16-QAM-52-OFDM transmission at 4 Gbit/s by directly modulating a coherently injection-locked colorless laser diode," ***Optics Express***, vol.20, pp. 20071-20077, Aug. 2012.
19. K. M. Feng, C. Y. Wu, J. H. Yan, C. Y. Lin, and ***P. C. Peng***, "Fiber Bragg Grating-Based Three-Dimensional Multipoint Ring-Mesh Sensing System With Robust Self-Healing Function," ***IEEE Journal of Selected Topics in Quantum Electronics***, vol.18, pp. 1613-1620, Set. 2012.
20. ***P. C. Peng****, L. H. Yen, H. H. Lu, and C. H. Huang, "Hybrid Cable Television/Radio-over-Fiber Transport System Based on Polarization Modulation Technique," ***IEEE Photonics Technology Letters***, vol. 23, pp. 860 - 862, Jul. 2011.
21. H. C. Peng, H. S. Su, H. H. Lu, C. Y. Li, ***P. C. Peng***, S. H. Wu, and C. H. Chang, "Hybrid CATV/16-QAM OFDM in-Building Networks Over SMF and GI-POF Transport," ***Optics Express***, vol. 19, pp. 9575-9581, May. 2011.
22. H. S. Su, C. Y. Li, H. H. Lu, C. H. Chang, ***P. C. Peng***, P. Y. Wu, and H. W. Chen, "RoF Transport Systems with OSNR Enhanced Multi-Band Optical Carrier Generator", ***Optics Express***, vol. 19, pp. 18516-18522, Set. 2011.
23. Y. C. Chi, ***P. C. Peng***, and G. R. Lin, "Clock-Free RZ-BPSK Data Generation Using Self-Starting Optoelectronic Oscillator," ***IEEE/OSA Journal of Lightwave Technology***, vol. 29, pp. 1701-1706, Jun. 2011.
24. C. C. Lin, Y. C. Chi, H. C. Kuo, ***P. C. Peng***, C. J. Chang-Hasnain, and G. R. Lin, "Beyond-Bandwidth Electrical Pulse Modulation of a TO-Can Packaged VCSEL for 10 Gbit/s Injection-Locked NRZ-to-RZ Transmission," ***IEEE/OSA Journal of Lightwave Technology***, vol. 29, pp. 830-841, Mar. 2011.
25. ***P. C. Peng****, J. F. Chen, H. H. Lu, and Y. T. Lin, "Wavelength-tunable optical pulse generation from a fiber ring laser with a reflective semiconductor optical amplifier," ***Laser Physics***, vol. 21, pp. 509-511, Mar. 2011.
26. F. M. Wu, ***P. C. Peng****, J. Chen, C. T. Lin, W. C. Kao, "SOA-based Fiber Ring Laser Use in a Photonic Radio-Frequency Phase Shifter," ***Laser Physics***, vol. 21, pp. 522-525, Mar. 2011.
27. S. T. Kuo, ***P. C. Peng****, M. S. Kao, H. H. Lu, and J. F. Chen, "Tunable Erbium-Doped Fiber Ring Laser with Signal-Averaging Function for Fiber-Optic Sensing Applications," ***Laser Physics***, vol. 21, pp. 188-190, Jan. 2011.
28. ***P. C. Peng****, J. F. Chen, and J. W. Sun, "Novel Ring Protection Architecture for Fiber Sensor System," ***Japanese Journal of Applied Physics,*** vol. 50, no. 8, pp. 082501-082501-4, Aug. 2011.
29. C. H. Chang, W. C. Liu, ***P. C. Peng***, H. H. Lu, P. Y. Wu, and J. B. Wang, "Hybrid Cable Television and Orthogonal-Frequency-Division-Multiplexing Transport System Basing on Single Wavelength Polarization and Amplitude Remodulation Schemes," ***Optics Letters***, vol. 36, pp. 1716-1718, Apr. 2011.
30. S. T. Kuo, ***P. C. Peng***, J. W. Sun, and M. S. Kao, "A Delta-Star Based Multipoint Fiber Bragg Grating Sensor Network," ***IEEE Sensors Journal***, vol. 11, pp. 875-881, Apr. 2011.
31. S. T. Kuo, M. S. Kao, and ***P. C. Peng***, "A Hybrid Star-Ring-Bus Architecture for WDM

Metropolitan-Regional Access Networks," ***Microwave and Optical Technology Letters***, vol. 53, pp. 102-108, Nov. 2011.

32. ***P. C. Peng****, J. B. Wang, K. Y. Huang, "Reliable Fiber Sensor System with Star-Ring-Bus Architecture," ***Sensors***, vol.10, pp. 4194 - 4205, Apr. 2010.
33. H. H. Lu, C. H. Chang, ***P C. Peng***, H. S. Su, and H. W. Hu, "A Radio over GI-POF Transport System," ***IEEE/OSA Journal of Lightwave Technology***, vol. 28, pp. 1917 - 1921, Jul. 2010.
34. C. H. Chang, H. S. Su, H. H. Lu, ***P. C. Peng***, and H. W. Hu, "Integrating Fiber to-the-Home and POF In-Door Routing CATV Transport System," ***IEEE/OSA Journal of Lightwave Technology***, vol. 28, pp. 1864 - 1869, Jun. 2010.
35. C. Y. Wu, K. M. Feng, ***P. C. Peng***, and C. Y. Lin, "Three-Dimensional Mesh-Based Multipoint Sensing System with Self-Healing Functionality," ***IEEE Photonics Technology Letters***, vol. 22, pp. 565 - 567, Apr. 2010.
36. F. M. Wu, ***P. C. Peng****, J. Chen, C. T. Lin, G. R. Lin, and S. Chi, "Electrically and Continuously Tunable Optical Delay Line Based on a Semiconductor Laser," ***Japanese Journal of Applied Physics***, vol. 49, 074102, Jul. 2010.
37. W. J. Jiang, C. T. Lin, P. T. Shih, J. Chen, ***P. C. Peng***, and S. Chi, "A Full Duplex Radio-Over-Fiber Link with Multi-Level OFDM Signal via a Single-Electrode MZM and Wavelength Reuse with a RSOA," ***Optics Express***, vol. 18, pp. 2710 - 2718, Feb. 2010.
38. ***P. C. Peng****, R. L. Lan, F. M. Wu, G. Lin, C. T. Lin, J. Chen, G. R. Lin, S. Chi, H. C. Kuo, and J. Y. Chi, "Polarization Characteristics of Quantum-Dot Vertical-Cavity Surface-Emitting Laser with Light Injection,**" ***IEEE Photonics Technology Letters***, vol. 22, pp. 179 - 181, Feb. 2010.
39. W. Y. Lin, C. H. Chang, ***P. C. Peng***, H. H. Lu, and C. H. Huang, "Direct CATV Modulation and Phase Remodulated Radio-Over-Fiber Transport System," ***Optics Express***, vol. 18, pp. 10301 - 10307, May. 2010.
40. C. H. Chang, ***P. C. Peng***, H. H. Lu, C. L. Shih, and H. W. Chen, "Simplified Radio-Over-Fiber Transport Systems with a Low-Cost Multiband Light Source," ***Optics Letters***, vol. 35, pp.4021-4023, Nov. 2010.

專利

1. "Modulation device for generating optical signal with quadruple frequency and method thereof" US Patent No. 8059968.
2. "Optical modulating device with frequency multiplying technique for electrical signals" US Patent No. 8184988.
3. "Adjustable Optical Signal Delay Module and Method Thereof" US Patent No. 8059335.
4. "Optical access system for dual service network," US Patent No. 8428471
5. "Optical modulation device," US Patent No. 8301034
6. "產生倍頻光訊號之光電調變裝置及其調變方法," ROC Patent No. I363921.
7. "調整光訊號傳輸時間之光放大器," ROC Patent No. I 365309.
8. "可調光訊號延遲模組及方法," ROC Patent No. I375823.
9. "光調變裝置," ROC Patent No. I400498.
10. "雙重服務之光纖擷取系統," ROC Patent No. I382684
11. "倍頻電訊號之光電調變裝置," ROC Patent No. I396033.
12. "雙重服務之光纖擷取系統," ROC Patent No. I382684.
13. "相位偏移模組," ROC Patent No. M450886.
14. "光學通訊系統," ROC Patent No. M459411.
15. "光電濾波模組," ROC Patent No. M468028.

專章

1. "Fiber Bragg Grating-Based Optical Amplifiers" Chapter 17, pp. 375-404, "Advances in Optical Amplifiers" Intech Book, 2011. (ISBN 978-953-307-186-2)
2. “Improvement Schemes for Directly Modulated Fiber Optical CATV System Performances”, Chapter 28, pp. 647-662, “Frontiers in Guided Wave Optics and Optoelectrnics” Intech Book, 2010. (ISBN 978-953-7619-82-4)

獎項與榮譽

- 2013 年國立台北科技大學電資學院『學院傑出研究獎』。
- 2013 年國立台北科技大學 Dr. Shechtman 年輕學者研究獎。
- 2013 年國立台北科技大學電資學院年度『傑出研究獎』。
- 2012 年國立台北科技大學電資學院年度『傑出研究獎』。
- 2010 年國立台北科技大學電資學院年度『傑出研究獎』。
- 2013 年光電與通訊工程應用研討會 Conference on Photonics and Communications ，指導碩士班學生獲得最佳論文獎與優秀論文獎。
- 2011 年國際光電研討會 International Photonics Conference (IPC 2011)，指導碩士班學生獲得 Student Paper Award。

2.其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

在微波光電傳輸模組研究，研究團隊已完成光極化調變器為基礎之雙邊帶載波抑制調變與微波倍頻傳輸模組、光相位調變器為基礎之混合微波光纖傳輸系統、整合有線與無線通訊之多重服務通訊系統等事項，這些研究成果已獲得國際肯定。訊號處理模組之研究方面，包含研究光電半導體元件的頻率響應、共振頻率(resonance frequency)、相對強度雜訊 (relative intensity noise)、線寬增強因子(linewidth enhancement factor)…等特性，將其應用於微波光電相位偏移模組、微波光電放大模組、微波光電濾波模組。尤其在微波光電濾波模組上的研究，研究團隊有突破性的發展，包含開發單一分佈式反饋雷射(distributed feedback laser)為基礎的微波光電濾波模組、可調頻率範圍超過 30 GHz 的微波光電濾波模組。另在光纖感測領域的研究，主要開發具有可重構與監測功能的光纖系統，並且針對大範圍與多點感測，研究高可靠度與高容量的光纖系統，對系統佈建或監測過程中所需模組作深入研究與分析，已完成實驗驗證使光纖系統在實際的應用更具競爭力。

徐巍峯 教授

實驗 (研究) 室名稱：繞射光學暨光資訊處理實驗室

聯絡電話：(02) 2771-2171 轉 4623

e-mail：whsu@ntut.edu.tw

網址：

研究聚焦領域：☐ H：健康科技　☑ I：智慧整合科技
☐ G：綠色科技　☐ H：人文與創新元素

專長：1. 繞射光學元件 2.雷射顯示技術 3.雷射光斑處理 4.日光引導傳輸

12. 近年重要論文及著述

(a) 期刊論文

[1] Yan-Shuo Chang, **Wei-Feng Hsu***, Ku-Hui Hsu, and Hoang Yan Lin, “Full-frame projection displays using a liquid-crystal-on-silicon spatial light modulator for beam shaping and speckle suppression,” Applied Optics **53**, G214-G221, 2014. (SCI: Optics 29/82, IF: 1.649) (NSC 101-2221- E-027-102)

[2] Yan-Shuo Chang, Chia-Hsin Lin, Ku-Hui Hsu, **Wei-Feng Hsu,** Li-Jen Hsiao, and Hoang Yan Lin*, “Laser speckle reduction by phase range limited computer generated hologram in laser projection display system,” Applied Optics **53**, G157-G162, 2014. (SCI: Optics 29/82, IF: 1.649)

- This article is selected by Editors for publication in the Virtual Journal for Biomedical Optics (VJBO) **9**(11), Nov. 6, 2014. (VJBO is a special feature of OSA's Optics InfoBase.)

[3] **Wei-Feng Hsu*** and Min-Chun Chou, “Optimizing the parameters for measuring laser speckle and speckle contrast,” Applied Optics **53**, E26-E32, 2014. (SCI: Optics 29/82, IF: 1.649) (NSC 101-2221-E-027-102)

- This article is selected by Editors for publication in the Virtual Journal for Biomedical Optics (VJBO) **9**(10), Oct. 13, 2014. (VJBO is a special feature of OSA's Optics InfoBase.)

[4] 徐巍峰, "雷射光斑之原理、量測、與抑制方法 (Theory, measurement, and suppression methods of laser speckles),” 光學工程123期, 頁數: 6-12, 2013.

[5] **Wei-Feng Hsu***, Yun-Chiang Hsu, and Yi-Ta Shen, “Orthogonal incidence method for efficient sunlight collection from asymmetric light couplers in tree-structured light guiding systems,” Applied Optics **52**, 6332-6343, 2013. (SCI: Optics 29/83, IF: 1.649) (NSC 101-2221-E-027-102)

[6] Yun-Chiang Hsu, Yi-Ta Shen, and **Wei-Feng Hsu***, “High-efficiency light couplers of sunlight guiding systems for indoor illumination,” International Journal of Engineering Inventions **2**, 69-74, 2013.

[7] **Wei-Feng Hsu***, Yi-Ta Shen, and I-Lin Chu, **“**Asymmetric and symmetric light couplers of daylighting systems for direct indoor lighting,” Journal of Optics-UK **14**, 2012, 125703. (SCI: Optics 22/80, IF: 1.990)

- This article is selected by editors of Journal of Optics for inclusion in the exclusive ‘Highlights of 2012’ collection.

[8] **Wei-Feng Hsu*** and Chuan-Feng Yeh, “Speckle suppression in holographic projection displays using temporal integration of speckle images from diffractive optical elements,” Applied Optics **50**, H50-H55, 2011. (SCI: Optics 27/79, IF: 1.748) (NSC 100-2221-E-027-050)

[9] **Wei-Feng Hsu*** and I-Lin Chu, “Speckle suppression by integrated sum of fully developed negatively correlated patterns in coherent imaging,” *Progresses In Electromagnetics Research B* **34**, 1-13, 2011. (SCI: Engineering, EE 3/245, IF: 5.298)

[10] **Wei-Feng Hsu***, Yu-Weng Chen, and Yuan-Hong Su, “Implementation of phase-shift patterns using a holographic projection system with phase-only diffractive optical elements,” Applied Optics **50**, 3646-3652, 2011. (SCI: Optics 27/79, IF: 1.748) (NSC 95-2221-E-027-088)

(b) 研討會論文

[1] Kai-Chung Teng, Ming-Hong Weng, Chun-Hao Lee, and **Wei-Feng Hsu***, “Speckle suppression in spatial phase-shift patterns using an LCoS spatial light modulator,” in *Optics & Photonics Taiwan, International Conference* (OPTIC 2014), 4-5 December, 2014, Taichung, Taiwan, paper 2014-Thu-P0401-P003.

[2] Po-Kai Hsieh, Tai-Yuan Chen, Yi-Hsuang Weng, and **Wei-Feng Hsu***, “Design scheme of programmable Fresnel lenslet array for projecting 2D/3D images using an LCoS spatial light modulator,” in *Optics & Photonics Taiwan, International Conference* (OPTIC 2014), 4-5 December, 2014, Taichung, Taiwan, paper 2014-Thu-P0401-P006.

[3] **Wei-Feng Hsu*** and Po-Kai Hsieh, “Study of three-dimensional images projection using LCoS-spatial light modulators,” in 4th International Symposium on Technology for Sustainability (ISTS2014), 19-21 November, 2014, Taipei, Taiwan, paper 156.

[4] **Wei-Feng Hsu*** and Po-Kai Hsieh, “Implementation of projection of three-dimensional binary patterns using programmable Fresnel lenslet arrays,” in *Digital Holography and Three-Dimensional Imaging*, OSA Technical Digest (CD) (Optical Society of America, 2014), paper JTu4A.28.

[5] **Wei-Feng Hsu*** and Po-Kai Hsieh, "Pseudo-scanning projection of three-dimensional binary patterns using spatial light modulators," in *3rd Laser Display Conference* (LDC'14), June 19-20, 2014, Taichung, Taiwan, paper 2014-05005.

[6] (Invited Paper) **Wei-Feng Hsu***, "Speckle reduction using spatial light modulators in laser projection displays," in *Optics & Photonics Taiwan, International Conference* (OPTIC 2013), 5-7 December, 2013, Zhongli, Taiwan, paper 2013-FRI-S0401-I003.

[7] Chien-Hong Chen, Yu-Wei Lu, and **Wei-Feng Hsu***, "Using first diffraction order of binary gratings for characterization of the phase modulation of spatial light modulators," in *Optics & Photonics Taiwan, International Conference* (OPTIC 2013), 5-7 December, 2013, Zhongli, Taiwan, paper 2013-SAT-P0402-P003.

[8] Jih-Sheng Kuo, Yun-Chiang Hsu, and **Wei-Feng Hsu***, "Analytical Model and Simulation of Asymmetric Couplers in Tree-structured Light Guiding System for Direct Indoor Lighting," in *Optics & Photonics Taiwan, International Conference* (OPTIC 2013), 5-7 December, 2013, Zhongli, Taiwan, paper 2013-THU-P0501-P004.

[9] Wei-Feng Hsu, "Efficient sunlight collection from asymmetric light couplers in tree-structured light guiding network for direct indoor lighting," in International Conference and Exhibition on Lasers, Optics & Photonics, October 7-9, 2013, San Antonio, USA, paper 5943.

[10] Yan-Shuo Chang, Hoang Yan Lin, Ku-Hui Hsu, and Wei-Feng Hsu*, "Speckle suppression by 2D spatial light modulator in full-frame laser projection displays," in *IWH 2012 Digests*, November 12-14, 2012, Chung-Li, Taiwan, paper 14A3, pp.65-66.

[11] Yi-Ta Shen, Chuan-Feng Yeh, Min-Chun Chou, and Wei-Feng Hsu*, "Simulation and measurement of speckle contrast of objective laser speckles," in *IWH 2012 Digests*, November 12-14, 2012, Chung-Li, Taiwan, paper P33, pp.139-140.

[12] Chung-Yi Liu, Chien-Hong Chen, and Wei-Feng Hsu*, "Effect of the pixel sizes when using an LCoS spatial light modulator as dynamic diffuser in coherent imaging systems," in *IWH 2012 Digests*, November 12-14, 2012, Chung-Li, Taiwan, paper P34, pp.141-142.

[13] Wei-Feng Hsu*, Chuan-Feng Yeh, and Min-Chun Chou, "Simulation and measurement of laser speckle and speckle contrast," SID Symposium Technical Paper **43**, 830-833 (2012). (*SID 2012 Symposium*, June 3-8, 2012, Boston, paper 61.3)

[14] Yan-Shuo Chang, Wei-Feng Hsu, and Hoang Yan Lin*, "Speckle contrast analysis at different locations in the image produced by a laser projection system," SID Symposium Technical Paper **43**, 1554-1557 (2012). (*SID 2012 Symposium*, June 5-8, 2012, Boston, paper P-129)

[15] Wei-Feng Hsu* and Chuan-Feng Yeh, "Speckle suppression in holographic projection displays by temporal integration of diffractive optical elements," in *Digital Holography and Three-Dimensional Imaging*, OSA Technical Digest (CD) (Optical Society of America, 2011), paper DTuC4.

[16] Yan-Shuo Chang, Hoang Yan Lin*, and Wei-Feng Hsu, “Speckle suppression by 2D Spatial light modulator in laser projection system,” SID Symposium Technical Paper **42**, 428-431 (2011). (*SID 2011 Symposium*, May 15-19, 2011, Los Angeles, paper 32.2).

(c) 專利

[1] 中華民國新型專利 (2011 申請中)，光斑雜訊降低方法及使用其之設備/METHOD FOR REDUCING SPECKLE NOISE AND APPARATUS USING THE SAME，發明人: 徐巍峰、朱翊麟。

[2] 中華民國新型專利 (2012 申請中)，背光模組/ Back Light Module，發明人: 徐巍峰。

(d)技術移轉

(e)專書及專章

(f)作品

其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

林家弘教授
實驗 (研究) 室名稱：光子技術實驗室 Photonic Technology Lab
聯絡電話：(02)27712171 轉 4697
e-mail：jhlin@ntut.edu.tw
網址：http://140.124.126.17
專長

1. 光電材料超快光學量測
2. 液晶雷射與顯示應用
3. 全光纖短脈衝雷射的產生與應用
4. 非線性光學研究

13. 近五年成果
(a) 期刊論文

2. **Ja-Hon Lin**,* Ying-Li Hsiao, Bo-Yu Ciou, Sheng-Hung Lin, Yao-Hui Chen, Jin-Jei Wu, "Manipulation of Random Lasing Action From Dye-Doped Liquid Crystals Infilling Two-Dimensional Confinement Single Core Capillary (2015))," IEEE Photon. J. 7, 1501909.
3. **Ja-Hon Lin**,* Beng-Cheng Lai and Yin-Wen Lee, "High energy rectangular pulse generated in a low repetition rate all normal-dispersion Yb3+-doped fiber laser (2015)," Laser Phys. J. 25, 045101.
4. Chih-Chien Chu,* Ya-Chi Chang, Bo-Kai Tsai, Tzu-Chau Lin, **Ja-Hon Lin**, and Vincent K. S. Hsiao (2014), "Trans/Cis-Isomerization of Fluorene-Bridged Azo Chromophore with Significant Two-Photon Absorbability at Near-Infrared Wavelength," Chem. Asian J, 9, 3390.
5. Ting-Wei Chen, Ken-Chia Chang, Jia-Chi Chen, **Ja-Hon Lin**, and Ming-Dar Wei* (2014) "Role of modulation frequency in a hybrid Q-switched Nd:$LuVO_4$ laser with an acousto-optic modulator and a Cr^{4+}:YAG saturable absorber, Appl. Opt. 53, 3459.
6. Ja-Hon Lin,* Yin Wen Lee,* T.-C. Lin, B.-C. Lai, M. Pal, S. Das, A. Dhar, and M. C. Paul, "Near-infrared supercontinnum generation in single -mode nonlinear Yb3+-doped fiber amplifier (2014)," Opt. Express. 13, 16130.
7. Ja-Hon Lin,* and Ying-Li Hsiao, "Manipulation of the resonance characteristics of random lasers from dye-doped polymer dispersed liquid crystals in capillary tubes (2014)," Opt. Mater. Express 4, 1555.
8. Ja-Hon Lin,* Po-Yen Chen, and Jin-Jei Wu (2014) "Mode Competition of Two Band-edge Lasing from Dye-Doped Cholesteric Liquid Crystal Laser," Opt. Express 22, 9932.
9. Tzu-Chau Lin,* Mei-Ling Li, Che-Yu Liu, Ming-Yu Tsai, Ying-Hsuan Lee, Yuyun Febriani, Ja-Hon Lin, and Yu-Kai Shen (2014) "Synthesis and Two-Photon Properties of Multi-Branched Fluorophores Composed of Ladder-Type Conjugated Cores and Functionalized Diquinoxalinylamino Peripheries," Eur. J. Org. Chem. 1615.
10. Ja-Hon Lin,* Jia-Liang Jhu, Siao-Shan Jyu, Ting-Chun Lin, and Yinchieh Lai

(2013), "Characteristics of low repetition rate passively mode-locked Yb-doped fiber laser in all normal dispersion cavity," Laser Phys. 23, 025103.

11. Tzu-Chau Lin,* May-Hui Li, Che-Yu Liu, **Ja-Hon Lin**, Yu-Kai Shen and Ying-Husan Lee (2013) "Synthesis and two-photon properties of a novel multi-branched chromophore with an unsymmetrically substituted scaffold derived from functionalized quinoxalinoid heterocycles," J. Mater. Chem. C 1, 2764.
12. Tzu-Chau Lin,* Che-Yu Liu, Bor-Rong Huang, **Ja-Hon Lin***, Yu-Kai Shen, and Cheng-Yu Wu (2013) "Synthesis and Two-photon Absorption Properties of Star-shaped Chromophores Derived from Functionalized Fluorene Units," Eur. J. Org. Chem. 498.
13. Tzu-Chau Lin,* Ying-Hsuan Lee, Che-Yu Liu, Bor-Rong Huang, Ming-Yu Tsai, and Yu-Jhen Huang, **Ja-Hon Lin***, Yu-Kai Shen, and Cheng-Yu Wu (2013) "Synthesis and Two-photon Absorption Property Characterizations of Small Dendritic Chromophores Containing Functionalized Quinoxaliniod Heterocycles," Chem. Eur. J **19**, 749.
14. Chandroth Jisha, Kuei-Chu Hsu, **Ja-Hon Lin** (2012), YuanYao Lin, Chien-chung Jeng, "Tunable pattern transitions in a liquid-crystal-monomer mixture using two-photo-polymerization," Opt. Lett. 37, 4931.
15. K.-C. Chang, S.-T. Lin, **Ja-Hon Lin**, and Ming-Dar Wei (2012), "Actively Q-switched intracavity frequency-doubled Nd:$LuVO_4$/LBO green laser with an acousto-optic modulator," Laser Phys. 22, 872.
16. **Ja-Hon Lin**, Pao-Keng Yang,* and Wei-Cheng Lin (2012) "Passively mode-locked pulse generation in a c-cut Nd:LuVO4 laser at 1086 nm with a semiconductor saturable-absorber mirror," J. Phys. B: At. Mol. Opt. Phys. 45, 085403.
17. Tzu-Hsiang Yen, **Ja-Hon Lin**,* and Yinchieh Lai (2012) "Actively Q-switched mode-locked Yb-doped fiber laser with high mode-locking contrast, Laser Phys. 22, 441.
18. Po-Chi Ou, **Ja-Hon Lin**,* Wen-Feng Hsieh (2012) "Spectral dependence of transient reflectance in a ZnO epitaxial film at room temperature," Appl. Phys. B, 106, 339.
19. Chandroth P. Jisha, Kuei-Chu Hsu, YuanYao Lin, **Ja-Hon Lin**, Kai-Ping Chuang, Chao-Yi Tai, and Ray-Kuang Lee, "Phase separation and pattern instability of laser-induced polymerization in liquid-crystal-monomer mixtures," Opt. Mater. Express, **8**, 1496 (2011).
20. Ming-Dar Wei, D.Y. Huang, Chih-Chang Hsu, A.-K. Chang, **Ja-Hon Lin** (2011), "Bistability and spatial hysteresis in an Nd:GdVO4 laser with an intracavity twisted-nematic liquid crystal," Appl. Phys. B, 105, 323.
21. Po-Chi Ou, Wei-Rein Liu, Ho-Jei Ton, **Ja-Hon Lin***, and Wen-Feng Hsieh (2011), "Ultrafast relaxation and absorption saturation at near exciton resonance in a thin ZnO epilayer," J. Appl. Phys. 109, 013102. Selected by the **Virt. J.**

Ultrafast Sci. Volume 10. Issue 2. Condensed matter physics

22. Ja-Hon Lin*, Dau Wang, and Kuei Huei Lin (2011), "High energy pulses generation with giant spectrum bandwidth and submegahertz repetition rate from a passively mode-locked Yb-doped fiber laser in all normal dispersion cavity," Laser Phys. Lett. 8, 66-70.
23. Po-Chi Ou, Ja-Hon Lin*, Chi-An Chang, Wei-Rein Liu and Wen-Feng Hsieh, "Thickness effect on ultrafast thermalization of carriers in above-band-gap states in ZnO epitaxial films," J. Phys. D: Appl. Phys. 43 (2010).
24. Kuei Huei Lin, Ja Hon Lin*, and Chia-Ching Chen (2010), "Switchable mode-locking states in an all-fiber all-normal -dispersion ytterbium-doped laser," Laser Phys. **20**, 1984-1989.
25. Ja Hon Lin*, Chi-Chung Huang, and Kuei Huei Lin (2010), "Characteristics of Q-Switched and Mode-Locked Pulses Generation in C-Cut Nd:LuVO4 Laser by Acousto-Optic Modulator," Laser Phys. **20,** 1881-1885.
26. Ja-Hon Lin*, Chih-Chieh Taso, Kuei-Chu Hsu, Kuei-Huei Lin, and Yinchieh Lai (2010), "Ultrashort Pulse Compression for Mode-Locked Ti:Sapphire Laser by Using a Tapered Fiber and Grating Pair," Jpn. J. Appl. Phys. **49**, 052701.
27. Ja Hon Lin*, and Kuei Hue Lin (2010), "Multiple pulsing and harmonic mode-locking in an all-normal-dispersion Nd:GdVO4 laser using a nonlinear mirror,"J. Phys. B: At. Mol. Opt. Phys. **43**, 065402.

(b) 研討會論文

國際研討會

1. **Ja-Hon Lin**,* Hung-Yi Lee1 and Wen-Feng Hsieh, "Multiple pulses and harmonic mode locking from passive mode-locked Y Two color bandedge lasing tterbium doped fiber in anomalous dispersion region," Optics + Optoelectronics 2015, Prague, Czech Republic, April 13-16 (2015).
2. Kuan-Cheng Liao, and **Ja-Hon Lin**,* Yin-Wen Lee "Cascaded Raman Scattering by a Q-switched and Mode-Locked pulses through Yb3+-doped Fiber Amplifier" The 75th JSAP Autumn Meeting(JSAP 2014), Sapporo, Japan, September 17-September 20 (2014).
3. Kuan-Cheng Liao, Chun-Hao Chen, Li-Hao Jian, **Ja-Hon Lin**,* Shwu-Yun Tsay, Yao-Hui Chen "Two color bandedge lasing from cholesteric liquid crystals in capillary," The 75th JSAP Autumn Meeting (JSAP 2014), Sapporo, Japan, September 17-September 20 (2014).
4. Hsuan-Ching Lin, Hsing-Jung Su, Ja-Hon Lin, Wei-Rein Liu, Bi-Hsuan Lin, Chia-Hung Hsu, Wen-Feng Hsieh, "Carrier Dynamics and Coherent Echo in a-Plane ZnO/ZnMgO Multiple Quantum Wells," the 3rd International Symposium on Next-Generation Electronics (ISNE2014), Taoyuan, Taiwan, January 22-24 (2014).
5. Yu-Shen Huang, and **Ja-Hon Lin**,* "Coherent acoustic phonons oscillation of a c-plane ZnO thin film below the exciton resonance," Optic & Photonics 2014, Taichung, Taiwan , December

4-5(2014).

6. Chen-Wei Chan, and **Ja-Hon Lin,** * "Bound pulse generation from passive mode-locked Yb-doped fiber laser at net normal dispersion region," Optic & Photonics 2014, Taichung, Taiwan , December 4-5(2014).
7. Bo-Yu Ciou, Ying-Li Hsiao, **Ja-Hon Lin,*** "Temperature Dependent Random lasing behavior of dye-doped liquid crystals in single core capillary," Optic & Photonics 2014, Taichung, Taiwan , December 4-5(2014).
8. Li-Hao Jian, Chun-Hao Chen, Kuan-Cheng Liao, **Ja-Hon Lin**,*, Shwu-Yun Tsay, "Spatial control of lasing peak from cholesteric liquid crystal laser," Optic & Photonics 2014, Taichung, Taiwan , December 4-5(2014).
9. Cheng-Yen Chien, **Ja-Hon Lin***, Jin-Jei WU, "Control laser speckle noise using polymer dispersed liquid crystals," Optic & Photonics 2014, Taichung, Taiwan , December 4-5(2014).
10. Po-Yen Chen, Kuan-Cheng Liao, Ja-Hon Lin*, Yao-Hui. Chen, Shwu-Yun Tsay Tzeng and Jin-Jei Wu, "TEMPERATURE DEPENDENT COLOR CONE LASING IN CHOLESTERIC LIQUID CRYSTAL," CLEO-PR & OECC/PS 2013, Kyoto, Japan, June 30-July 4 (2013). (EI)
11. Hsing-Ru Tsai, , Chen-Hsiu Wu, Ja-Hon Lin*, and Jin-Jei Wu, "Lasing behavior of dye doped liquid crystal within glass cell, "Lasing behavior of dye doped liquid crystal within glass cell," CLEO-PR & OECC/PS 2013, Kyoto, Japan, June 30-July 4 (2013). (EI)
12. Tzu-Chu Lin, Yin-Hsuan Lee, Che-Yu Liu, Ja-Hon Lin, and Yu-Kai Shen, Synthesis and Two-Photon properties of small dendritic chromophres containing functionalized Quinoxalinoid Heterocycles," CLEO-PR & OECC/PS 2013, Kyoto, Japan, June 30-July 4 (2013). (EI)
13. Chandroth P. Jisha, Kuei-Chu Hsu, YuanYao Lin, Ja-Hon Lin, Chien-Chung Jeng, and Ray-Kuang Lee, "Pattern Writing in a Liquid-Crystal-Monomer Mixture Using Two-Photon Polymerization," CLEO-PR & OECC/PS 2013, Kyoto, Japan, June 30-July 4 (2013). (EI)
14. Ja-Hon Lin*, Guo-Lun Hong1, Ying-Li Hsiao, Cheng-Ling Lee, "Random lasing from capillary fiber," Conference on Lasers and Electro-Optics, CLEO 2013, San Jose, CA, USA, June 9-14 (2013). (EI)
15. Bo-Yu Yang, Yin-Wen Lee, Yu-Sheng Lin, Hong-Yi Li, Yu-Zhe Chen, Han-Wei Zeng, Che Hung Cho, and Ja-Hon Lin*, " Supercontinuum Generation in a Q-switched and Mode-Locked Yb3+-doped Fiber Amplifier, Optic 2013, Chungli, Taiwan, October 5-7.
16. Min-Song Lin, Ja-Hon Lin*, Shwu-Yun Tsay, Yau-Huei Chen, Jin-Jei Wu, "Mirrorless Lasing behavior of Dye-Doped Twisted Nematic Liquid Crystal cell," Optic 2013, Chungli, Taiwan, October 5-7.
17. Kuan-Cheng Liao, Ja-Hon Lin*, Shwu-Yun Tsay, Yao-Hui. Chen, "Two color lasing

of dye doped cholesteric liquid crystal in capillary tube," Optic 2013, Chungli, Taiwan, October 5-7.

18. Jia-Liang Jhu, **Ja Hon Lin***, Sia o -Shan Jyu, and Yinchieh Lai "Tunable Pulsewidth from Low Repetition Rate Mode-Locked Yb-doped Fiber Laser," 17th Opto-Electronics and Communications conference (OECC2012), Busan, Korea, July 2-6 (2012). (**EI**)

19. Kuei-Chu Hsu, Yuan Yao Lin, **Ja-Hon Lin**, Kai-Ping Chuang, Chao-Yi Tai, Ray-Kuang Lee, "Phase separation and pattern instability of laser-induced polymerization in liquid-crystal-monomer mixtures," :2012 Conference on Lasers and Electro-Optics, CLEO 2012, San Jose, CA, USA, May 6-11 (2012).

20. Yu-Sheng Lin, Jia-Liang Jhu, Bo-Yu Yang, **Ja-Hon Lin*** "Multiple dissipative soliton generation in Yb-doped fiber laser with hysteresis phenomenon," Optics & Photonics Taiwan, International Conference 2012 (OPT 2012), Taipei, Taiwan, December 6-12 (2012).

21. Hsing Ru Tsai, **Ja-Hon Lin*** Jin-Jei Wu, Chen-Hsiu Wu, Min-Song Lin, "Pumping polarization dependent random laser in dyedoped nematic liquid crystals," Optics & Photonics Taiwan, International Conference 2012 (OPT 2012), Taipei, Taiwan, December 6-12 (2012).

22. Ting-Wei Chen, Ken-Chia Chang, **Ja-Hon Lin**, Ming-Dar Wei, "Optimal pulse characteristics and pulse stabilization in a hybrid Q-switched Nd:$LuVO_4$ laser on a role of modulation frequency," International Symposium on Physics and Applications of Laser Dynamics 2012 (IS-PALD2012), Tainan, Taiwan, November 7-9 (2012).

23. Yu-Kai Sheng, **Ja-Hon Lin***, Rajalingam Thangavel, Wen-Feng Hsieh, " Room-temperature excitonic optical nonlinearities of p-type ZnO thin film," International Symposium on Physics and Applications of Laser Dynamics 2012 (IS-PALD2012), Tainan, Taiwan, November 7-9 (2012).

24. **Ja-Hon Lin***, Ting -Chun Lin, Jia-Liang Jhu, Guo-Lun Hong, Cheng-Yu Wu, and Kuei-Huei Lin, "All Fiber Supercontinnum Generation from Low Repetition Rate Mode-Locked Laser," International Photonics Conference (IPC 2011), Tainan, Taiwan, December 8-10 (2011)

25. Li-Hsing Kan, Siao-Shan Jyu, **Ja-Hon Lin**, Yinchieh Lai, "Pulse characteristics of mode-locked Er-doped fiber laser with long length negative-dispersion fiber cavity," International Photonics Conference (IPC 2011), Tainan, Taiwan, December 8-10 (2011)

26. **Ja-Hon Lin** and Pao-Keng Yang, "Passive mode locking of c-cut Nd:LuVO4 laser by the SESAM at 1086 nm," International Quantum Electronics Conference (IQEC)

and Conference on Lasers and Electro-Optics (CLEO) Pacific Rim 2011, Sydney, Australia (2011). (**EI**)

27. Po-Chi Ou, **Ja-Hon Lin**, and Wen-Feng Hsieh, "Optical nonlinear absorption of ZnO/ZnMgO multiple quantum wells at room temperature," International Quantum Electronics Conference (IQEC) and Conference on Lasers and Electro-Optics (CLEO) Pacific Rim 2011, Sydney, Australia (2011). (**EI**)

28. Ta-Nung Chen, Snhing-hong Liu, Siao-Tsung Wang, Shing-Rung Su, Bo-Yan Chen, Kuei-Chu Hsu, **Ja-Hon Lin**, "Liquid crystal/polymer micro-waveguide fabrication and optical nonlinearity determination," 2011 16th Opto-Electronics and Communications conference, Kaohsiung, 4-8 July (2011). (**EI**)

29. Li-Hsing Kan, Siao-Shian Jyu, **Ja-Hon Lin**, Yinchieh Lai, "Direct generation of 126nJ high-pulse-energy pulse trains from a passive mode-locked erbium-doped fiber laser with 500 kHz pulse repetition rate," 2011 16th Opto-Electronics and Communications conference, Kaohsiung, 4-8 July (2011). (**EI**)

30. Yinchieh Lai, Wei-Wei Hsiang, **Ja-Hon Lin**, Siao-Shan Jyu, "New Laser Dynamics of Mode-locked Fiber Lasers," 2011 16th Opto-Electronics and Communications conference, Kaohsiung, 4-8 July (2011).

31. Kuei-Chu Hsu, **Ja-Hon Lin**, ":Ultrashort pulse induced nonlinear photo-polymerization and phase separation in liquid crystal and monomer mixtures," Proceedings of SPIE - The International Society for Optical Engineering, San Francisco, CA, USA, :January 25 - 26 (2011). (**EI**)

32. Li-Hsing Kan, Siao-Shan Jyu, **Ja Hon Lin**, and Yinchieh Lai, "High-pulse-energy mode-locked Erbium-doped fiber laser with large net roundtrip anomalous dispersion & nonlinearity," 2010 International conference on optics and photonics in Taiwan, December 3-4.

33. Yu-Kai Shen, **Ja-Hon Lin***, "PHASE AND INTENSITY RETRIEVE OF ULTRASHORT PULSES USING UNBALANCE THREE AND ONE PHOTON ABSORPTION," 2010 International conference on optics and photonics in Taiwan, December 3-4.

34. Kuei-Chu Hsu, **Ja-Hon Lin**, Tzu-Pin Kao, and Ching-Cherng Sun, "Photo-lithography Induced Phase Separation for Triple-layer Liquid Crystal/polymer Micro-waveguide Formation," 2010 International conference on optics and photonics in Taiwan, December 3-4.

35. Yu-Sheng Lin, Kuei-Huei Lin, Jing-Yun Wang, **Ja-Hon Lin**, Geng-Wei Chang, and Chau-Jern Cheng, "Passive Mode-Locking in an Erbium-Doped Fiber Laser with High-OrderHarmonics and Wide Pulsewidth Tunability," 2010 International conference on optics and photonics in Taiwan, December 3-4.

36. Ting -Chun Lin, Ja-Hon Lin*, Yu-Kai Shen, Tzung-Wei Yu, Guo -Shuen Wen, "All fiber Yb-doped Mode Loke Laser With High Energy Pulses Output, 2010 International conference on optics and photonics in Taiwan," December 3-4.
37. Po-Chi Ou, You-Chuang Ku, W.C. Lin, H.J. Ton, Ja-Hon Lin*, Wen-Feng Hsieh, "Transient Absorption Spectroscopy in ZnO/ZnMgO Multiple-Quantum-Wells by Femtosecond Pump-Probe," 2010 International conference on optics and photonics in Taiwan, December 3-4.
38. Ja Hon Lin*, Dau-Wang, and Kuei-Huei Lin, "Submegahertz repetition rate from a passively mode-locked Yb-dope fiber laser with giant chirp Yb-doped fiber," at 15th OptoElectronics and Communication Conference (OECC 2010), July 5-9 (2010). (EI)
39. Siao-Shan Jyu, Bo-wei Huang , Ja Hon Lin , Yinchieh Lai, "Passive Mode-Locked Er-Fiber Laser with Large Anomalous Dispersion and Nonlinearity," at 15th OptoElectronics and Communication Conference (OECC 2010), July 5-9 (2010). (EI)

國內研討會

1. Chia-Hui Lu, Hsing-Jung Su, and **Ja-Hon Lin***,"Two photon absorption associated anisotropic on ultrafast carrier dynamics in a-plane ZnO thin film,"2015中華民國物理年會,新竹,中華民國, January 28-30 (2015).
2. Yu-Shen Huang and **Ja-Hon Lin***, "Coherent acoustic phonons oscillation of a c-plane ZnO epi-film below the exciton resonance, " 2015中華民國物理年會,新竹,中華民國, January 28-30 (2015)
3. Hsuan-Ching Lin, Hsing-Jung Su, **Ja-Hon Lin**,* Wei-Rein Liu, Bi-Hsuan Lin, Chia-Hung Hsu, and Wen-Feng Hsieh, "Ultrafast carrier dynamics and coherent echo in R-plane ZnO/ZnMgOmultiple quantum wells," 2014中華民國物理年會,台中,中華民國, January 22-24 (2014).
4. Hung-Yi Lee, Bing-Chen Lai and **Ja-Hon Lin**,* "Pulse dynamics from Yb-doped fiber laser within anomalous dispersion region," 2014中華民國物理年會,台中,中華民國, January 22-24 (2014).
5. Po-Yen Chen, **Ja-Hon Lin***, and Jin-Jei Wu, " Temperature Dependent of Two Color Lasing Behavior from Cholesteric Liquid Crystal," 液晶年會, 中華民國, October 20 (2013).
6. Ying-Li Hsiao, **Ja-Hon Lin***, Jin-Jei Wu, Bo-Yu chiou, Che-Wei Chang, "CYLINDRICAL MICROCAVITIES RANDOM LASER," 液晶年會, 中華民國, October 20 (2013).
7. Ying-Li Hsiao, **Ja-Hon Lin**, ,Kuei-Sen Hsiao, "RANDOM LASING FROM GLASS TUBE WITH INFILLING OF DYE DOPED POLYMER DISPERSIVE LIQUID CRYSTAL," 2013中華民國物理年會,花蓮,中華民國, January 29-31 (2013).

8. **Ja-Hon Lin**, Cheng-Yu Wu , Hsing-Jung Su, Tzung-Wei Yu, Jin-Jei Wu, "EVOLUTION OF FAR FIELD DIFFRACTION PATTERNS IN USE OF GAUSSIAN BEAMS THROUGH THE NEMATIC LIQUID CRYSTAL," 2013中華民國物理年會,花蓮,中華民國, January 29-31 (2013).
9. Hsing Ru Tsai, **Ja-Hon Lin**, Jin-Jei Wu,Tien-Jung Chen, "INVESTIGATION OF RANDOM LASER BEHAVIOR FROM DYE-DOPED NEMATIC LIQUID CRYSTALS," 2013中華民國物理年會,花蓮,中華民國, January 29-31 (2013).
10. Bo-Yu Yang, Yu-Sheng Lin, Ja-Hon Lin, "MODULATION OF MODE-LOCKED PULSES GENERATED IN ALL-FIBER YB-DOPED FIBER LASER," 2013中華民國物理年會,花蓮,中華民國, January 29-31 (2013).
11. Cheng-Yu Wu (吳承祐), Guo-Lun Hong (洪國倫), Jia-Liang Jhu (朱家亮), **Ja-Hon Lin (林家弘)**, "Far field diffraction patterns of Ti:sapphire laser beam passing through the liquid crystal," 2012中華民國物理年會,嘉義 中華民國, January 17-19 (2012).
12. K. C. Cheng (張肯嘉), Ming-Dar Wei (魏明達), Shou-Tai Lin (林碩泰), **Ja-Hon Lin (林家弘)**, "Actively Q-switched intracavity frequency doubled Nd:LuVO4/LBO green laser with an acoustic-optic modulator," 2010中華民國物理年會，嘉義，中華民國, February 17-19 (2012).
13. Ho-Jei Ton (童厚傑),Po-Chi Ou (歐博濟), **Ja-Hon Lin (林家弘)***, Wen-Feng Hsieh (謝文峰), "Room-Temperature Ultrafast Dynamics in ZnO/ZnMgO Multiple Quantum Wells," 2010中華民國物理年會,台南，中華民國, February 2-4 (2010).
14. Chi-Chuang Huang (黃啟創), Hou-Ren Chen (陳厚仁) **Ja-Hon Lin (林家弘)***, Kuei-Huei Lin (林奎輝) and Wen-Feng Hsieh (謝文峰),* "Generation of Q-switched mode-locking pulses in a c-cut Nd:$LuVO_4$ laser by acousto-optic modulator," 2010中華民國物理年會，中華民國, February 2-4 (2010).
15. Dau-Wang (王道), **Ja-Hon Lin (林家弘)***,' and Kuei-Huei Lin (林奎輝), " Pulse generation from a passively mode-locked Yb-doped fiber laser with giant chirp and low repetition rate," 2010中華民國物理年會，中華民國, February 2-4 (2010).
16. Ho-Jei Ton (童厚傑), Li-Tso Hsu (許力佐), Tzung Da Jiang (蔣宗達), Po-Chi Ou (歐博濟), J. H. Lin **(林家弘)***, W.F. Hsieh(謝文峰),* "Ultrafast Dynamics of 1μm ZnO Epitaxital Film by pump-probe Measurement," 2009台灣光電科技研討會，台北，中華民國, December 11-12 (2010).
17. Chia-Ching Chen (陳家慶), Dau Wang (王道), Chi-Chuang Huang (黃啟創), Kuei-Huei Lin (林奎輝), and **Ja-Hon Lin(林家弘)***, "Multi-Stability of Mode Locked Ytterbium-Doped Fiber Laser Using Nonlinear Polarization Evolution and Semiconductor Saturable Absorber Mirror," 2009台灣光電科技研討會台北，中華民國, December 11-12 (2010).

(c) 專利

1.專利發明人：林家弘,蔡幸汝,蕭英利,“雷射腔體結構”, 中華民國專利 (M463928)

(d) 技術移轉

1.技術名稱：光纖拋光系統(包括:光纖研磨機、研磨盤、光偵測器、單模與多模光纖),委託單位：宏惠光電股份有限公司

(e)專書及專章

(f)作品

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

歷年執行國科會計畫

序號	計畫名稱	計畫編號	執行期間	備註
1	飛秒短脈衝雷射在奈米結構光電材料之非線性光學研究(國科會計畫)	NSC96-2112-M-027-MY3	2007/11/1 至 2010/7/31	計畫主持人
2	高強度雙纖殼摻鐿光子晶體光纖雷射的研究與全光纖白光光源的產生(國科會計畫)	NSC97-2221-E-027 -010 -MY2	2008/8/1 至 2010/7/31	計畫主持人
3	高強度雙纖殼摻鐿光子晶體光纖雷射的研究與全光纖白光光源的產生(國科會計畫)	NSC99-2112-M-027 -001 -MY3	2010/8/1 至 2013/7/31	計畫主持人

陳建銘 副教授

實驗 (研究) 室名稱：生醫奈米光學實驗室

聯絡電話：02-27712171#4635

e-mail：cmchen@ntut.edu.tw

網址：http://www.eo.ntut.edu.tw/files/11-1045-3164-1.php

研究聚焦領域：■ H：健康科技 □ I：智慧整合科技
□ G：綠色科技 □ H：人文與創新元素

專長：1. 生醫感測 2. 光學製作 3. 精密量測 4. 奈米工程

14. 五年內重要論文及著述

(a) 期刊論文

1. Chien-Ming Chen*,Jen-Ai Lee,Tzu-Chuan Huang (2012, Feb). Construction of a light-emitting diode fluorescence detector for high-performance liquid chromatography and its application to fluorometric determination of L-3-hydroxybutyrate. *Biomedical Chromatography*, Vol.26, (2), 256–260. (SCI, 35/73 ,Chemistry Analytical).
2. Mei-Hsiang Lin, Hsiang-Yin Chen, Tzu-Hsin Liao, Tzu-Chuan Huang, Chien-Ming Chen, Jen-Ai Lee (2011, Dec). Determination of time-dependent accumulation of D-lactate in the streptozotocin-induced diabetic rat kidney by column-switching HPLC with fluorescence detection. *Journal of Chromatography B*, 879, 29, 3331-3336. (SCI, 22/73, CHEMISTRY, ANALYTICAL).
3. Wei-Yu Hsu, Chen-Yi Kuo, Takeshi Fukushima, Kazuhiro Imai, Chien-Ming Chen, Pen-Yuan Lin and Jen-Ai Lee (2011, Nov). Enantioselective determination of 3-hydroxybutyrate in the tissues of normal and streptozotocin-induced diabetic rats of different ages. *Journal of Chromatography B*, 879, 29, 3214-3219.. (SCI).
4. W.Y. Hsu, T. Fukushima, K. Imai, C.M. Chen, J.A. Lee (2010, Jul). Fluorometric determination of L-3-hydroxybutyrate in normal and diabetic rat tissues. *Luminescence*, 25: 233–234. (SCI).
5. Chien-Ming Chen*, Chi-Fu Yen, Jen-Ai Lee (2010, Apr). The Development of a Column-Switching High-Performance Liquid Chromatograph System for Chiral Seperation of Mouse urinary D,L-Lactate. *International Journal of Bio-Science and Bio-Technology*, Vol.2, No.1 2010: pp.31-38. (其它).
6. Chien-Ming Chen, Tzu-Chuan Huang, Jen-Ai Lee (2010, Apr). The Elevation of L-3-Hydroxybutyrate Concentrations in the Serum of Aristolochic Acid-Treated Mice. *International Journal of Bio-Science and Bio-Technology*, Vol.2, No.1 2010: pp.25-30.
7. Chien-Ming Chen*, Chi-Fu Yen (2009, Dec). Designing a Column-Switching High-Performance Liquid Chromatograph System for Enantiomeric Separation of Mouse Urinary D,L-Lactate. *Communications in Computer and Information Science*, Vol.57, 69-75. (EI).

8. Chien-Ming Chen, Yih-Huei Uen, Chen-Yi Kuo, Tzu-Chuan Huang,Jen-Ai Lee (2009, Dec). Fluorimetric Determination of L-3-Hydroxybutyrate Concentrations in the Serum of Normal and Aristolochic Acid-Treated Mice. *Communications in Computer and Information Science,*, Vol.57, 63-68. (EI).
9. Chien-Ming Chen*,Jen-Ai Lee,Chi-Fu Yen (2009, Jun). Improvement in Resolution of Laser Capture Microdissection Using Near Field Probe to Capture Nano-particles. *IEEE Transactions on NanoBioscience*, Vol.8, No.2, 113-119.

(b) 研討會論文

1. Chien-Ming Chen,Kun-Lung Lee, Wei-Ming Chen, Han-Yin Yu (2014, Sep). The Development of Film-Based D-lactate Fluorescence Biosensor . XVI International Symposium on Luminescence Spectrometry ISLS2014, Rhodes.
2. Chien-Ming Chen (2013, Nov). Development of D-lactate Biosensor Based on NADH Fluorescence Detection. 2013 Japan-Taiwan Bilateral Symposium in Nano/Bio-Photonics, Shizuoka University, Japan, Shizuoka University, Japan. invited speaker.
3. Po-Jen Chien, Jen-Ai Lee, Chien-Ming Chen,and Kohji Mitsubayashi (2013, Oct). D-lactate biosensor based on optical detection of NADH by UV-LED excitation. Bio4Apps2013, Tokyo Medical and Dental University, Japan.
4. Chien-Ming Chen* (2011, Jan). The development of laser capture microdissection system with nano-resolution. 2011 International Workshop on Advanced Nanovision Science, Shizuoka University, Japan.
5. Yen-Hao Cheng, Kuei-Ming Kan, Chien-Ming Chen,* (2010, Nov). A shear force feedback control system for laser capture microdissection . Proceedings of 16th Microoptics conference.
6. Chien-Ming Chen* , Chan-Yu Shen (2009, Dec). A coating method for thermoplastic transfer film on the hollow cap used in laser capture microdissection system with a fiber probe. TACT 2009 International Thin Films Conference, 台灣台北市.
7. Chien-Ming Chen*, Ping-Chung Liu (2009, Dec). The Development of Doublelayer Transfer Film for Nanoscale Laser Capture Microdissection. TACT 2009 International Thin Films Conference.
8. 陳暐茗、簡廷衛、陳建銘（2014 年 06 月）。以紅光 LED 作為感測方式於計數器的應用。2014 機光電技術與應用研討會，台灣新北市。
9. 黃聆翔、黃嘉偉、余函穎、陳建銘（2014 年 06 月）。螢光物質的濃度對激發光波長的影響之特性研究。2014 機光電技術與應用研討會，台灣新北市。
10. 余函穎, 李仁愛, 陳建銘（2014 年 05 月）。螢光生物感測器用於尿液中之 D-乳酸檢測。台北醫學大學 102 學年度師生聯合學術研究發表會，台灣台北市。
11. 李昆龍, 李仁愛, 陳建銘（2014 年 05 月）。薄膜式 D-乳酸螢光生物感測器之研究。台北醫學大學 102 學年度師生聯合學術研究發表會，台灣台北市。
12. 朱峘瑄，陳建銘*（2012 年 12 月）。八通道紅外線安全系統之設計與開發。2012 第一屆台灣光學設計論壇，台北。日本艾禮富公司產學合作：2014602。
13. 郭志偉，黃仁義，陳建銘*（2012 年 08 月）。三次元都卜勒血液流速計的開發。第三屆國際創新發明大會，中華民國台北市。
14. 陳世銘，邱資婷，黃國展，廖芸珮，徐敏慈，陳泓翔，陳建銘*（2012 年 08 月）。奈米化之黃耆對腎纖維化的療效評估。第三屆國際創新發明大會，中

華民國台北市。

15. 黃國展，陳建銘，陳世銘，張婷雅，黃昱斌，李仁愛（2012 年 08 月）。綠茶多酚對腎病變之全方位治療。第三屆國際創新發明大會，中華民國台北市。

16. 陳暐茗，鄭弘典，張祐誠，余函穎，程彥豪，陳建銘*（2011 年 09 月）。增強螢光用雙層金奈米粒子表面電漿子共振結構之製作。第 15 屆奈米工程暨微系統技術研討會會誌，台灣台北市。國科會：100-2815-C-027-019-E。

17. 林珀琳，陳浩銘，許瑋瑜，楊馥維，陳建銘*（2010 年 12 月）。利用發光二極體激發作 3-羥基丁酸高效液相層析之螢光分析。2010 生物醫學工程科技研討會會刊，台灣高雄義守大學。國科會：99-2815-C-027-017-E。

18. 陳建銘*，劉守錡，陳彥叡，毛鼎言（2009 年 12 月）。細胞融合用微流體晶片之電控酵母菌模擬研究。2009 台灣光電年會會刊。

19. 陳建銘*，林佳慶，程彥豪（2009 年 12 月）。探針式雷射顯微系統快速摘取用載物平台的開發。2009 台灣光電年會會刊。

(c) 專利

(d)(A)發明專利(B)新型專利(C)新式樣專利。

類別	專利名稱	國別	專利號碼	發明人	專利權人	專利核准日期	國科會計畫編號
B	雷射顯微摘取系統	中華民國	M349257	陳建銘 李仁愛	陳建銘 李仁愛	2009/01/ ~2018/04/	NSC-93-2215-E-027-008-
B	三維雷射都卜勒流體測速裝置及系統	中華民國	M367703	陳建銘	陳建銘	2009/11/ ~2018/12/	
B	液相層析裝置	中華民國	M414584	陳建銘 李仁愛	陳建銘 李仁愛	2011/10/ ~2021/3/	NSC-99-2815-C-027-017-E
A	多層轉移膜及其製造方法	中華民國	I381945	陳建銘 李仁愛	陳建銘	2013/01/ ~ 2029/12/	
A	雷射顯微摘取系統及其電控平台	中華民國	I358278	陳建銘	陳建銘	2012/02/ ~2028/12/	NSC-94-2215-E-027-008
A	LASER CAPTURE MICRODISSECTION SYSTEM AND ELECTRIC MOVING STAGE THEREOF	美國	US8248585(B2)	陳建銘 李仁愛	陳建銘	2009/12/ ~ 2029/11/	NSC-93-2215-E-027-008

(d)技術移轉

(e)專書及專章

(f)作品

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

1. 102 學年度國立台北科技大學光電系專題競賽計兩組均第三名指導教授
2. 2012 IIIC 第三屆國際創新發明大會論文甄選優等 指導教授
3. 2012 IIIC 第三屆國際創新發明大會海報競賽金牌獎 指導教授
4. 2012 IIIC 第三屆國際創新發明大會海報競賽金牌獎 指導教授
5. 101 學年度國立台北科技大學光電系專題競賽第二名指導教授
6. 台北科大電資學院第八屆實務專題競賽金手獎佳作

(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

1. 獲邀演講參加台日研討會 2013 Japan-Taiwan Bilateral Symposium in Nano/ Bio-Photonics, Nov. 25-27, 2013.
2. 100-101 年度教育部教卓計畫主管聯席會議專題演講 Aug. 22, 2012
3. 獲邀演講參加日本靜岡大學國際 nano-vision 研討會 Jan. 15-17, 2011.

其他表現

1. 血液檢測之 D 乳酸螢光生醫感測器的開發

本研究建立了一針對血液檢測之新式 D-lactate 螢光生物感測器，使用 UV-LED ，光譜儀和 D-乳酸脫氫酶（D- LDH）來構成。其在血液檢品中具有良好的線性關係和濃度 5μM - 150 μM 校準範圍、準確度 102.84～104.59 %及精密度 4.04～12.40%均在可接受範圍之內，檢測大約 10～15 的樣品在 90 分鐘內所需時間較少，操作較便利，它提供了一種新的酵素檢測方式。計培養一位碩士同學。結果已發表國際研討會論文二篇。(Bio4Apps2013；2013 JTBS 兩篇) 自評：國際目前針對生物感測器有做到統計意義的效果之論文很少，因為動物實驗檢品不易取得，尚無相關 D 乳酸檢測產品，目前已得初步不錯的結果，期刊論文與國內專利都正投稿中。若有更多經費，應該朝向尿液檢測與薄膜檢測化進一步研究。

2. HPLC 分析儀器中發光二極體激發螢光的設計與應用(NTUT-TMU-98-07)

本研究改良了高效液相層析(High Pressure Liquid Chromatography, HPLC)偵測器。偵測器激發光源部分由單顆波長 490nm 發光二極體(LED)取代了原先的電弧燈，調整系統光路，使之產生最大激發光強。實驗以 3-羥基丁酸(3-HB)作為 HPLC 偵測系統研究材料。根據 3-HB 濃度與激發出之螢光強度作圖分析，研究結果顯示出高效液相層析偵測系統之激發光源改成 LED 後，感度與傳統電弧燈相當。其結果已發表國際研討會論文兩篇(XIV. Luminescence Spectrometry 國際會議；2010 生物醫學工程年會兩篇)，2012 期刊論文 1 篇(Biomed. Chromatogr.,)。 自評：國際目前尚無相關研究用於生醫樣本，也沒有相關產品，目前已得初步不錯的結果，期刊論文與國內專利都正投稿中。若有更多經費，應可以提高感度，並進一步大量應用生醫分析領域。

3. 雙層金奈米粒子表面電漿子共振增強螢光之研究(國科會 100-2815-C-027-019-E)

金奈米粒子表面電漿子共振是將微弱可見光螢光信號增強的常用方法。本研究是用雙層金奈米粒子讓表面波在 Z 軸方向亦可產生，使得光增強能力比單層更加提高。探討使用雙層金奈米粒子表面電漿子共振使螢光放大之實驗，先行對只鋪一層金奈米粒子和無鋪金奈米粒子做螢光增強的能力的比較，接著再與鋪雙層做比較。結果雙層: 單層: 無奈米粒子為 4: 2.8: 1。計培養五位大學專題學生。一位碩士同學。結果已投稿國內研討會論文一篇，2011 北科大光電系專題競賽第二名。自評：國際目前尚無相關研究，其鋪設雙層的方法為獨創，目前已得初步的結果，期刊論文與國內專利都正投稿中。若有更多經費，應可以更精密的鋪設與確認，並進一步鋪設更多層的研究。

二、近五年協助產業發展績效

1. 八通道室外紅外線探測器的開發(國際產學合作案-北科大與日商艾禮富公司 2014602,2012.2-2012.12)

本研究將市售上下雙通道紅外警報探測器改成上下八通道，原本的四道光變成十六道光。系統有發射端將單個拋物面反射鏡改裝成四小個拋物面反射鏡，並製作光源驅動電路板，將光源編碼後，使紅外 LED 置於各拋物面反射鏡的焦點，產生近乎平行的八束光。接收端的感測器為四象限感測器(QPD)，經過類比處理後，利用解碼系統以區別十六道光源。只要上半部與下半部各任意一道光同時被遮斷，即會觸動警報。與舊有雙通道系統相比，光束的密度較高，靈敏度增加，使入侵者更易被識別出來，為目前世界最多通道的紅外線安全系統。計畫結案已轉移產商進行開模具商品化。申請中美國專利：A PHOTOELETRIC SENSING SYSTEM AND SIGNAL TRANSMISSION METHOD THEREOF

何文章教授

實驗 (研究) 室名稱：光通訊與綠能光電實驗室

聯絡電話：02-27712171 Ext 4639

e-mail：wjho@ntut.edu.tw

網址：

研究聚焦領域：☐ H：健康科技　　☐ I：智慧整合科技
■ G：綠色科技　　☐ H：人文與創新元素

專長：1.光電元件 2.光通訊 3.太陽能電池 4._____

15. **近 4 年**重要論文及著述

(a) 期刊論文

1. **Wen-Jeng Ho***, Yi-Yu Lee, Guo-Chang Yang and Chia-Ming Chang, "Optical and electrical characteristics of high-efficiency InGaP/InGaAs/Ge triple-junction solar cell incorporated with InGaAs/GaAs QD layers in the middle cell," *PROGRESS IN PHOTOVOLTAICS: RESEARCH AND APPLICATIONS*, /PIP-2602/ Available online (**2015.03**)/ SCI/2013/Impact Factor: 9.696，ISI Journal Citation Reports © Ranking: 2013: 4/83 (Energy & Fuels); 9/136 (Physics Applied); 15/251 (Materials Science Multidisciplinary)
2.
3. **Wen-Jeng Ho***, Yi-Yu Lee, Chi-He Lin, Chien-Wu Yeh, "Performance enhancement of plasmonics silicon solar cells using Al_2O_3/In NPs/TiO_2 antireflective surface coating," *Applied Surface Science*, /APSUSC-29886/ Available online (**2015.03**)/p.1-p.6/SCI/2013 I.F = 2.538, Rank: 2/18, MATERIALS SCIENCE, COATINGS & FILMS.

4. **Wen-Jeng Ho***, Min-Chun Huang, Yi-Yu Lee, Zhong-Fu Hou and Changn-Jyun Liao, "Performance enhancement of ITO/oxide/semiconductor MOS-structure silicon solar cells with voltage biasing," *Nanoscale Research Letters*, /Vol. 9:658/(**2014.12**)/p.1- p.5/SCI/2013 I.F = 2.481, Rank: 53/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

5. **Wen-Jeng Ho***, Yi-Yu Lee, Shih-Ya Su, "External quantum efficiency response of thin silicon solar cell based on plasmonic scattering of indium- and silver-nanoparticles," *Nanoscale Research Letters*, /Vol. 9:483/(**2014.09**)/p.1- p.8/SCI/2013 I.F = 2.481, Rank: 53/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

6. **W.-J. Ho***, M.-L. Hsieh, Y.-Y. Lee, J.-J. Liu, J.-K. Syu, Q.-R. Lai, C.-M. Yu, "Efficiency improvement of 25.7% using a voltage biasing transparent electrode for MIS transistor-based silicon solar cells," *Surface and Coatings Technology*, /Vol. 231/(**2013.09**)/p.447 – p.451/SCI/2013 I.F. = 2.199, Rank: 4/18, MATERIALS SCIENCE, COATINGS & FILMS.

7. **Wen-Jeng Ho***, Po-Hung Tsai, Yi-Yu Lee, Chia-Min Chang, “Electrical and optical properties of thin film silicon solar cells with sub-wavelength surface structure and TiO_2 passivation,” *Vacuum*,/ Available online (**2015.01**)/p.1-p.5/SCI/2013 I.F. = 1.426, Rank: 119/251, MATERIALS SCIENCE, MULTIDISCIPLINAR.

8. **Wen-Jeng Ho***, Shih-Hao Ou, Yi-Yu Lee, Jheng-Jie Liu, “Broadband wavelength and wide-acceptance angle of the SiO_2 sub-wavelength surface structure for solar cells using CF_4 reactive ion etching”, *Thin Solid Films*, /Vol. 529/(2013.02)/p.257–p.262/SCI/2013 I.F. = 1.867, Rank= 6/18, Materials Science, Coating &Films.

9. **W.-J. Ho***, J.-J. Liu, Y.-Y. Lee, “Performance Characterization of Thin-Film InGaAs Solar Cells with Double-Hetero-Structure and InP Window-Layers of Various Thicknesses,” *Journal of Computational and Theoretical Nanoscience*, /(Accepted, **2014.10**)/SCI/2013 I.F. = 1.032, Rank: 160/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

10. J.-M. Lin, **W.-J. Ho***, Y.-P. Chang, H.-H. Lu, “Characterization of ROF signal based on cascaded optical carrier suppression modulation technique,” *Laser Physics*, /Vol. 22, Issue 12/(**2012.12**)/p.1856 – p.1860/SCI/2012 I.F .= 2.545, Rank: 5/79, OPTICS.

11. J.-J. Liu, **W.-J. Ho***, Y.-Y. Lee, C.-M. Chang, “Simulation and fabrication of SiO_2/graded-index TiO2 antireflection coating for triple-junction GaAs solar cells by using the hybrid deposition process,” *Thin Solid Films*, /Vol. 570/(**2014.11**) /p.585-p.590/SCI/2013 I.F. = 1.867, Rank: 6/18, MATERIALS SCIENCE, COATINGS & FILMS.

12. Y.-Y. Lee, **W.-J. Ho***, Y.-T. Chen, “Performance of plasmonic silicon solar cells using indium nanoparticles deposited on a patterned TiO_2 matrix,” *Thin Solid Films*, /Vol. 570/(**2014.11**)/p.194-p.199/SCI/2013 I.F. = 1.867, Rank: 6/18, MATERIALS SCIENCE, COATINGS & FILMS.

13. J.-M. Lin, **W.-J. Ho***, Y.-P. Chang, P.-C. Peng, H.-H. Lu, “Demonstration of optical frequency quadrupling combined with direct/external signal double-sideband suppressed-carrier modulation,” *Optics Communications*, /Vol. 317/(**2014.04**)/p.34 - p.39/SCI/2013 I.F. = 1.542, Rank: 34/82, OPTICS.

14. Y.-Y. Lee, **W.-J. Ho***, C.-M. Yu, J.-J. Liu, C.-F. Lin, H.-P. Shiao, “Current-matched improvement of triple-junction GaAs-based solar cells using periodic patterns incorporated with indium nanoparticle plasmonics,” *Nanoscience and Nanotechnology Letters*, /Vol. 6, No. 2/(**2014.02**)/p.153 - p.158/SCI/2013 I.F = 1.444, Rank: 117/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

15. J.-J. Liu, **W.-J. Ho***, J.-K. Syu, Y.-Y. Lee, C.-F. Lin, H.-P. Shiao, “Performance improvement of a triple-junction GaAs-based solar cell using a SiO_2-nanopillar /SiO_2/TiO_2 graded-index antireflection coating,” *International Journal of Nanotechnology*, /Vol. 11, Issue 1-4/(**2014.03**)/p.311 – p.321/SCI/2013 I.F. = 1.144, Rank: 148/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

16. Y.-Y. Lee, **W.-J. Ho***, J.-J. Liu, C.-H. Lin, “Light-trapping performance of silicon thin-film plasmonics solar cells based on indium nanoparticles and various TiO_2 space layer thicknesses,” *Japanese Journal of Applied Physics*, /Vol. 53, Issue 6/(**2014.06**)/06JE11/SCI/2013 I.F. = 1.057, Rank: 90/136, PHYSICS, APPLIED.

17. Y.-Y. Lee, **W.-J. Ho***, C.-H. Lin, “Performance of Triple-Junction GaAs-Based Solar Cells Containing Metallic Nanoparticles on the TiO_2-Space-Layer with Different Coverage-Levels,” *Journal of Computational and Theoretical Nanoscience*, /(Accepted, **2014.05**)/SCI/2013 I.F. = 1.032, Rank: 160/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

18. J.-M. Lin, **W.-J. Ho***, Y.-P. Chang, P.-C. Peng, H.-H. Lu, “Signal up-conversion for a radio-over-fiber system with modulation types based on a frequency quadrupling technique,” *Microwave and Optical Technology Letters*, /Vol. 56, Issue 7/(**2014.07**)/p.1603 – p.1610/SCI/2013 I.F. = 0.623, Rank: 188/247, ENGINEERING, ELECTRICAL & ELECTRONIC.

19. J. M. Lin, **W. J. Ho***, “Dynamic-Performance Characterization of C-Band EDFA Using ASE-Power Peak-Selective Feedback Gain-Clamping”, *Laser Physics*, /Vol. 22, No. 4/(**2012.04**)/p.765–p.769/SCI/2012 I.F. = 2.545, Rank=5/79, Optics.

20. **W.-J. Ho***, Y.-Y. Lee, Y.-T. Chen, “Characterization of plasmonic silicon solar cells using indium nanoparticles/TiO_2 space layer structure,” *Advanced Materials Research,* /Vol. 684 /(**2013.04**)/p.16 – p.20/EI/2013.

(b) 研討會論文

2015:

1. Kuan-Yu Hsiao, **Wen-Jeng Ho***, Po-Yueh Cheng, Chien-Wu Yeh, Ruei-Siang Sue, Yu-Tang Shen, Chia-Hua Hu, and Yu-Jie Deng, “Fabrication and Optical Characterization of Ultra-Thin Anodic Aluminum Oxide Nanoporous Templates,” *The 4th International Symposium on Next-Generation Electronics (ISNE 2015)*, Paper TD: 270113, Taipei, Taiwan, 4-6 May, 2015.
2. Zhong-Fu Hou, **Wen-Jeng Ho***, Chien-Wu Yeh, Ruei-Siang Sue, Yu-Tang Shen, Chia-Hua Hu, and Yu-Jie Deng “Simulation and Demonstration of MOS-Structure Silicon Solar Cell Using

ITO/Al_2O_3/TiO_2 Antireflective Coating," *The 4th International Symposium on Next-Generation Electronics (ISNE 2015)*, Paper TD: 270116, Taipei, Taiwan, 4-6 May, 2015.

3. Guo-Chang Yang and **Wen-Jeng Ho***, "Efficiency improvement of C-Si solar cell using down-conversion europium-doped silicate-phosphors by spin-on film coating," *10th International Green Energy Conference (IGEC-X-2015)*, ID No. : IGEC-2014-1419, Taichung, Taiwan, May 24-27, 2015.

2014：

4. Chia-Ming Chang, **Wen-Jeng Ho***, and Po-Hung Tsai, "Simulation and Characterization of the performance of Thin-Film Silicon Solar Cell with Sub-Wavelength Nano-Porous Emitter Profiles," *the 7th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-7)*, ID No. of OSS-008, Hsinchu, Taiwan, October 5-9, 2014.
5. Po-Yueh Cheng, **Wen-Jeng Ho***, Guo-Chang Yang, and Kuan-Yu Hsiao, "Plasmonics Silicon Solar Cell Based on Periodic Indium Nanoparticles Using Ultra-Thin Anodic Aluminum Oxide Template," *the 7th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-7)*, ID No. of PNS-007, Hsinchu, Taiwan, October 5-9, 2014.
6. Yi-Yu Lee, **Wen-Jeng Ho***, and Chien-Wu Yeh, "Efficiency of 18.25% Silicon Solar Cell Fabricated by Fully Spin-On Film Processing for Phosphorous Diffusion and SiO_2/TiO_2-Graded-Index Antireflection Coating," *the 7th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-7)*, ID No. of PTF-013, Hsinchu, Taiwan, October 5-9, 2014.
7. **Wen-Jeng Ho***, and Yi-Yu Lee, Chi-He Lin, "Performance Enhanced of Plasmonics Silicon Solar Cells Using Al_2O_3/In NPs/TiO_2 Antireflective Coating," *the 7th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-7)*, ID No. of PRE-004, Hsinchu, Taiwan, October 5-9, 2014.
8. **W.-J. Ho***, G.-C. Yang, C.-M. Chan, J.-J. Liu, Y.-Y. Lee, H.-P. Shiao, "Optical and Electrical Characterization of High-Efficiency InGaP/InGaAs/Ge Triple-Junction Solar Cell Incorporated with InGaAs/GaAs QDs Layers in Middle Cell," *29th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2014)*, Paper 4CV.3.6, Amsterdam, The Netherlands, September 22-26, 2014.

9. **W.-J. Ho***, M.-C. Huang, Y.-Y. Lee, G.-C. Yang, C.-M. Chan, Z.-F. Hou, J.-J. Liao, "Demonstration of High-Efficiency ITO/TiO_2/P-N Semiconductor MIS-Structure Silicon Solar Cell Enhancing with Induced Electric Field on Space Charge Region by Voltage Biasing on ITO," *29th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2014)*, Paper 4CV.3.6, Amsterdam, The Netherlands, September 22-26, 2014.

10. Po-Hung Tsai, **Wen-Jeng Ho***, Chia-Min Chang, Hong-Jhang Syu, "Performance Enhancement of Thin-Film Silicon Solar Cells with Nanoporous Surface Structure and TiO_2 Passivation Layer Based on Optimal Light Trapping and Surface Recombination Reducing," *6th IEEE International Nanoelectronics Conference (IEEE INEC 2014)*, Paper INEC0052-NF, held in Hokkaido Univ.,

Sapporo, Japan on July 28-31 2014.

11. Chi-He Lin, **Wen-Jeng Ho***, and Yi-Yu Lee, “Photovoltaic Performance Enhancement of Plasmonics Silicon Solar Cells Using Indium Nanoparticles Embedded in Al_2O_3/TiO_2 Layer Structure,” *6th IEEE International Nanoelectronics Conference (IEEE INEC 2014)*, Paper INEC0053-NP, held in Hokkaido Univ., Sapporo, Japan on July 28-31 2014.

12. Min-Chun Huang, **Wen-Jeng Ho***, Yi-Yu Lee, Zhong-Fu Hou, and Jian-Jyun Liao, “Demonstration of High Efficiency 19.68% MOS-Structure Silicon Solar Cell Based on TiO_2 Space Layer and Voltage Biasing,” *6th IEEE International Nanoelectronics Conference (IEEE INEC 2014)*, Paper INEC0054-ED, held in Hokkaido Univ., Sapporo, Japan on July 28-31 2014.

13. **Wen-Jeng Ho***, Min-Chun Huang, Guo-Chang Yang, Chia-Ming Chan, Yi-Yu Lee, Zhong-Fu Hou, and Jian-Jyun Liao,” Performance Enhanced of MOS-Structure Silicon Solar Cell Based on the Integration of Photovoltaic Biasing Source,” *40th IEEE Photovoltaic Specialists Conference (IEEE PVSC 2014)*, Paper 89-A13, Denver, CO, USA, Jun 8-13 2014.

14. **Wen-Jeng Ho***, Yuan-Tsz Chen, Yi-Yu Lee, Shih-Ya Su, Guo-Chang Yang, Chia-Ming Chang, and Kuan-Yu Hsiao, “EQE Response of Thin Silicon Solar Cell with Double-Side Two-Metallic Nanoparticle Plasmonics,” *The 3rd IEEE International Symposium on Next-Generation Electronics (IEEE ISNE 2014)*, Paper Y4-9, Taoyuan, Taiwan, May 7-10, 2014.

15. Min-Chun Huang, **Wen-Jeng Ho***,Yi-Yu Lee, Zhong-Fu Hou, Changn-Jyun Liao, Chia-Ming Chang, and Guo-Chang Yang, “Performance Enhanced of ITO/Oxide/P-N-Semiconductor MOS-Structure Silicon Solar Cells with Voltage Biasing, ” *The 3rd IEEE International Symposium on Next-Generation Electronics (IEEE ISNE 2014)*, Paper Y4-9, Taoyuan, Taiwan, May 7-10, 2014.

16. Chia-Ming Chang, **Wen-Jeng Ho***, and Po-Hung Tsai, “Electrical and Optical Properties of Thin Film Silicon Solar Cell with Sub-wavelength Surface Structure and TiO_2 Passivation,” *The 3rd IEEE International Symposium on Next-Generation Electronics (IEEE ISNE 2014)*, Paper Y4-9, Taoyuan, Taiwan, May 7-10, 2014.

17. Jheng-Jie Liu, **Wen-Jeng Ho***,Yi-Yu Lee, “Performance Characterization of Thin-Film InGaAs Solar Cells with Double-Hetero-Structure and InP Window-Layers of Various Thicknesses,” *2014 AMEE Workshop on Nanomaterials and Nanodevices (NMND 2014)*, Paper NMND-13, Hong Kong, April 26-27, 2014.

2013：

18. **Wen-Jeng Ho***, Yung-Ching Chiu and Po-Yueh Cheng, “Deposition and Ch4aracterization of Indium Nanoparticles on Silicon Solar Cell Using Anodic Aluminum Oxide Template,” Optics & Photonics Taiwan, *the International Conference (OPTIC 2013)*, Paper SAT-P0102-P006, Zhongli, Taiwan, December 5-7, 2013.

19. **Wen-Jeng Ho***, Chun-Chin Liao, Yuan-Tsz Chen, and Yi-Yu Lee, “Performance of Plasmonics Thin-Si Solar Cell Using In-NPs on Front- and Ag-NPs on Rear-surface,” Optics & Photonics Taiwan, *the International Conference (OPTIC 2013)*, Paper THU-P0901-P011, Zhongli, Taiwan, December 5-7, 2013.

20. Yi-Yu Lee, **Wen-Jeng Ho***, Jheng-Jie Liu, Chi-He Lin, “Light Trapping Performance in Thin Film Silicon Solar Cell Using Indium Nanoparticle Plasmonics on the Different Thickness of TiO_2 Space Layer,” *26th International Microprocesses and Nanotechnology Conference (MNC 2013)*, Paper 7P-7-35, Royton Sapporo Hakkaido, Japan, November 5-8, 2013.

21. Yi-Yu Lee, **Wen-Jeng Ho*** and Yuan-Tsz Chen, “Characterization of Plasmonics Silicon Solar Cells Using Indium Nanoparticles on Matrix-TiO_2 Space-Layer Coating,” *TACT 2013 International Thin Films Conference*, Paper A-P-516007, Taipei, Taiwan, October 5-9, 2013.

22. Po-Hung Tsai, **Wen-Jeng Ho***, Cheng-Hao Wang, Y.-F. Chien, Y.-C. Yang, H.-Y. Yang, “Performance Characterization of Si Thin-Film Solar Cells Uing Nanopores Surface Structure on the Emitter Layer by Metal-Assisted Chemical Etching,” *TACT 2013 International Thin Films Conference*, Paper B-P-516017, Taipei, Taiwan, October 5-9, 2013.

23. Yi-Yu Lee, **Wen-Jeng Ho*** and Chi-He Lin, “Performance Characterization of Triple-Junction GaAs Solar Cell Employing Metallic Nanoparticle on the TiO_2 Space-Layer with Different Coverage and Thickness,” *TACT 2013 International Thin Films Conference*, Paper C-P-516004, Taipei, Taiwan, October 5-9, 2013.

24. Jheng-Jie Liu, **Wen-Jeng Ho***, Fong-Wei Shiu, Chih-Ming Chen, Min-Chun Huang, Hung-Pin Shiao, “Simulation and Fabrication of SiO_2/Grading-Index TiO_2 Antireflection Coating for Triple-Junction III-V Solar Cell Using Hybrid Deposited Process,” *TACT 2013 International Thin Films Conference*, Paper F-P-516012, Taipei, Taiwan, October 5-9, 2013.

25. **Wen-Jeng Ho***, Chi-He Lin, Yi-Yu Lee, Hung-Pin Shiao, Ching-Fuh Lin, “Additional Increasing in 0.54% Efficiency for Triple-Junction GaAs-Based Solar Cells with DL-ARC Using Periodic Patterns Indium Nanoparticles Plasmonics Light Scattering,” *28th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2013*), Paper 1CV.6.25, Paris, France, September 30-

October 4, 2013.

26. Jia-Ying Wu, **Wen-Jeng Ho***, Jheng-Jie Liu, Yuan-Tsz Chen, Yi-Yu Lee, Min-Chun Huang, Po-Hung Tsai, Chi-He Lin, and Po-Yueh Cheng, "Performance enhancement of a biasing-ITO-AR-electrode MOS-structure silicon solar cells," *2013 18th OptoElectronics and Communications Conference Held Jointly with 2013 International Conference on Photonics in Switching (OECC/PS 2013)*, Paper TuPK-18, Kyoto, Japan, June 30 - July 4, 2013. (ISBN-13: 9784885522710)

27. **Wen-Jeng Ho***, Yi-Yu Lee, Jheng-Jie Lu, Chi-He Lin, Yung-Ching Chiu, and Hung-Pin Shiao, "Improved the Current Matching of the Middle-Cell Current-Limited Triple-Junction GaAs/Ge Solar Cells after Epitaxial Grown Using Matrix Profile TiO_2 Layer and Indium Nanoparticles Plasmonics," *39th IEEE Photovoltaic Specialists Conference (IEEE PVSC 2013)*, Paper 2086 – 2088, Tampa, FL, United states, June 16-21, 2013. (ISSN: 01608371)

28. **Wen-Jeng Ho***, Yi-Yu Lee, Jheng-Jie Liu, Yuan-Tsz Chen, Chi-He Lin and Po-Hung Tsai, "Performance enhanced of silicon solar cells using spin-on-film processes and Indium nanoparticles plasmonics," *2013 Conference on Lasers and Electro-Optics (CLEO 2013)*, Paper JW2A.92, San Jose, Conference article, United states, June 9-14, 2013. (ISBN-13: 9781557529725)

29. **Wen-Jeng Ho***, Yi-Yu Lee and Yuan-Tsz Chen, "Characterization of Plasmonic Silicon Solar Cells Using Indium Nanoparticles/TiO_2 Space Layer Structure," *2013 2nd International Conference on Applied Materials and Electronics Engineering (AMEE 2013)*, Paper , Hong Kong, April 19-20, 2013.

30. Yu-Peng Chang, **Wen-Jeng Ho***, Jhe-Min Lin, Peng-Chun Peng, and Hai-Han Lu, "Transmitted characterization of 625 Mbps/15GHz ROF signal using a direct modulated baseband signal and twice optical carrier suppression modulation," *2013 Progress in Electromagnetics Research Symposium (PIERS 2013)*, Paper 528 – 531, Taipei, Taiwan, March 25-28, 2013. (ISSN: 15599450)

31. Chi-He Lin, **Wen-Jeng Ho***, Yi-Yu Lee, Jheng-Jie Liu, Po-Hung Tsai, and Yu-Peng Chang, "Additional efficiency enhanced for DL-ARC triple-junction GaAs/Ge solar cells based on indium nanoparticles surface plasmon light scattering," Progress in Electromagnetics Research Symposium (PIERS 2013), Paper 680 – 683, Taipei, Taiwan, March 25-28, 2013. (ISSN: 15599450)

32. Yuan-Tsz Chen, **Wen-Jeng Ho***, Yi-Yu Lee, Jia-Ying Wu and Hung-Pin Shiao, "Fabrication of Plasmonics Si Solar Cells Based on Indium Nanoparticles and TiO_2 Space Layer," *2nd IEEE International Symposium on Next-Generation Electronics (IEEE ISNE 2013)*, Paper 417 - 419, Kaohsiung, Taiwan, February 25-26, 2013.

33. Yi-Yu Lee, **Wen-Jeng Ho***, Cheng-Ming Yu, Jheng-Jie Liu, Ching-Fuh Lin, and Hung-Pin Shiao, "Current Matched Improving of Triple-Junctions GaAs-Based Solar Cell using Periodic Patterns Incorporated with Indium Nanoparticle Plasmonics," Proceedings of *the 5th IEEE International Nanoelectronics Conference (IEEE INEC 2013)*, Paper 511 – 513, Singapore, January 2-4, 2013. (ISSN:08917736)

34. Jheng-Jie Liu, **Wen-Jeng Ho***, Jhih-Kai Syu, Yi-Yu Lee, Ching-Fuh Lin, and Hung-Pin Shiao, "Performance improvement of triple-junctions GaAs-based solar cell using SiO_2-nanopillars/SiO_2/TiO_2 graded-index anti-reflection coating," Proceedings of *the 5th IEEE International Nanoelectronics Conference (IEEE INEC 2013)*, Paper 452 – 454, Singapore, January 2-4, 2013. (ISSN:08917736)

2012：

35. Chun-Chin Liao, **Wen-Jeng Ho***, Jhih-Kai Syu, Jheng-Jie Liu, Yi-Yu Lee, Shu-Chia Shiu, and Ching-Fuh Lin, "Fabrication of Oblique Silica Nano-rods Subwavelength Anti-reflection Structures to Enhance Performances of Silicon Solar Cell," Optics & Photonics Taiwan, *2012 the International Conference (OPTIC 2012)*, Paper PA-FR-I-(3)-6, Taipei, Taiwan, December 6-8, 2012.

36. Yi-Chia Hsieh, **Wen-Jeng Ho*** and Jheng-Jie Liu, "Dark Counts Suppression Based on Balanced Dual-APD Scheme for QKD System," Optics & Photonics Taiwan, *2012 the International Conference (OPTIC 2012)*, Paper PB-TH-I-(1)-8, Taipei, Taiwan, December 6-8, 2012.

37. Jia-Ying Wu, **Wen-Jeng Ho***, Quan-Ru Lai, Yi-Yu Lee, and Jheng-Jie Liu, "Study of Field-aided Effect in MOS-structure n-on-p Silicon Solar Cell," Optics & Photonics Taiwan, *2012 the International Conference (OPTIC 2012)*, Paper PI-FR-Ⅰ-(4)-7, Taipei, Taiwan, December 6-8, 2012.

38. **Wen-Jeng Ho***, Jhih-Kai Syu, Cheng-Ming Yu, Yi-Yu Lee, Jheng-Jie Liu, Shu-Chia Shiu, Ching-Fuh Lin and Hung-Bin Shiau, "EQE Enhancement of Top-Cell of GaAs-Based Triple-Junction Solar Cell Using Graded-Index SiO_2 Nano-Pillars Sub-Wavelength AR-Coating," *2012 Conference on Lasers and Electro-Optics (CLEO 2012)*, Paper JTh2A.57, San Jose, Conference article, United states, May 6-11, 2012.

39. Jhe-Min Lin, **Wen-Jeng Ho***, Yu-Peng Chang, and Hai-Han Lu, "Transmitted Characterization of 16 GHz/1.25 Gbps ROF Signal Using a Low-Cost Cascaded Optical Carrier Suppression Modulation," *17th Opto-Electronics and Communications Conference (OECC 2012)*, Paper P1-7, Busan, Korea, July 2-6, 2012.

40. Jhih-Kai Syu, **Wen-Jeng Ho***, Jheng-Jie Liu, Yi-Yu Lee, Chin-Cing Liao, Jia-Ying Wu, Yung-Ching Chiu, and Hung-Pin Shiao, "Performance Characterization of Triple-Junction GaAs Solar Cell with Double Layers AR-Coating and Sub-Wavelength AR-Coating," *17th Opto-Electronics and Communications Conference (OECC 2012)*, Paper P2-39, Busan, Korea, July 2-6, 2012.

41. Quan-Ru Lai, **Wen-Jeng Ho***, Jheng-Jie Liu, Yi-Yu Lee, Chin-Cing Liao, Jia-Ying Wu, and Yung-Ching Chiu, "Photocurrent of MOS-Si Photovoltaic Device Enhanced by an Auxiliary Biasing Solar Cell," *17th Opto-Electronics and Communications Conference (OECC 2012)*, Paper P2-52, Busan, Korea, July 2-6, 2012.

42. Cheng-Ming Yu, **Wen-Jeng Ho***, Yi-Yu Lee, Jheng-Jie Liu, Chin-Cing Liao, Wei-Ting Wang, Shu-Chia Shiu, Ching-Fuh Lin, Hung-Pin Shiau, "Photovoltaic Performances Enhanced by Novel Indium N anoparticles Using Surface Plasmonic in GaAs-Based 3-Junction Solar Cells," *38th IEEE Photovoltaic Specialists Conference (IEEE PVSC 2012)*, Paper 000835 – 000837, Austin, TX, June 3-8, 2012. (ISBN: 9781467300643)

(c) 專利

序號	專利名稱	專利核准號碼	核發專利之國家及日期	專利型態	專利發明人	專利權有效期間	備註
1	偏壓式太陽能電池	I451581	中華民國	發明	何文章、李奕攸	2013/09/01 ~ 2033/09/01	*(103)智專二(一)04359字第10320872680號*

(d) 技術移轉

序號	技術名稱	委託單位	技轉期間	技轉金額	備註
1	串級式單電極強度調變器光四倍頻調變之光纖/無線射頻(ROF)雙向通訊傳輸系統	光合訊科技股份有限公司	2013/06/01-2014/05/31	64000	NSC102-2622-E-027-015-CC3 技術及知識應用產學合作研究計畫補助合約書
2	利用平衡式雙雪崩光二極體之電容與電流匹配架構以降低量子密鑰分配傳輸系統暗計數之研究	恆隆電子工業有限公司	2011/11/01-2012/10/31	73000	NSC100-2622-E-027-029-CC3 技術及知識應用產學合作研究計畫補助合約書

(e)專書及專章

(f)作品

其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、國內外之成就與榮譽、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。

（一）**提出**經特別設計之砷化銦鎵/砷化鎵量子點(InGaAs/GaAs QDs)結構，於 MOCVD 磊晶成長多層量子點結構時不需要使用應變補償技術; **研製**出具有(無)量子點結構三接面砷化鎵太陽能電池，及**進行**元件之光與電特性進行深入探討。此研究成果於 2015 年 1 月 12 日被 **Progress in Photovoltaics: Research and Applications** 期刊接受 SCI 論文發表及 29th EU PVSEC (2014)國際研討會論文。

本研究成果被 29th EU PVSEC (2014)國際研討會篩選及評分為 "One of the best submitted to the Conference"，及 "This year and for the third time the authors of the 22 highest scored abstracts"，及邀請投稿 Progress in Photovoltaics 期刊

[Impact Factor: 9.696，ISI Journal Citation Reports © Ranking: 2013: 4/83 (Energy & Fuels); 9/136 (Physics Applied); 15/251 (Materials Science Multidisciplinary)]。

請參閱 29th EU PVSEC E-mail 來文如下:

寄件日期: 2014/5/19 (週一) 下午 11:10

寄件者: Jon de Gregorio <jon.de-gregorio@wip-munich.de>

收件者: wjho@ntut.edu.tw

副本:

主旨: EU PVSEC 2014 - Invitation to Peer Review Process

Dear Prof. Ho,

In my role as Technical Programmed Chairman and on behalf of the EU PVSEC Executive and Scientific Committee it is my great pleasure to **invite you to take part in the 29th EU PVSEC 2014 Peer Review Process.** Your abstract titled **Optical and Electrical Characterization of High-Efficiency InGaP/InGaAs/Ge Triple-Junction Solar Cell Incorporated with InGaAs/GaAs QDs Layers in Middle Cell** (**4CV.3.6**) **has been rated as one of the best submitted to the Conference.**

This year and for the third time the authors of the 22 highest scored abstracts of the 29th EU PVSEC 2014 are invited to submit a paper for peer review and for publication in the renowned scientific journal Progress in Photovoltaics.

The time schedule is as follows:

30 June 2014
Deadline for Submission of the Final Paper to Progress in Photovoltaics for Peer Review
from July 2014
Notification of Authors by Progress in Photovoltaics
Aug. / Sept. 2014
Revision Deadline (if required)
October 2014
Final Approved Manuscripts accepted online

Publications in Progress in Photovoltaics are scheduled from October 2014, right after the 29th EU PVSEC 2014.

To submit your paper, please follow the instructions in the “Author Guidelines” and “Submit an article” at wileyonlinelibrary.com/journal/progress in photovoltaics When submitting your paper, please select "Paper presented at 29th EU PVSEC, Amsterdam, The Netherlands, 2014" as Manuscript Type.

If you will participate in the Peer Review Process and if you are able to meet the deadline and authors' instructions, please send a confirmation to Mr. Jon De Gregorio from the EU PVSEC Conference Secretariat at jon.de-gregorio@wip-munich.de by 27 May 2014.

Please note that this Peer Review invitation does not alter the notification you already received to present your paper on the occasion of the 29th EU PVSEC 2014. We expect your presentation in Amsterdam, including your paper for publication in the EU PVSEC Conference Proceedings. This invitation is an additional offer for scientific publication. We look forward to the submission of your paper for the Peer Review Process and for you to become part of this peer reviewed publication that will provide a snapshot of the best current work in the field of photovoltaics on the occasion of the 29th EU PVSEC 2014 in Amsterdam, The Netherlands this year.

Yours sincerely,

Dr. Arnulf Jäger-Waldau
European Commission DG JRC, Ispra, Italy
EU PVSEC Technical Programme Chairman

Sent on behalf of Arnulf Jäger-Waldau, Technical Programme Chairman, by

Jon de Gregorio (M.Sc., M.B.A.)
EU PVSEC Programme Secretariat
WIP
Sylvensteinstr. 2
81369 München, Germany
Tel. +49-89-720 12 723
Fax +49-89-720 12 791
jon.de-gregorio@wip-munich.de
www.photovoltaic-conference.com

SCI 論文發表如下:

- ✓ **Wen-Jeng Ho***, Yi-Yu Lee, Guo-Chang Yang and Chia-Ming Chang, "Optical and electrical characteristics of high-efficiency InGaP/InGaAs/Ge triple-junction solar cell incorporated with InGaAs/GaAs QD layers in the middle cell," *PROGRESS IN PHOTOVOLTAICS: RESEARCH AND APPLICATIONS (2015)*, Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/pip.2602. (Accepted, Jan. 12, 2015)

****

（二）**建立及探討**偏壓式 MOS 結構矽太陽能電池特性提升之研究; 我們已**有 2 篇 SCI 論文**(如下所示)及國際著名研討會論文發表。**其中一篇 SCI 論文被 Renewable Energy Global Innovations Ltd , Canada 於 2014 年篩選出為 " a Key Scientific Article contributing to the excellence in Energy research**"。

請參閱 Renewable Energy Global Innovations E-mail 來文如下:

寄件日期: 2014/2/19 (週三) 下午 08:12

寄件者: Paul Richards Paul.Richards@REGInnovations.org

收件者: wjho@ntut.edu.tw

副本:

主旨: Efficiency improvement of 25.7% using a voltage biasing transparent electrode for MIS transistor-based silicon solar cells

Dear Dr. Ho,

We are pleased to let you know that our Target Selection Team at Renewable Energy Global Innovations has identified your recent publication: **Efficiency improvement of 25.7% using a voltage biasing transparent electrode for MIS transistor-based silicon solar cells as a Key Scientific Article contributing to the excellence in Energy research**. We would therefore like to feature it on our next edition of Renewable Energy Global Innovations Series.

Renewable Energy Global Innovations **{ISSN 2291-2460}** alerts the scientific and industrial community to innovative papers considered to be of importance to the progress in renewable energy technologies (for this week edition click here). *Renewable Energy Global Innovations* is viewed almost 325,000 times each month by our audience of academic and industrial R&D scientists and it is featured on the intranets of a growing number of the top 40 Energy and industrial companies as well as major academic institutions.

Papers featured by *Renewable Energy Global Innovations* gain extensive exposure. This is good for us since our initial aim was to establish an environment that helps advance the implementation of new and promising renewable energy technologies. We also believe that high quality research deserves recognition and perhaps more importantly, exposure through *Renewable Energy Global Innovations* is therefore also good for you and your organization since this provides a showcase for key studies such as yours. This exposure has the added benefit of encouraging industrial funding and licensing.

There is a small processing charge for featuring Key Scientific Articles on *Renewable Energy Global Innovations* ($35 USD). If you accept our invitation we will feature the summary of your article with proper citation of the original Journal. You also have the option of adding further information relating to your work including an image (not-violating copyrights). This may extend your findings; further highlight the importance of your work and organization's activities; or if relevant clarify licensing or partnering opportunities related to your findings. Each of these options is intended to stimulate scientific and developmental advancement. We will process your publication after receiving the payment (click here). If you prefer other than Paypal online processing, please let us know.

Please do take the time to explore top papers featured based on the quality of research and its potential impact at *Renewable Energy Global Innovations* http://REGinnovations.org.

Please don't hesitate to contact me if you need any further information.

Respectfully,

Paul Richards, PhD MBA
VP Scientific affairs, Renewable Energy Global Innovations Ltd
1880 Hennessy Crescent, Ottawa, K4A 3X8, Ontario, Canada
Tel (+1) 613 878 3745

Email: Paul.Richards@REGInnovations.org

http://REGinnovations.org

寄件日期: 2014/3/8 (週六) 下午 10:28

寄件者: Paul Richards Paul.Richards@REGInnovations.org

收件者: wjho@ntut.edu.tw

副本:

主旨: Efficiency improvement of 25.7% using a voltage biasing transparent electrode for MIS transistor-based silicon solar cells

Dear Dr Ho,

Your article is now featured online on Renewable Energy Global Innovations {ISSN 2291-2460} (http://reginnovations.org/).

Please don't hesitate to contact me if you publish in the future a research article and feel it is worth high exposure and we will be delighted to serve your research.

May I take this opportunity to wish you best of luck in your future studies.

SCI 論文發表如下:

- ✓ **Wen-Jeng Ho***, Min-Chun Huang, Yi-Yu Lee, Zhong-Fu Hou and Changn-Jyun Liao, "Performance enhancement of ITO/oxide/semiconductor MOS-structure silicon solar cells with voltage biasing," *Nanoscale Research Letters*, /Vol. 9:658/(**2014.12**)/p.1- p.5/SCI/2013 I.F = 2.481, Rank: 53/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.
- ✓ **W.-J. Ho***, M.-L. Hsieh, Y.-Y. Lee, J.-J. Liu, J.-K. Syu, Q.-R. Lai, C.-M. Yu, "Efficiency improvement of 25.7% using a voltage biasing transparent electrode for MIS transistor-based silicon solar cells," *Surface and Coatings Technology*, /Vol. 231/(**2013.09**)/p.447 – p.451/SCI/2013 I.F.=2.199, Rank: 4/18, MATERIALS SCIENCE, COATINGS & FILMS.

另外，指導研究生黃旻駿(Min-Chun Huang)論文，參加 IEEE 3rd International Symposium on Next-Generation Electronics (ISNE 2014)研討會論文發表，榮幸獲得 ***2014 ISNE*** **Best Student Paper Award** (如下所示)

ISNE 2014

presents

2014 ISNE Best Student Paper Award (Poster)

to

Min-Chun Huang, Wen-Jeng Ho, Yi-Yu Lee, Zhong-Fu Hou, Changn-Jyun Liao, Chia-Ming Chang, and Guo-Chang Yang*

National Taipei University of Technology, Taipei, Taiwan, R.O.C.

for the paper entitled

Performance Enhanced of ITO/Oxide/P-N-Semiconductor MOS-Structure Silicon Solar Cells with Voltage Biasing

7-10 May, 2014

IEEE 科 技 部 Ministry of Science and Technology

Jacob kou-chen Liu

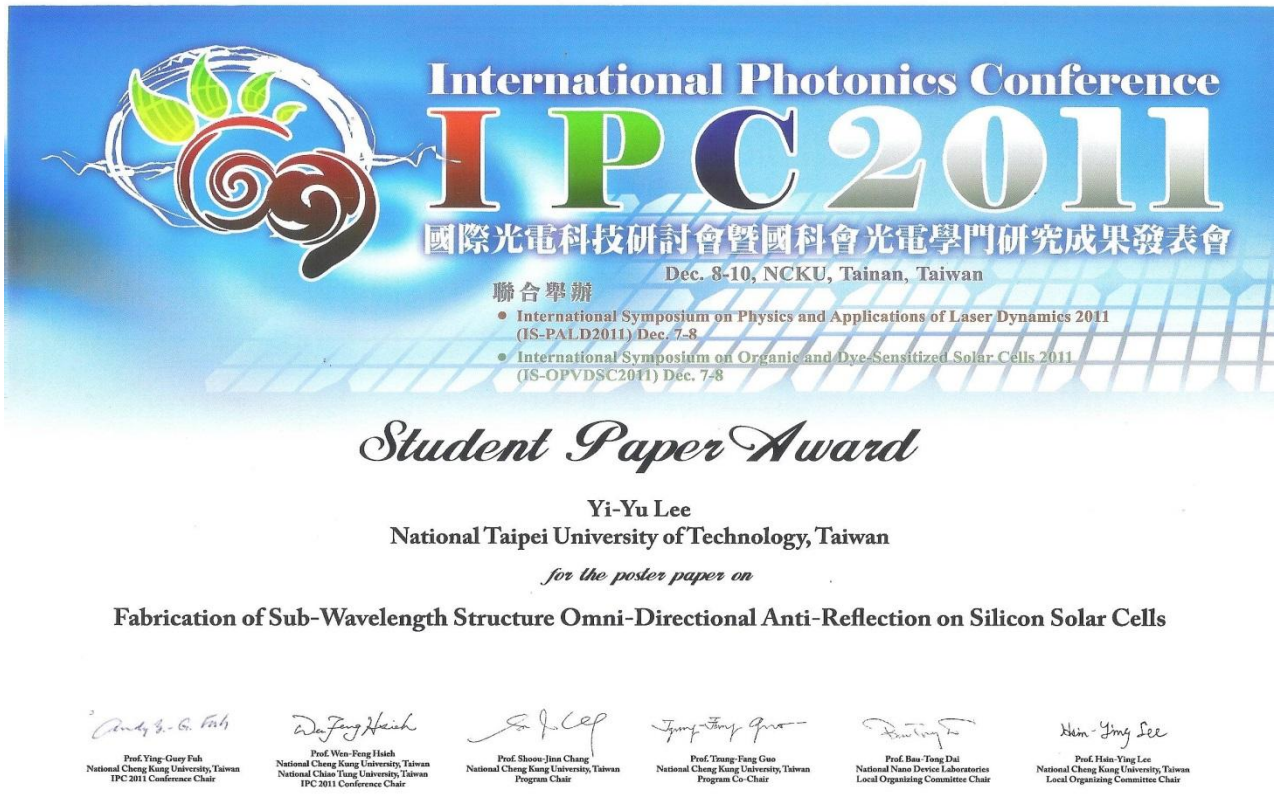
Dr, Kou-Chen Liu

****

（三）**完成模擬及製作**具低反射寬波長範圍及可接收廣角度入射光之次波長表面結構抗反射層，並將其應用於矽太陽能電池特性提升之研究；目前已我們已有 2 篇 SCI 論文(如下所示)及國際著名研討會論文發表。相關之研究，指導研究生李弈攸(Yi-Yu Lee)論文發表於 IPC-2010 研討會榮獲 "**Student Paper Award**" 獎(如下所示)及指導研究生張家銘(Chia-Ming Chang)論文發表於 VASSCAA-7 研討會榮獲 "**Student Award**" 獎(如下所示)。

SCI 論文發表如下:

- ✓ **Wen-Jeng Ho***, Po-Hung Tsai, Yi-Yu Lee, Chia-Min Chang, "Electrical and optical properties of thin film silicon solar cells with sub-wavelength surface structure and TiO_2 passivation," *Vacuum*,/ Available online (**2015.01**)/p.1-p.5/SCI/2013 I.F. = 1.426, Rank: 119/251, MATERIALS SCIENCE, MULTIDISCIPLINAR.
- ✓ **Wen-Jeng Ho***, Shih-Hao Ou, Yi-Yu Lee, Jheng-Jie Liu, "Broadband wavelength and wide-acceptance angle of the SiO_2 sub-wavelength surface structure for solar cells using CF_4 reactive ion etching", *Thin Solid Films*, /Vol. 529/(2013.02)/p.257–p.262/SCI/2013I.F.=1.867, Rank= 6/18, Materials Science, Coating & Films.


International Photonics Conference
IPC2011
國際光電科技研討會暨國科會光電學門研究成果發表會
Dec. 8-10, NCKU, Tainan, Taiwan
聯合舉辦
International Symposium on Physics and Applications of Laser Dynamics 2011 (IS-PALD2011) Dec. 7-8
International Symposium on Organic and Dye-Sensitized Solar Cells 2011 (IS-OPVDSC2011) Dec. 7-8
Student Paper Award
Yi-Yu Lee
National Taipei University of Technology, Taiwan
for the poster paper on
Fabrication of Sub-Wavelength Structure Omni-Directional Anti-Reflection on Silicon Solar Cells
Prof. Ying-Guey Fuh
National Cheng Kung University, Taiwan
IPC 2011 Conference Chair
Prof. Wen-Feng Hsieh
National Cheng Kung University, Taiwan
National Chiao Tung University, Taiwan
IPC 2011 Conference Chair
Prof. Shoou-Jinn Chang
National Cheng Kung University, Taiwan
Program Chair
Prof. Tzung-Fang Guo
National Cheng Kung University, Taiwan
Program Co-Chair
Prof. Bau-Tong Dai
National Nano Device Laboratories
Local Organizing Committee Chair
Prof. Hsin-Ying Lee
National Cheng Kung University, Taiwan
Local Organizing Committee Chair


IUVSTA
VASSCAA
7
Student Award
This award is presented to
Chia-Min Chang
for his/her excellent research work presented in
7th Vacuum and Surface Sciences Conference of Asia and Australia
VASSCAA-7
October, 09, 2014
Gao-Yu Hsiung
Chair
VASSCAA-7
Jason Chang
Chair
VASSCAA-7 Program Committee

****

（四）**建立及探討**奈米**銦粒子(Indium Nanoparticles; In NPs)表面電漿子(Plasmons)**共振及散射(Scattering)效應，並將其應用於矽太陽能電池特性提升之研究; 我們提出之新穎性 In NPs 表面電漿子研究，有異於傳統之金(Au)及銀(Ag)粒子表面電漿子用於矽太陽能電池研究;目前已我們已有 3 篇 SCI 論文(如下所示)及國際著名研討會論文發表。相關之研究,指導研究生謝明利(Ming-Li Xie)論文發表於OPTIC-2010研討會榮獲 "**Student Paper Award**"獎(如下所示)。

SCI 論文發表如下:

- ✓ **Wen-Jeng Ho***, Yi-Yu Lee, Shih-Ya Su, "External quantum efficiency response of thin silicon solar cell based on plasmonic scattering of indium- and silver-nanoparticles," *Nanoscale Research Letters*, /Vol. 9:483/(**2014.09**)/p.1- p.8/SCI/2013 I.F = 2.481, Rank: 53/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.
- ✓ Y.-Y. Lee, **W.-J. Ho***, Y.-T. Chen, "Performance of plasmonic silicon solar cells using indium nanoparticles deposited on a patterned TiO_2 matrix," *Thin Solid Films*, /(**2014.11**)/p.194-p.199/SCI/2013 I.F. = 1.867, Rank: 6/18, MATERIALS SCIENCE, COATINGS & FILMS.
- ✓ Y.-Y. Lee, **W.-J. Ho***, J.-J. Liu, C.-H. Lin, "Light-trapping performance of silicon thin-film plasmonics solar cells based on indium nanoparticles and various TiO_2 space layer thicknesses," *Japanese Journal of Applied Physics*, /Vol. 53, Issue 6/(**2014.06**)/06JE11/SCI/2013 I.F.=1.057, Rank: 90/136, PHYSICS, APPLIED.
- ✓ **W.-J. Ho***, Y.-Y. Lee, Y.-T. Chen, "Characterization of plasmonic silicon solar cells using indium nanoparticles/TiO_2 space layer structure," *Advanced Materials Researc*h, /Vol. 684 /(**2013.04**)/p.16 – p.20/EI/2013.

2010 International Conference on Optics and Photonics in Taiwan

Student Paper Award

Author： Ming Li Xie

Title： Surface Plasmon of Indium Nanoparticles Enhanced Silicon Solar Cells

Affiliation： National Taipei University of Technology

Tsung-Yuan Kuo

OPT'10 Conference Chair

****

（五）**建立及探討**奈米鋁粒子表面電漿子之共振及散射效應，並將其應用於三接面 GaAs 太陽能電池改進電流匹配及特性提升之研究; 奈米鋁粒子表面電漿子應用於三接面 GaAs 太陽能電池電流匹配改進及有效性之研究目前很少，我們已有 5 篇 SCI 論文(如下所示)及國際著名研討會論文發表。

SCI 論文發表如下:

- ✓ **W.-J. Ho***, J.-J. Liu, Y.-Y. Lee, "Performance Characterization of Thin-Film InGaAs Solar Cells with Double-Hetero-Structure and InP Window-Layers of Various Thicknesses," *Journal of Computational and Theoretical Nanoscience*, /(Accepted, **2014.10**)/SCI/2013 I.F. = 1.032, Rank: 160/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.
- ✓ J.-J. Liu, **W.-J. Ho***, Y.-Y. Lee, C.-M. Chang, "Simulation and fabrication of SiO_2/graded-index TiO_2 antireflection coating for triple-junction GaAs solar cells by using the hybrid deposition process," *Thin Solid Films*, /(**2014.11**)/p.585-p.590/SCI/2013 I.F. = 1.867, Rank: 6/18, MATERIALS SCIENCE, COATINGS & FILMS.
- ✓ Y.-Y. Lee, **W.-J. Ho***, C.-M. Yu, J.-J. Liu, C.-F. Lin, H.-P. Shiao, "Current-matched improvement of triple-junction GaAs-based solar cells using periodic patterns incorporated with indium nanoparticle plasmonics," *Nanoscience and Nanotechnology Letters*, /Vol. 6, No. 2/(**2014.02**)/p.153 - p.158/SCI/2013 I.F=1.444, Rank: 117/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.
- ✓ J.-J. Liu, **W.-J. Ho***, J.-K. Syu, Y.-Y. Lee, C.-F. Lin, H.-P. Shiao, "Performance improvement of a triple-junction GaAs-based solar cell using a SiO_2-nanopillar /SiO_2/TiO_2 graded-index antireflection coating," *International Journal of Nanotechnology*, /Vol. 11, Issue 1-4/(**2014.03**)/p.311 – p.321/SCI/2013 I.F.= 1.144, Rank: 148/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.
- ✓ Y.-Y. Lee, **W.-J. Ho***, C.-H. Lin, "Performance of Triple-Junction GaAs-Based Solar Cells Containing Metallic Nanoparticles on the TiO_2-Space-Layer with Different Coverage-Levels," *Journal of Computational and Theoretical Nanoscience*, /(Accepted, **2014.05**)/SCI/2013 I.F. = 1.032, Rank: 160/251, MATERIALS SCIENCE, MULTIDISCIPLINARY.

****

以上所提之研究內容具創新性及獨特性，因此，送審人在太陽能電池研究所提之研究計畫，經多位委員的審查後能獲得認同與支持，也很榮幸能獲得科技部經費**補助連續 2 個多年期計畫**，近年獲准計畫如下:

(1) 以分佈是 p-n junction 及自偏鴨等新穎概念來提升太陽能電池之轉換率 (NSC 99-2221-E-027-050-)。

(2) 利用新穎奈米鋁粒子表面電漿提升矽及砷化鎵太陽能電池轉換效率之研究(**NSC 100-2221-E-027-053-MY3,多年期計畫**)。

(3) 利用新穎光伏偏壓源及 MOS 元件結構整合技術以提升太陽能電池轉換效率之研究(**NSC 103-2221-E-027-049-MY3, 多年期計畫**)。

- 光通訊研究:

進入國立臺北科技大學後，致力於從無到有的光通訊元件技術的研究環境建置與校外資源整合，另外也結合本校呂海涵教授之研究源資進行相關研究，因此助理教授期間之研究內容以光通訊所占比重較高(~60%)，因此累積了不少光通領域研究能量。在擔任副教授期間，延續過去所累積之能量與經驗，帶領自己的研究生繼續投入新的光通訊相關研究領域，研究內容如下:

(一) 利用自發性輻射(ASE)頂峰功率選擇及光回授方法,建構 Erbium-doped 光纖放大器模組，研究此模組增益箝制之穩定及動態範圍,以提升光通訊傳輸品質;目前已有 1 篇 SCI 論文(如下所示)及國際著名研討會論文發表。

SCI 論文發表如下:

- ✓ J. M. Lin, **W. J. Ho***, "Dynamic-Performance Characterization of C-Band EDFA Using ASE-Power Peak-Selective Feedback Gain-Clamping", *Laser Physics*, /Vol. 22, No. 4/(**2012.04**)/p.765–p.769/SCI/2012 I.F.=2.545, Rank=5/79, Optics.

****

(二) 們研究如何利用增益開關及自我注入技術，以產生連續光歸零碼(RZ Codes)訊號，提升光通訊傳輸品質之研究; 目前已有 1 篇 SCI 論文(如下所示)及國際著名研討會論文發表。

SCI 論文發表如下:

- ✓ J. M. Lin , **W. J. Ho*** , and Y. F. Yang, "Characterization of 1550 nm Sub-Picoseconds Optical Pulse Using a Gain-Switching Distributed Feedback Laser with CW-Mode External-Injection and Pulse-Mode Self-Injection," Laser Physics, /Issue 2, 2012/(**2012.02**)/ SCI/2010 I.F.=2.545, Rank=5/79, Optics

****

(三) 我們利用光四倍頻及雙邊帶載波抑制技術,應用於光纖射頻(ROF)進行雙向傳輸特性提升之研究; 目前已 3 篇 SCI 論文(如下所示)及國際著名研討會論文發表。

SCI 論文發表如下:

- ✓ J.-M. Lin, **W.-J. Ho***, Y.-P. Chang, P.-C. Peng, H.-H. Lu, "Signal up-conversion for a radio-over-fiber system with modulation types based on a frequency quadrupling technique," *Microwave and Optical Technology Letters*, /Vol. 56, Issue 7/(**2014.07**)/p.1603 – p.1610/SCI/2013 I.F.= 0.623, Rank: 188/247, ENGINEERING, ELECTRICAL & ELECTRONIC.
- ✓ J.-M. Lin, **W.-J. Ho***, Y.-P. Chang, P.-C. Peng, H.-H. Lu, "Demonstration of optical frequency quadrupling combined with direct/external signal double-sideband suppressed-carrier modulation," *Optics Communications*, /Vol. 317/(**2014.04**)/p.34 - p.39/SCI/2013 I.F.=1.542, Rank: 34/82, OPTICS.

- ✓ J.-M. Lin, **W.-J. Ho***, Y.-P. Chang, H.-H. Lu, "Characterization of ROF signal based on cascaded optical carrier suppression modulation technique," *Laser Physics*, /Vol. 22, Issue 12/(**2012.12**)/p.1856 – p.1860/SCI/2012 I.F.=2.545, Rank: 5/79, OPTICS.

****

以上所提之光通訊研究內容具工程實用性及創新性，因此，送審人在光通訊研究所提之研究計畫，經多位委員的審查後能獲得認同與支持，也很榮幸能獲得科技部經費補助，近年獲准計畫如下:

(1) 利用平衡式雙雪崩光二極體之電容與電流匹配架構以降低量子密鑰分配傳輸系統暗計數之研究(NSC 100-2622-E-027-029-CC3)。

(2) 串級式單電極強度調變器光四倍頻調變之光纖/無線射頻(ROF)雙向通訊傳輸系統(NSC 102-2622-E-027-015-CC3)。

送審人擔任副教授(2012-2015)期間帶領自己的學生在臺北科技大學持續不斷的投入研究工作及積極參與國際學術活動，因此才有機會在**國際期刊論文發表了 17 篇 SCI 論文、1 篇 EI 論文、及 42 篇國際研討會論文**等成果; 充分顯示送審人在太陽能電池及光通訊等研究之持續性、獨立性、及完整性，其研究成果統計如下:

最近 4 年 SCI (EI) 期刊論文發表:

年份	**2012**	**2013**	**2014**	**2015**
篇數	**2**	**2 (1)**	**8**	**5**

最近 4 年國際研討會論文發表:

年份	**2012**	**2013**	**2014**	**2015**
篇數	**8**	**17**	**14**	**3**

- 指導學生進行研究方面：

  送審人在擔任副教授期間，指導已畢業之博士生有 2 位，碩士生有 14 位，大學部專題生有 28 位。其研究之**成果獲得獎項及肯定**者如下:

  （一）研究生

(1) 2014 年 10 月，指導碩士生張家銘(Chia-Ming Chang)論文參加 7th Vacuum and Surface Science Conference of Asia and Australia (VSSCAA-7, 2014) 研討會 Oral 論文發表，榮幸

獲得 **Student Award (僅頒給 5 位優秀者)** (獎狀如前面所示)，提升本校國際學術聲譽。

(2) 2014 年 5 月，指導碩士生黃旻駿(Min-Chun Huang)論文，參加 IEEE 3rd International Symposium on Next-Generation Electronics (ISNE 2014)研討會論文發表，榮幸獲得 **Best Student Paper Award** (獎狀如前面所示)，提升本校國際學術聲譽。

(3) 2012 年 10 月，指導碩士生邱詠清論文，參加 2012 年光電與通訊研討會論文發表，榮幸獲得**優秀論文獎**，提升本校學術聲譽。

2012 光電與通訊工程研討會

2012 Conference on Photonics and Communications

(101)高應科大光通研字第 1011026134 號

優秀論文獎

作品名稱：斜向二氧化矽奈米柱/二氧化矽/二氧化鈦漸變折射率之抗反射層的製作與量測

作　　者：邱詠清、何文章、許智凱、劉政杰、李奕攸

發表單位：國立臺北科技大學光電工程學系

國立高雄應用科技大學校長 楊正宏

2012 光電與通訊工程研討會榮譽主席

中華民國一〇一年十月二十六日

(4) 2013 年指導碩士生林其和論文投稿於 IEEE PVSC-2013 國際研討會被接受，獲得國科會經費補助出席 2013 年 IEEE PVSC 國際研討會論文發表，提升本校國際學術聲譽。

(5) 2013 年指導博士生李奕攸論文投稿於 International Microprocesses and Nanotechnology Conference-2013 (MNC 2013)國際研討會被接受，獲得國科會經費補助出席論文發表，提升本校國際學術聲譽。

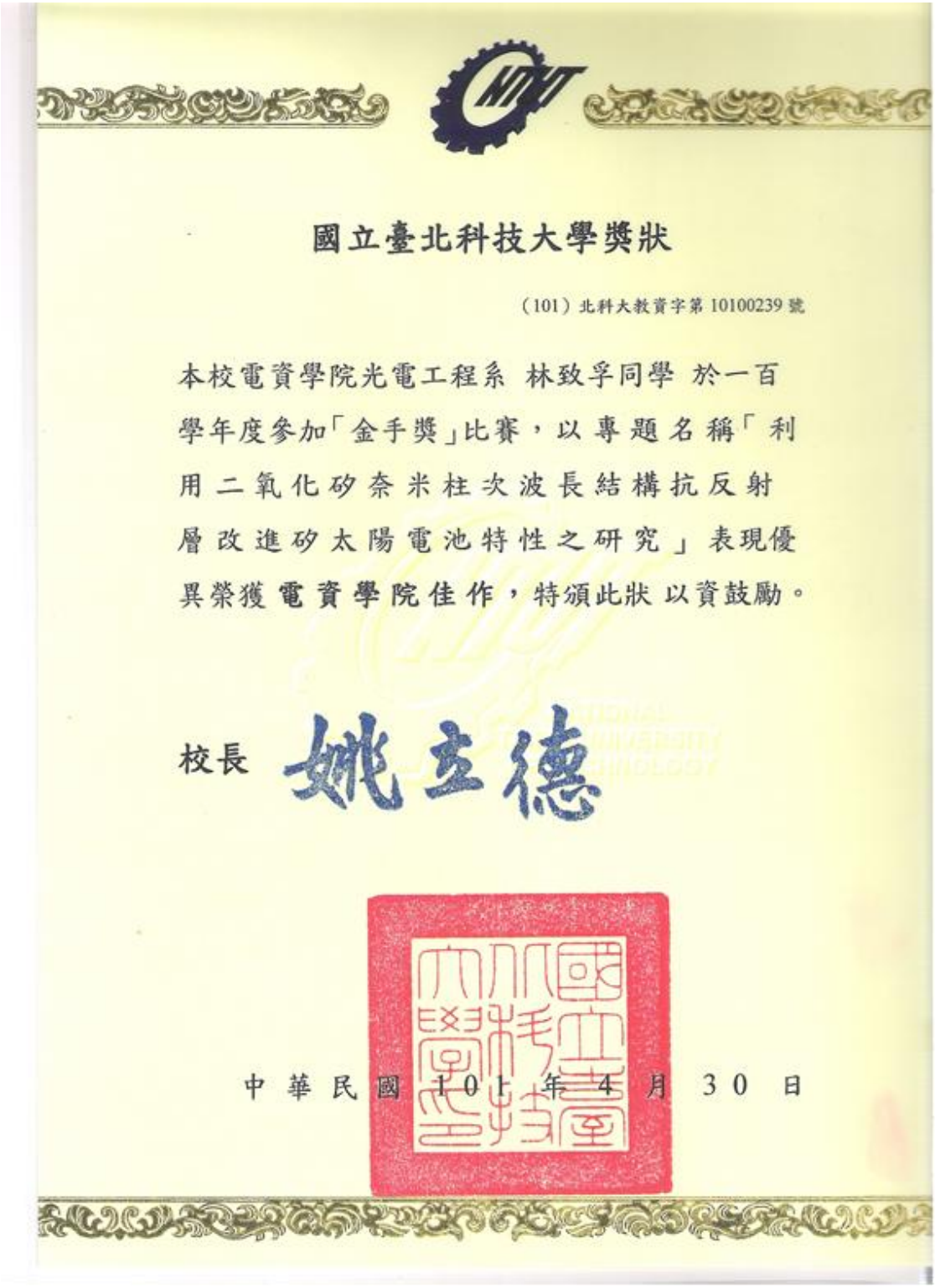
(6) 2013 年指導博士生劉政杰論文投稿於 AMEE Workshop on Nanomaterials and Nanodevices-2014 (NMND 2014)國際研討會被接受，獲得國科會經費補助出席論文發表，提升本校國際學術聲譽。

（二）大學部專題生

(1) 2014 年指導專題生黃星維投稿論文發表於 ISTS-2014 研討會，提升本校國際學術聲譽。

(2) 2012 年指導專題生林伊翔等榮獲本校 101 學年度光電系專題競賽**第二名**。

（3）2012 年指導專題生林致浮同學參加本校**年度金手獎專題競賽榮獲電資學院佳作獎**。



國立臺北科技大學獎狀

（101）北科大教資字第 10100239 號

本校電資學院光電工程系 林致孚同學 於一百學年度參加「金手獎」比賽，以專題名稱「利用二氧化矽奈米柱次波長結構抗反射層改進矽太陽電池特性之研究」表現優異榮獲電資學院佳作，特頒此狀以資鼓勵。

校長 姚立德

中華民國 101 年 4 月 30 日

(4) 2011 年指導專題生郭智維、蔡育揚、蔡廷安、李孟原榮獲本校 100 學年度光電系專題競賽**第三名**

洪巍寬教授

實驗 (研究) 室名稱：光電物理實驗室

聯絡電話：(02)27712171 ext. 4632

e-mail：wkhung@ntut.edu.tw

網址：

研究聚焦領域：□ H：健康科技　　■ I：智慧整合科技
　　■ G：綠色科技　　□ H：人文與創新元素

專長：1. 真空鍍膜 2. 半導體與奈米材料 3.光譜檢測與分析 4. 脈衝雷射蒸鍍

16. 近年重要論文及著述

(a)期刊論文

(b)研討會論文

1. Chiu-Wei Wang, Min-Lun Yang, Tzu-Ching Lin, Wei-Kuan Hung, and Yu-Feng Shiou, “Electrical and optical properties of n-type ZnO:Ga thin films prepared by pulsed laser deposition“, International Conference on Optics and Photonics in Taiwan, Tainan, Taiwan, 3-4 December, 2010.
2. Tzu-Ching Lin, Yi-Cheng Lu, Chiu-Wei Wang, Wei-Kuan Hung, and Da-Ren Liu, ”The structural and optical properties of pulsed laser deposited MnZnO thin films“, International Conference on Optics and Photonics in Taiwan, Tainan, Taiwan, 3-4 December, 2010.
3. Chia-Ming Chen, Po-Liang Huang, Yi-Chih Jao, and Wei-Kuan Hung, “ The structural and optical properties of ZnO-ZnS core-shell nanorods grown in vacuum”, International Conference on Optics and Photonics in Taiwan, Tainan, Taiwan, 3-4 December, 2010.
4. W. H. Hung, “Catalyst-free synthesis and characterization of ZnO and MgZnO nanostructures”, Nanometer-Scale Technology and Materials Symposium 2011, Changhua, Taiwan, 16 December, 2011.
5. Tzu-Ching Lin , Pei-Geng Hung,Wei-Chun Sun,Hung- Jen Shen,Wei-Kuan Hung, “Pulsed laser deposition of ZnMnO films: Effects of temperature and buffer layer’s thickness”, Annual Meeting of the Physical Society of Republic of China, Chiayi, Taiwan, 17 – 19 January, 2012.
6. Yu-Feng Hsiou,Chiu-Wei Wang,Ting-Tse-Chung, Chih-Hsiang Hsiao1,Wei-Kuan Hung, “Study on the Pulsed Laser Deposition of Sb-doped p-type ZnO thin films”, Annual Meeting of the Physical Society of Republic of China, Chiayi, Taiwan, 17 – 19 January, 2012.
7. Chi-Ting Liu, Yen-Jung Chen, Hong-Yu Lai, Wei-Kuan Hung, Yau-Huei Chen, "Effects of temperature and oxygen ambience on the structural and optical characteristics of ZnO thin films fabricated by pulsed laser deposition", Annual Meeting of the Physical Society of Republic of China, Taichung, Taiwan, 21 - 23 January, 2014.
8. Li-JenMa, Hong-YuLai , Wei-Kuan Hung,Da-Ren Liu, "Study on Bi-doped ZnO Thin Film

Fabricated by Pulsed Laser Deposition", Annual Meeting of the Physical Society of Republic of China, Hsinchu, Taiwan, 28 -30 January, 2015.

(c)專利

1. 提升 P 型氧化鋅薄膜電洞濃度的方法，審查中。
2. 提升以(脈衝)雷射蒸鍍法製備 P 型氧化鋅薄膜之電洞濃度的方法，審查中。
3. 氧化鋅鎂薄膜及其製備方法，審查中。

王耀德 助理教授
實驗 (研究) 室名稱：薄膜與奈米材料實驗室
聯絡電話：27712171 x4633
e-mail：wangyt@ntut.edu.tw
網址：http://wwwoe.web.ntut.edu.tw/files/11-1045-3107-1.php

研究聚焦領域：□ H：健康科技　□ I：智慧整合科技
■ G：綠色科技　□ H：人文與創新元素

專長

1.光電半導體	2.薄膜及奈米製程	3.稀磁性半導體	4.高溫超導

17. 近五年成果
(a)期刊論文
(b)研討會論文

1. Zih-Syuan Jiang,Yao-Te Wang, “Study of the Ag-Cu Codoped ZnO Thin Film”, OPTIC 2014, Dec. 4-5, 2014, Taichung, Taiwan
2. Ping-Yien Wu, Yao-Te Wang, “The study of optical Transmittance and electrical conductivity of Fluorine-Doped Tin Oxide Films”, OPTIC 2014, Dec. 4-5, 2014, Taichung, Taiwan
3. 黃盟哲,許博盛,王耀德,“以噴霧熱解法於藍寶石基板上沉積摻銻氧化鋅薄膜”, 物理年會 2012, Jan. 17-19, 嘉義，臺灣。
4. 李卓勛, 王聖文, 王耀德,“藍寶石基板濺鍍摻雜銻氧化鋅薄膜之研究”, 物理年會 2012，Jan. 17-19, 2012, 嘉義，臺灣。
5. Chih-Hsuen Cho, Cho-Hsun Li, Yao-Te Wang, “Sb-doped P-type ZnO Thin Films Fabricated by Ultrasonic Spray Pyrolysis”, OPT 2010, Dec. 3-4, 2010, Tainan, Taiwan
6. Sheng-Chun Peng, Meng-Che Huang and Yao-Te Wang, “The Study of YBCO Thin Films Fabricated by Ultrasonic Spray Pyrolysis”, OPT 2010, Dec. 3-4, 2010, Tainan, Taiwan
7. 曾為隆、蔡維軒、彭聖鈞、王耀德，“奈米結構對YBa2Cu3O7-x臨界電流密度之影響”，OPT 2009, Dec 11-12, 2009 Taipei, Taiwan
8. 曾為隆、蔡維軒、彭聖鈞、王耀德，“奈米結構對YBa2Cu3O7-x臨界電流密度之影響”，OPT 2009, Dec 11-12, 2009 Taipei, Taiwan
9. 林瑞華、周志學、王耀德,“以濺鍍法成長摻雜銻氧化鋅薄膜”， OPT 2009, Dec 11-12, 2009 Taipei, Taiwan
10. 宋秉純、鄭賀名、王耀德，“以超音波噴霧熱解法成長氧化鋅摻錳稀磁性半導體薄膜”，OPT 2009, Dec 11-12, 2009 Taipei, Taiwan
11. 鄭賀名、王耀德，“以增益介質作為負折射率材料”， OPT 2009, Dec 11-12, 2009 Taipei, Taiwan
12. 鄭賀名、王耀德,“半導體雷射增益非線性效應的研究”， OPT 2009, Dec 11-12, 2009 Taipei, Taiwan
13. Ho-Ming Cheng and Yao-Te Wang，“Magnifying the efficiency of total spectrum solar concentrator by aligning the interior receiving surfaces of the solar cells with the incoming sunlight”， OPT 2009, Dec 11-12, 2009 Taipei, Taiwan

Ho-Ming Cheng and Yao-Te Wang，“Magnifying the efficiency of compound parabolic concentrator by aligning receiving surfaces of solar cells below it with the incident light”， OPT 2009, Dec 11-12, 2009 Taipei, Taiwan

楊恆隆 助理教授
實驗 (研究) 室名稱：Organic Semiconductor Device Lab
聯絡電話：02-27712171 ext.4638
e-mail：yangh@ntut.edu.tw
網址：
專長

1.AMOLED Driving	2.WOLED Lighting	3.	4.

18. 近五年成果
(a)期刊論文
(b)研討會論文
(1) H. Yang, et al., "Alternating Driving Scheme with Filter Circuitry for White Organic Light-Emitting Diode Lighting," Proceeding of IEEE Photonic Conference 2014, pp.26-27
(2) H. Yang, et al., "The Profiling of Planar Illuminative Patterns Using Multiple White Organic Light-Emitting Diodes," Proceeding of SPIE 2014, Vol. 9183
(3) H. Yang, et al., "The Far-Field Optical Distribution Profiles and Properties of a Planar White Organic Light-Emitting Diode," Proceeding of SPIE 2013, Vol. 8829, 88291V-1
(4) H. Yang, et al., "Transient Thermal Analysis of White Organic Light-Emitting Diode for Heat-Dissipation Application," Proceeding of SPIE 2012, Vol. 8476, 847624-1
(5)H. Yang, et al.," Profiling the Optical Distribution of a White Organic Light-Emitting Diode as a Lighting Source," Proceeding of SPIE 2011, Vol.8123, 8123N-1 (2011)
(6)H. Yang, et al., "The quantification of optical waveguide loss for operating white organic light emitting diode," Proceeding of SPIE 2010, Vol.7776-57, SPIE 2010 (EI)

(c)專利
(1) 顯示控制裝置及方法之專利案，申請案號『100126037』，已核准確定(05/2014)

(d)技術移轉
筆者 2010 年度應用型產學合作計畫先期技術移轉授權金約為 7 萬元，與業界的互動關係採持續發展。

(e)專書及專章
(f)作品
(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

(1)全數位式主動有機發光面板動態檢測技術
此為 2011 年度專題研究計畫
主動矩陣式有機發光顯示面板(Active-Matrix Organic Light-Emitting Display, 以下稱為 AMOLED) 動態操作下亮度衰減的數位檢測技術。AMOLED 產品可靠度不足的主因來自於 R、G、B 三色 OLED 畫素的本質性衰減，而解決衰減現象最具體的方式是量化補償 OLED 畫素的衰減。本計畫的技術構想是依據 OLED 亮度的衰減會伴隨跨壓上升的具體效應發展一種獨立於 AMOLED 面板以外的外部檢測衰減的數位電路系統可對局部修改畫素電路的 AMOLED 面板的 OLED 畫素進行動態跨壓檢測，跨壓變化的量化模型可對應 OLED 畫素亮度衰減的定性現象，AMOLED 面板即可依據此量化結果進行衰減補償。量化模型可應用於決定衰減補償量的多寡，是本技術構想配套的核心技術，且未來進行電腦程式化之後可技術移轉用於生產線上，對於國內的 AMOLED 面板廠商將有實質的助益。

(2) 應用白光有機發光二極體之省電式智慧型背光源技術
此為 2010 年度應用型產學合作計畫

本計畫的主要工作內容是接續筆者 2009 年度的教育部產學合作計畫的結果而進一步發展至系統端的技術。在手機等行動通訊器材中所使用的中小尺寸液晶面板(LCD)因為有省電的特殊需求使得背光源的省電技術在現在和未來都是一項重要的核心技術，若能應用新的技術發展中小尺寸液晶面板所需的特用省電背光源預期將會有相當高的產業價值，本計畫的目的在於以 WOLED 技術為基礎而進行高附加價值且可顯示不同區域亮度的省電式智慧型 LCD 背光源的應用導向研究，主要工作內容是提出省電式智慧型背光源的新型驅動電路系統模型和相關參數。

(3)有機白光發光二極體(WOLED)的特用照明應用
此為筆者團隊所執行的 2009 年度產學合作計畫，技術核心為省電驅動技術。

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)
(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

其他表現(包含：近五年內最具代表性之學理創新、應用技術突破、協助產業發展績效、在人才培育及研究團隊建立與服務方面的重要貢獻獲成就，或其他表現等)。
(1)省電型主動式有機發光顯示面板系統的研究與發展
本計畫聚焦於研究與發展次世代平面顯示技術:主動式有機發光顯示面板(AMOLED)省電化的理論基礎與實務相關技術，雖然技術目標是面板相關技術，本質屬於基礎性研究。易言之，本計畫的目的在於建立省電式 AMOLED 的理論模型並發展驗證理論模型之相關技術以做為業界未來在次世代面板設計的基石。其中，理論模型的驗證將以概念型面板進行。本計畫的特色在於特別強化系統方面的實際驗證。因為單一的 OLED 元件耗電效能最佳化不一定代表是面板系統的最佳化結果。另一方面，面板系統的複雜程度遠高於單一元件，因此，系統端的參數才能有效代表面板系統整體的效能。
筆者研究團隊已對 OLED 基本元件的耗電分析以及省電化進行完整的理論分析，易言之，對 OLED 基本元件省電化建立理論基礎是首要工作，也是本計畫的核心工作。在進行理論基礎建構後期，量測 OLED 基本元件耗電分析技術的發展以及量測設備建立的工作也將持續進行。量測所需之 LabVIEW 系統程式開發工作亦將在量測設備建立後立即著手進行。等效電路模型的建立是理論基礎建構的第二階段工作，電腦模擬的工作也將於 LabVIEW 程式平台進行，所需的程式碼將自行開發。在前述工作告一段落之後，OLED 基本元件的實際測試與分將接著進行，並執行理論模型與實際測試的比對工作。
本計畫研究內容與原計畫書所述的第一年計畫相符，並進行原計畫書所述之第二年計畫的部份研究。就研究結果而言，筆者認為有達成預期目標，技術構想也獲得實證，適合在學術期刊發表。筆者已將初步的研究成果口頭發表於國際 1)及國內研討會 2)發表。專利申請的部份須待後續研究將省電因子的實驗完成之後再行之。筆者在此計畫所獲得的技術資料預期對業界評估 AMOLED 面板省電效能有具體幫助。

(2)主動式有機發光顯示面板(AMOLED)畫素驅動電流波型研究

李穎玟教授
實驗（研究）室名稱：光纖與雷射光學實驗室
聯絡電話：(02)27712171 ext.4627
e-mail：ywlee@ntut.edu.tw
網址：http://www.eo.ntut.edu.tw/files/11-1045-6442-1.php
專長
1.雷射物理　2.光纖光學　3.非線性光學及光學材料　4.

19.近五年成果
（a）期刊論文
1 .S. K. Liaw, Y. W. Lee*, H. W. Huang, and W. F. Wu, “Multi-wavelength linear-cavity SOA-based laser array design for multi-parameter and long-haul sensing”, IEEE Sensors Journal, vol.15,no.6, pp. 3353-3358, (2015).
2.J. H. Lin, B. C. Lai, and Y.W. Lee,“High energy rectangular pulse generated in a low repetition rate all normal-dispersion Yb3+-doped fiber laser ”, Laser Physics, vol.25, no.4, 045101, (2015).
3. Y. W. Lee*, H. Y. Ling, Y. H. Lin, and S. Jiang, “Heavily Tm3+-doped silicate fiber with high gain per unit length”, Optical Materials Express, vol.5, no.3 pp.549-557,(2015).
4. J. Geng, Q. Wang, Y. W. Lee, and S. Jiang, “Development of eye-safe fiber lasers near 2 μm”, IEEE Journal of Selected Topics in Quantum Electronics, vol.20, no.5, 904011, (2014).
5. J. H. Lin, Y. W. Lee*, T. C. Lin, B. C. Lai, M. Pal, S. Das, A. Dhar, and M. C. Paul, “Near-infrared supercontinnum generation in single-mode nonlinear Yb3+-doped fiber amplifier”, Optics Express, vol.22, no.13, pp. 16130-16138, (2014).[Selected for publication in Virtual Journal for Biomedical Optics,vol. 9, no.8.]
6. C. L. Chang, P. Y. Lai, Y. Y. Li, Y. P. Lai, C. W. Huang, S. H. Chen, Y. W. Lee and S. L. Huang, “Parasitic stimulated amplification in high-peak-power and diode-seeded nanosecond fiber amplifiers”, IEEE Photonics Journal, vol.6, no.3, 1500809, (2014).
7. Y. W. Lee*, H. W. Chien, C. H. Cho, J. Z. Chen, J. S. Chang, and S. Jiang, “Heavily Tm3+-doped silicate fiber for high-gain fiber amplifiers” , Fibers, vol.1, no.3, pp. 82-92, (2013). (Invited)
8. Y. W. Lee*, M. J. F. Digonnet, S. Sinha, K. E. Urbanek, R. L. Byer, and S. Jiang, “High-power Yb3+- doped phosphate fiber laser sources”, IEEE Journal of Selected Topics in Quantum Electronics, vol.15, no.1, pp. 93-102, (2009).
9. Y. W. Lee*, M. J. F. Digonnet, R. L. Byer, and S. Jiang, “Measurement of high photodarkening resistance in heavily doped phosphate fibers”, Electronics Letters, vol.44, no.1, pp. 14-16, (2008).
10. S. Sinha, D. S. Hum, K. E. Urbanek, Y. W. Lee, M. J. F. Digonnet, M.M. Fejer, and R. L. Byer, “Room-Temperature Stable Generation of 19 Watts of Single-Frequency 532-nm Radiation in a Periodically Poled Lithium Tantalate Crystal”, IEEE Journal of Lightwave Technology, vol.26, no.24, pp. 3866-3871, (2008).
11. Y. W. Lee*, S. Sinha, M. J. F. Digonnet, R. L. Byer, and S. Jiang, “20-W single-mode Yb3+-doped phosphate fiber laser”, Optics Letters, vol.31, no.22, pp. 3255-3257, (2006).
[Also reported in Laser focus world December 2006 issue and Photonics Spectra January 2007

issue]
12. Y. W. Lee, F .C. Fan, B.Y. Gu, B.Z. Dong, M.H. Chou, and Y.C. Huang, “Nonlinear multiwavelength conversion based on an aperiodic optical superlattice in lithium niobate”, Optics Letters, vol.27, no.24, pp. 2191-3, (2002).

(b)研討會論文

1. Y. W. Lee*, C. H. Cho and H. W. Tseng,and S. Jiang, “Tm3+-doped silicate fiber amplifier with gain per unit length of 3.17 dB/cm”, Advanced Solid State lasers (ASSL),oral Shanghai, China, (2014).
2. K. C. Liao, J. H. Lin and Y. W. Lee, “Cascaded raman scattering by Q-switched and mode-locked pulses through Yb3+-doped fiber laser amplifier”, JSAP-OSA joint Symposia,oral Hokkaido, Japan, (2014).
3. S. K. Liaw,Y. W. Lee and W. F. Wu, “Long-range multiwavelength sensing using semiconductor optical amplifier-based fiber laser”,International Symposium on Next-Generation Electronics (ISNE), Tao-Yuan, Taiwan, (2014).
4. S. L. Lin, Y. W. Lee*, K. Y. Hsu, C. W. Huang,and S. L. Huang, “Design of resonantly side-pumped 1645-nm Er:YAG crystal fiber lasers with grating couplers”, CLEO-PR&OECC/PS 2013,oral Kyoto, Japan, (2013)
5. K. Y. Hsu, D. Y. Jheng, S. C. Wang, S.L. Huang, Y. W. Lee, P. S. Yeh,and M. Dubinskii, “Toward single-mode crystalline fiber laser and amplifier”, CLEO-PR&OECC/PS 20, Kyoto, Japan, (2013)
6. S. L. Lin, Y. W. Lee*, C. W. Huang, K. Y. Hsu,and S. L. Huang, “Design of grating coupler for resonantly side-pumped 1645-nm Er:YAG crystal fiber laser”,Optics & Photonics Taiwan, International Conference 2012,Taipei, Taiwan, (2012)
7. V. R. Supradeepa, J. Nicholson, C. Headley, Y.W. Lee, B. Palsdottir, and D. Jakobsen, “Cascaded Raman fiber laser at 1480 nm with output power of 104 W”, Photonics West, 8237-48, San Jose, CA (2012).
8. C. L. Chang, Y. Y. Li, Y. W. Lee, Y. P. Lai,and S. L. Huang, “High performance nanosecond core-pumped ytterbium doped fiber preamplifier module in all-fiber propagation”, International Photonics Conference (IPC),Tainan, Taiwan, (2011)
9. Y. W. Lee*, S. Sinha, M. J. F. Digonnet, R. L. Byer and S. Jiang, “10-Watt, single-mode, single-frequency, 1.03 μm Yb3+-doped phosphate fiber amplifier”, CLEO, CFS1, San Jose, CA (2008).
10. Y. W. Lee*, S. Sinha, M. J. F. Digonnet, R. L. Byer and S. Jiang, “Measurement of high photodarkening resistance in heavily doped phosphate fibers”, Photonics West, 6873-49, San Jose, CA (2008); Proc. SPIE Vol. 6873 (2008).
11. Y. W. Lee*, K. E. Urbanek, M. J. F. Digonnet, R. L. Byer and S. Jiang, “Measurement of the stimulated Brillouin scattering gain coefficient of a phosphate fiber”, Photonics West, 6469-20, San Jose, CA (2007); Proc. SPIE Vol. 6469, 64690L (2007).
12. Y. W. Lee*, S. Sinha, M. J. F. Digonnet, R. L. Byer and S. Jiang, “12-Watt single-mode Yb3+-doped phosphate fiber Laser”, CLEO, CTuI5, Long Beach, CA (2006).
13. Y. W. Lee, F .C. Fan, B.Z. Dong, B.Y. Gu and Y.C. Huang, “Aperiodic optical superlattice in

Lithium Niobate for multi-wavelength conversion", CLEO, CWE5, Long Beach, CA (2002).
14. Y. W. Lee and Y.C. Huang, "Conflicting experimental results of a Nd:YVO4/ Cr4+:YAG passively Q-switched microchip laser", CLEO/ Pacific Rim 2001, P1-35, Japan (2000).

(c)專利

(d)技術移轉

(e)專書及專章

(f)作品

(g) 研發與產學合作計畫(科技部或政府或產學合作計畫、專利及技術轉移或其他計畫)

1. 101/8~104/7 中紅外鎖模光纖雷射與超連續光譜光源之研發(國科會)

2. 103/1~103/12 光纖雷射耐受度、非線性、光孤子或訊號變形之分析與研究 (工業技術研究院)

(h) 獎項與榮譽(研究發展或產學合作獎勵或師生獲獎紀錄)

(i) 其他成果展示(舉辦學術研討會、國內外參展、主辦或協辦活動)

1. 2013 台灣雷射產業國際展

主辦單位:台灣雷射科技應用協會、工業技術研究院、展昭國際企業有限公司

註：

1. 研發白皮書資料，將放置於各院網頁。2. 101/08/01~ 3. 104/07/31