

Department of Mechanical Engineering

National Taiwan University



Research Summary (2006-2010)

May, 2011

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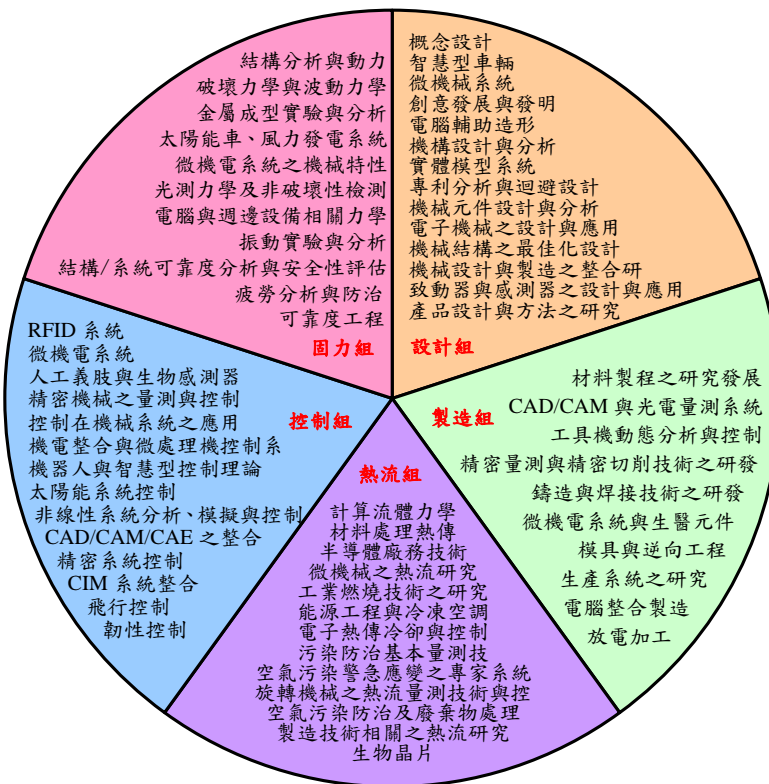
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壹、國立臺灣大學機械工程學系暨研究所概況

臺大機械系創設於1943年，本系以「因應科技與工業之發展趨勢，以培養具前瞻與領導能力之優秀機械工程人才為宗旨」為教育目標。在這個指導原則下，本系悠久的歷史已培養出許多國內機械與精密機電產業中的領導人。為創造世界一流的教育與研究環境，本系已於2005年通過工程教育認證。除了落實傳統機械固力、設計、製造、熱流、控制五個專業領域之基礎課程訓練外，本系亦因應大環境需求強化「新能源」、「精密機械」、「生醫晶片」與「智慧型機器人」等跨領域新興學程的訓練。在研究方面，為了因應國際機械工程科技之發展趨勢，除了當前最迫切的精密奈米製造、新能源技術、智慧型機器人的研究外，本系在微機電系統、次世代引擎燃燒技術、奈米科技、分子動力學、結構完整性及可靠度分析、流體動力、製造技術相關之熱流研究、系統動力、精密控制等各領域均有極傑出的表現。研究成果包括每年發表SCI期刊論文超過100篇及技術專利10件以上。研究成果亦受各方肯定與推崇，獲得國科會的獎項者，目前已有特約研究員7人次、傑出研究獎23人次、吳大猷先生紀念獎1人；校內的獎項，則有9人獲聘為臺灣大學特聘教授；業界及社團法人的獎項，則有東元科技獎2人、中國工程師學會傑出教授3人、機械工程學會傑出教授5人、自動化學會自動化獎章1人等重要獎勵。



The Department of Mechanical Engineering, National Taiwan University

The Department of Mechanical Engineering is established in 1943. The education objective of the department is "to train the leaders with keen senses in the technology trends and foresights in the mechanical engineering industries." The long history of the department has nurtured numerous leaders in the high-tech or traditional industries of Taiwan. To create a top education and research environment in the world, the department has passed the engineering accreditation in 2005. On the education aspect, the department works hard to improve the education on the five conventional mechanical engineering domains including solid mechanics, design, manufacturing, fluidics/heat transfer, and system control. To answer to the rapid evolving environmental demands, the department has recently emphasized on new developing multi-disciplinary studies such as renewable clean energy, precision machining, biomedical microdevices, and intelligent robotics. On the research aspect, the department is strong in the areas of microelectromechanical systems (MEMS), next-generation engine and combustion, nano-technologies, molecular dynamics, structural integrity and reliability analysis, fluid dynamics, manufacturing technologies. More recent efforts have also promoted the researches on precision nano-manufacturing, clean energy, and robotics technology. The department publishes more than 100 journal papers cited by the Science Citation Index and applies for more than 10 patents. There are 3 Distinguished Researchers holding special appointments (7 times in total) with the National Science Council (NSC), 9 professors with NSC Outstanding Research Awards (23 times in total), 1 professor with NSC Da-Yu Wu Memorial Award, 2 Tung-Yuan Technology Award recipients, 1 Distinguished Engineering Professor from the Chinese Institute of Engineering, 5 Distinguished Engineering Professors from Chinese Society of Mechanical Engineering, 1 recipient of Automation medal from the Society of Automation, Taiwan, and 9 holders of Distinguished professorship of National Taiwan University.

貳、統計資料 Statistics

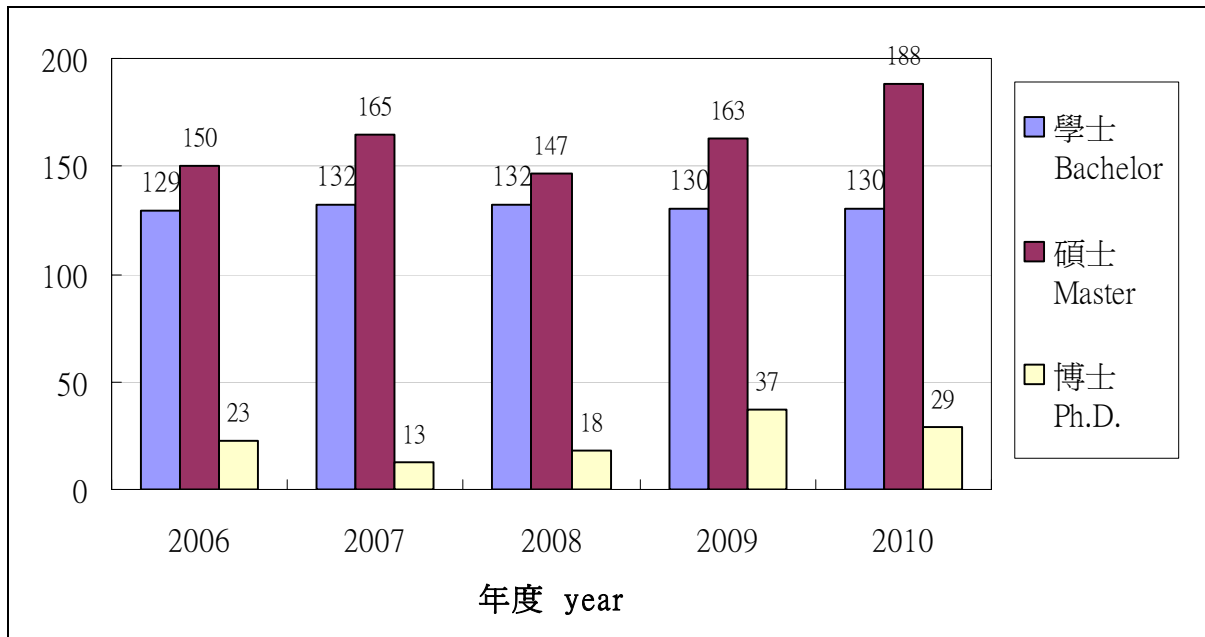
台大機械系 99 學年度教職員統計

Faculty, 2010-2011

教職員 Faculty			人數 People
教師	專任 教師 Full-time	教 授 Professor	38
		副 教 授 Associate professor	10
		助 理 教 授 Assistant professor	5
		合 計 Total	53
	合聘 教師 Joint	教 授 Professor	4
		副 教 授 Associate professor	1
		助 理 教 授 Assistant professor	4
		合 計 Total	9
	兼任 教師 (相當職級) Part-time	教 授 Professor	1
		副 教 授 Associate professor	1
		助 理 教 授 Assistant professor	3
		合 計 Total	5
	支援人力	職 員 Staff	2
技 術 人 員 Technician		10	
工 友 Workman		11	
助 教 Teaching assistant		10	
工 讀 生 Assistant		7	

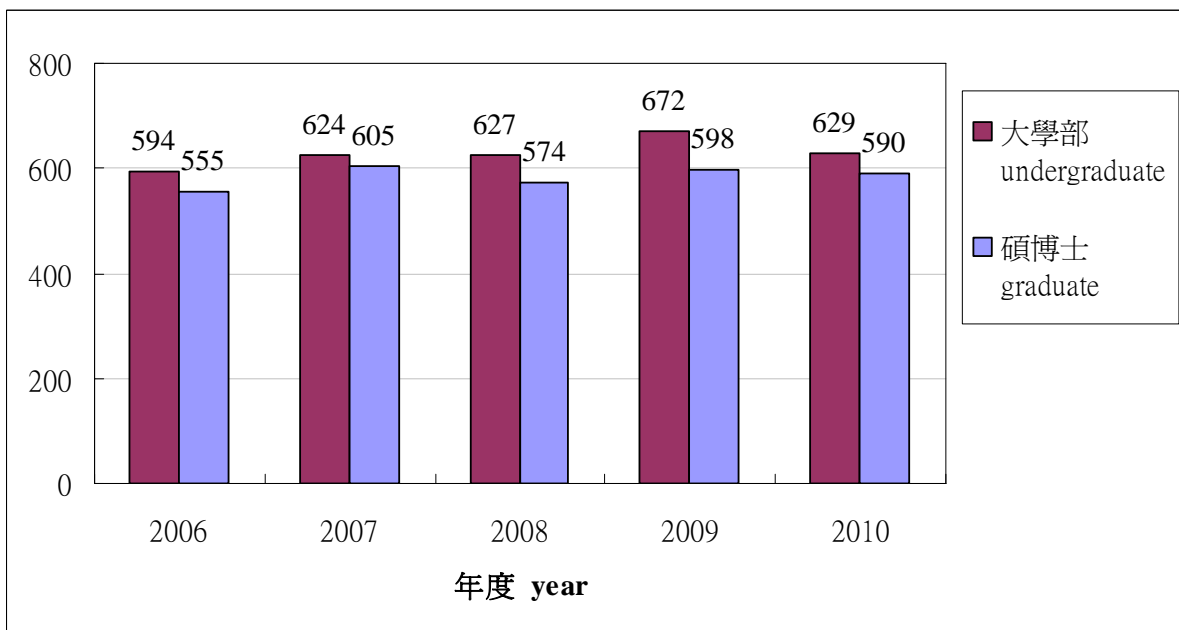
歷年授予學位人數統計

Degrees granted during 2006~2010



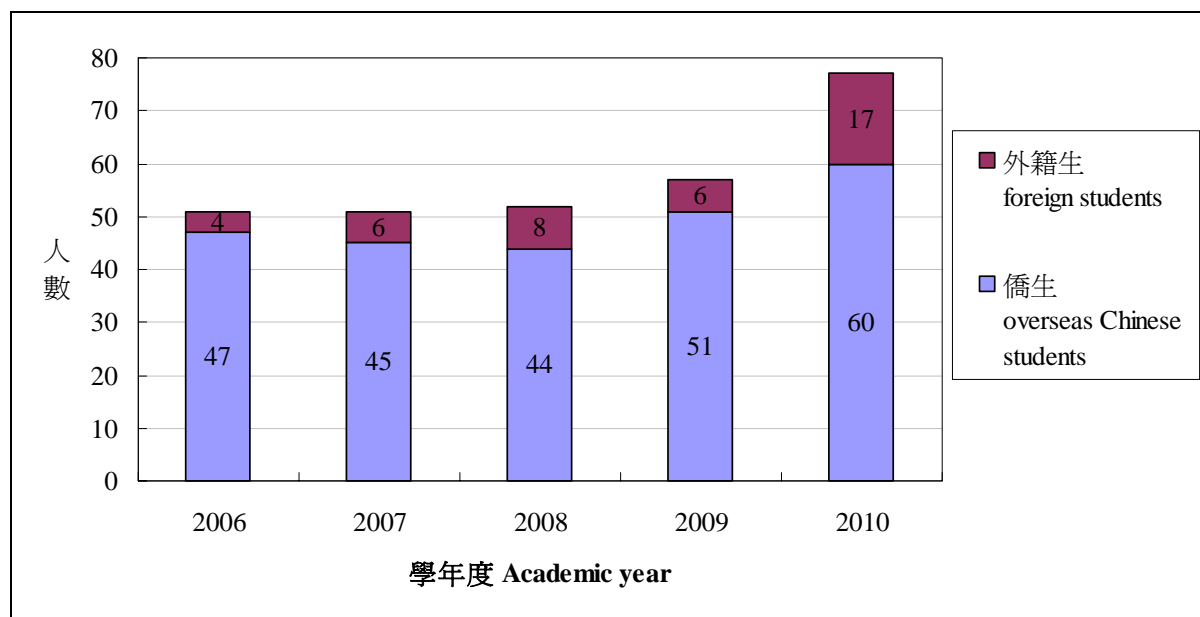
歷年學生人數統計

Students enrolled during 2006~2010



歷年招收外籍學生人數統計

Foreign Students admitted during 2006~2010



台大機械系近五年師生比情形

Student-to-Professor Ratios during 2006~2010

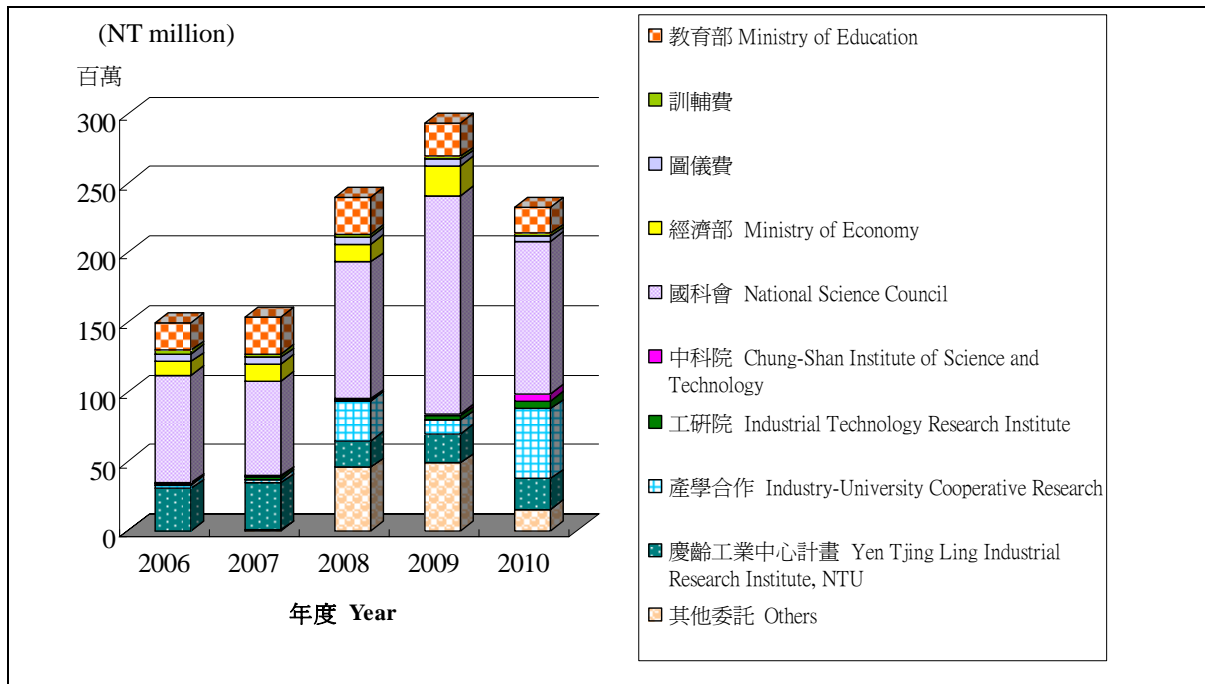
學年度 Academic year		2006	2007	2008	2009	2010
專任教師人數 Professors		56	56	55	51	53
學生 人數 students	大學部 undergraduate	594	624	627	672	629
	碩士班 MS graduate	362	395	389	405	397
	博士班 Ph.D. graduate	193	210	185	193	193
生師比 (生/師) student-to-professor ratio	未加權 unweighted	20.51	21.94	21.84	24.90	23
	加權(註) weighted*	33.87	36.5	35.64	40.41	37.77

註：計算加權師生比時，大學部學生為1單位，碩士班學生為2單位，博士班學生為3單位

* : undergraduate students, MS graduate students, and Ph.D. graduate students weighted by one, two, and three respectively

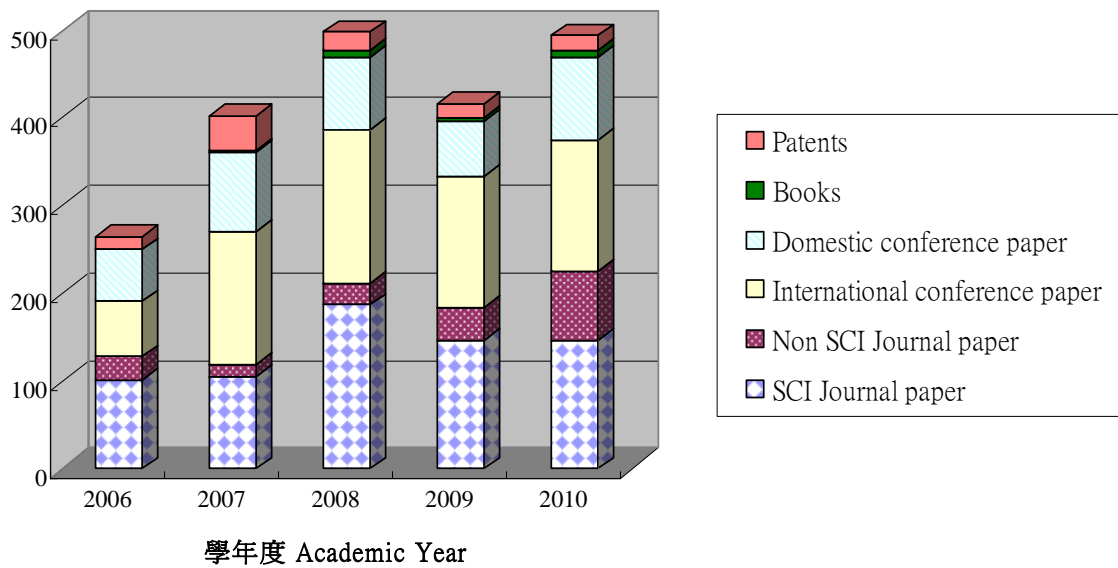
台大機械系 2006~2010 年度經費

Financial Support for Research Projects during 2006~2010



教師著作統計

Publications



年度	組別	研究計畫報告	SCI 論文	非 SCI 論文	學術期刊論文總額	國內研討會論文	國外研討會論文	研討會論文總額	專書	專利
2006	固力	19	24	5	29	24	23	47	1	3
2006	控制	24	10	2	12	12	30	42	1	3
2006	設計	15	16	3	19	14	16	30	3	6
2006	製造	31	38	27	65	38	27	65	0	12
2006	熱流	24	28	8	36	19	32	51	1	6
2006	全系	113	116	45	161	107	128	235	6	30
2007	固力	23	33	8	41	21	30	51	4	2
2007	控制	14	18	9	27	16	37	53	0	15
2007	設計	20	10	6	16	11	21	32	1	9
2007	製造	31	33	24	57	32	58	90	0	5
2007	熱流	23	24	5	29	25	28	53	3	12
2007	全系	111	118	52	170	105	174	279	8	43
2008	固力	17	23	9	32	12	26	38	0	1
2008	控制	14	20	5	25	16	38	54	4	4
2008	設計	5	13	2	15	16	13	29	0	1
2008	製造	32	41	32	73	30	48	78	0	8
2008	熱流	24	41	2	43	21	40	61	4	11
2008	全系	92	138	50	188	95	165	260	8	25
2009	固力	16	18	9	27	6	14	20	0	0
2009	控制	17	25	4	29	11	46	57	1	4
2009	設計	5	13	8	21	13	22	35	3	4
2009	製造	20	29	21	50	21	35	56	0	0
2009	熱流	16	48	11	59	19	38	57	0	1

年度	組別	研究計畫報告	SCI 論文	非 SCI 論文	學術期刊論文總額	國內研討會論文	國外研討會論文	研討會論文總額	專書	專利
2009	全系	74	133	53	186	70	155	225	4	9
2010	固力	16	36	13	49	10	22	32	3	0
2010	控制	22	8	19	27	29	28	57	3	9
2010	設計	6	9	10	19	6	32	38	0	1
2010	製造	14	38	28	66	24	32	56	0	0
2010	熱流	17	55	10	65	25	35	60	2	7
2010	全系	75	146	80	226	94	149	243	8	17

參、教師簡歷及著作目錄

Resumes and Publications of Professors

一、固體力學組 **Solid Mechanics Group**

周元昉

Yuan-Fang Chou

教授

Professor

成功大學，土木工程學士

B.S. in Civil Engineering, National
Cheng Kung University

臺灣大學，結構工程碩士

M.S. in Structural Engineering, National
Taiwan University

普渡大學，航太工程博士

Ph.D. in Aerospace Engineering, Purdue
University

研究專長 (Specialty) :

固體力學、振動學、系統識別、微機電系統

Solid Mechanics, Vibrations, System Identification, Micro Electromechanical
Systems

期刊論文 (Journal Papers) :

1. Tien-Chen Liu, Chia-Fone Lee, Chih-Hua Shih and Yuan-Fang Chou, 2010, "Developing a Non-Surgical Direct Drive Hearing Device with an Opto-Electromagnetic Actuator Attached to the Tympanic Membrane: Preliminary Report," *Hearing Research*, Vol. 263, Issues 1-2, pp. 249-250, May 2010, MEMRO 2009: Middle-Ear Science and Technology.
2. Lee, CF; Li, GJ; Wan, SY; Lee, WJ; Tzen, KY; Chen, CH; Song, YL; Chou, YF; Chen, YS; Liu, TC, 2010, "Registration of Micro-Computed Tomography and Histological Images of the Guinea Pig Cochlea to Construct an Ear Model Using an Iterative Closest Point Algorithm," *Annals of Biomedical Engineering*, Vol. 38, No. 5, pp. 1719-1727, May 2010.
3. Chia-Fone Lee, Peir-Rong Chen, Wen-Jeng Lee, Yuan-Fang Chou, Jyh-Horng Chen, Tien-Chen Liu, "Computer Aided Modeling of Human Mastoid Cavity Biomechanics Using Finite Element Analysis", *EURASIP Journal on Advances in Signal Processing*, Volume 2010, Article ID 203037, 9 pages, 2009. USA. (SCI, 1.055, 115/229)
4. Chia-Fone Lee, Chih-Hua Shih, Jen-Fang Yu, Jyh-Horng Chen, Yuan-Fang Chou, and Tien-Chen Liu, 2008, "A Novel Opto-Electromagnetic Actuator Coupled to The Tympanic Membrane," *Journal of Biomechanics*, Vol. 41, No. 16, pp. 3515-3518, England. (SCI, 2.897, 6/44)
5. Liang-Chieh Wu and Yuan-Fang Chou, 2008, "On-Wafer Characterization of Thermomechanical Properties for Isotropic Thin Films Deposited on Anisotropic Substrates," *Japanese Journal of Applied Physics*, Vol. 47, No. 7, pp. 5623-5629, Japan. (SCI, 1.247,

50/94)

6. Jen-San Chen, Jeng-Yu Chen, and Yuan-Fang Chou, 2008, "On the Natural Frequencies and Mode Shapes of Dragonfly Wings," *Journal of Sound and Vibration*, Vol. 313, Issues 3-5, pp. 643–654, England. (SCI, 1.024, 11/28)
7. Chia-Fone Lee, Jyh-Horng Chen, Yuan-Fang Chou, Lee-ping Hsu, Peir-Rong Chen, Tien-Chen Liu, 2007, "Optimal Graft Thickness for Different Sizes of Tympanic Membrane Perforation in Cartilage Myringoplasty: A Finite Element Analysis," *Laryngoscope*, No. 117, pp. 725-730, USA. (SCI, 1.617, 6/30)
8. Lee, C.-F., Hsu, L.-P., Chen, P.-R., Chou, Y.-F., Chen, J.-H., and Liu, T.-C., 2006, "Biomechanical Modeling and Design Optimization of Cartilage Myringoplasty Using Finite Element Analysis, *Audiology and Neurotology*," Vol. 11, No. 6, pp. 380-388, Switzerland. (SCI, 2.108, 5/30) (Top five best papers of the year)
9. Shirley C. Tsai, Yu L. Song, Chen S. Tsai, Yuan F. Chou, and Jih H. Cheng, 2006, "Ultrasonic Atomization Using MHZ Silicon-Based Multiple-Fourier Horn Nozzles," *Applied Physics Letters*, Vol. 88, Issue 1, 014102, USA. (SCI, 4.127, 6/84)

國際會議論文 (International Conference Papers) :

1. Chia-Fone Lee, Peir-Rong Chen, Wen-Jeng Lee, Yuan-Fang Chou, Jyh-Horng Chen, and Tien-Chen Liu, 2009, "Computer Aided Modeling of Human Mastoid Cavity Biomechanics Using Finite Element Analysis," *EURASIP Journal on Advances in Signal Processing*, Volume 2010, Article ID 203037, USA.
2. Chien-Hsun Lai, Yuan-Fang Chou, 2009, "Surface Acoustic Waves in Piezoelectric Half Space with Periodic Surface Electrodes", *Proceedings of IMECE2009*, ASME paper No. IMECE2009-12127, Nov. 13-19, 2009, Lake Buena Vista, Florida, USA.
3. Chien-Hou Liu and Yuan-Fang Chou, 2008, "Attenuation Coefficients Prediction for Reflection Layers of Solidly Mounted Resonators via Phononic Band Structures," *Proceedings of IMECE2008*, ASME paper No. IMECE2008-67282, Oct. 31-Nov. 6, 2008, Boston, Massachusetts, USA.
4. Shirley C Tsai, Yu L Song, Chih H Cheng, Ning Wang, Rong W Mao, Yuan F Chou, Chin T Lee, and Chen Tsai, 2008, "Production of Monodisperse Micron-Size Droplets Using Silicon-Based MHz Ultrasonic Nozzles for Biomedical Applications," *ASME Biomed08 - 3rd Frontiers in Biomedical Devices Conference and Exhibition*, June 18-20, 2008, Irvine, California, USA.
5. Y. L. Song, Chih H. Cheng, Ning Wang, Shirley C. Tsai, Yuan F. Chou, Ching T. Lee, and Chen S. Tsai, 2007, "Mems-Based MHZ Silicon Ultrasonic Nozzles for Production of Monodisperse Drops, *Microelectromechanical Systems--Materials and Devices*," *MRS Proceedings*, Vol. 1052, Nov. 26 - 30, 2007, Boston, MA, USA.
6. Yuan-Fang Chou and Ming-Yi Yang, 2007, "Energy Conversion in Piezoelectric Superlattices, Behavior and Mechanics of Multifunctional and Composite Materials 2007," *Proceedings of SPIE*, Vol. 6526, March. 18-22, 2007, San Diego, California, USA.

7. Yuan-Fang Chou and Ming-Yi Yang, 2006, "Polaritons in a Piezoelectric Superlattice Plate," Proceedings of IMECE2006, ASME paper IMECE2006-14511, Nov. 5-10, 2006, Chicago, Illinois, USA.
8. C. F. Lee, L. P. Hsu, P. R. Chen, Y. F. Chou, J. H. Chen, T. C. Liu, 2006, "Biomechanical Modeling and Design Optimization of Cartilage Myringoplasty Using Finite Element Analysis," 4th International Symposium on Middle Ear Mechanics in Research and Otology, July 27-30, Zurich.

國內會議論文 (Domestic Conference Papers) :

1. Chien-Hao Liu, Yuan-Fang Chou, 2009, "Effect of Film Thickness Deviation on the Performance of Solidly Mounted Resonators", 第 13 屆奈米工程暨微系統技術研討會論文集, 新竹.
2. 周元昉, 陽明益, 許志維, 95, 聲光一體的壓電超晶格平板, 第十屆奈米工程暨微系統技術研討會論文集, 論文編號:3d-1, 竹東.
3. 程啟豪, 周元昉, 趙健祥, 93, Galvanic 電化學蝕刻停止法製作微懸臂樑, 中國機械工程學會第二十一屆全國學術研討會論文集, E0101320, 高雄.

專利 (Patents) :

1. 周元昉、賴建勳, "類比分頻矯正式助聽器", 中華民國發明專利(專利號碼: I315159)
2. 周元昉、龔哲民, "電磁力式噴液列印技術," 中華民國發明專利(專利號碼: 177499)
3. 周元昉、賴建勳, "即時頻譜分析儀," 中華民國發明專利(專利號碼: 187280)
4. 劉殿楨、周元昉、賴建勳、李家鳳, "分離式助聽器," 中華民國發明專利(專利號碼: I250808)
5. 周元昉、胡克龍、田慶誠、許志維、陽明益, "極化可控制結構及具有該結構之可調式濾波裝置," 中華民國發明專利(專利號碼: I256746)

研究計畫 (Research Projects) :

1. 壓電超晶格極子的能量組成與電磁幅射, 主持人, 計畫期間: 08/08/01~09/07/31, 委任單位: 國科會。
(The Energy Constituents and Electromagnetic Radiation of Polaritons in Piezoelectric Superlattice)
2. 壓電超晶格極子之能量分佈, 主持人, 計畫期間: 07/08/01~08/07/31, 委任單位: 國科會。
(The Energy Distribution of Polariton in Piezoelectric Superlattice)
3. 高頻矽基超音波噴嘴及其應用之研究(2/2), 主持人, 計畫期間: 06/08/01~07/07/31, 委任單位: 國科會。
(Silicon-Based MHz Ultrasonic Nozzles and Applications, 2/2)
4. 平面極化式壓電超晶格的極子特性研究(2/2), 主持人, 計畫期間: 06/08/01~07/07/31, 委任單位: 國科會。

(Polariton Characteristics in Planar Polarized Piezoelectric Superlattices , 2/2)

5. 表面聲波式觸控面板之換能器阻抗計算與匹配，主持人，計畫期間：06/04/01~06/11/30，委任單位：工研院。

(Impedance Calculation and Matching of the Transducers for SAW Touch Panels)

6. 高頻矽基超音波噴嘴及其應用之研究(1/2)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

(Silicon-Based MHz Ultrasonic Nozzles and Applications , 1/2)

7. 平面極化式壓電超晶格的極子特性研究(1/2)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

(Polariton Characteristics in Planar Polarized Piezoelectric Superlattices , 1/2)

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27. 馬劍清，黃采如，2006 年，“氧化鋅/鈦酸鋰表面聲波元件的溫度與光電效應分析”，中國機械工程學會第二十三屆學術研討會，昆山科技大學。
28. 莊國志，馬劍清，2006 年，“應用光纖光柵動態量測系統探討懸臂板之暫態反應”，中華民國航空太空學會第四十八屆年會暨學術研討會/國科會航太學門專題研究計畫成果發表會，國立中央大學。

得獎紀錄 (Honors)：

1. 臺大終身特聘教授
2. 美國機械工程學會會士(ASME Fellow)
3. 中華民國機械工程學會會士(Fellow)
4. 中華民國力學學會會士(Fellow)
5. 九十八年度中華民國力學學會『孫芳鐸教授力學獎章』得主
6. 國科會第一級主持人(民國 95—96 年)
7. 九十五年度臺大工學院宗卓章先生獎座
8. 九十四年度臺大工學院宗卓章先生獎座
9. 中國工程師學會九十三年度傑出工程教授獎
10. 中國機械工程學會九十三年度服務貢獻獎
11. 中國機械工程學會九十二年度傑出工程教授獎
12. 國科會特約研究員
11. 國科傑出研究獎三次

研究計畫 (Research Projects)：

1. 電致動高分子整合於微機電於微流體與主動光學之應用(2/2)，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。
Integration of electro-active-polymers in MEMS for micro-fluidic and active optics applications (2/2), PI; Project period: 09/08/01~10/07/31, Organization: National Science Council.
2. 電致動高分子整合於微機電於微流體與主動光學之應用(1/2)，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
Integration of electro-active-polymers in MEMS for micro-fluidic and active optics

- applications (1/2), PI; Project period: 08/08/01~09/07/31, Organization: National Science Council.
3. 寬頻多點式表面聲波感測器之研發(3/3)，主持人，計畫期間：10/08/01~11/07/31，委任單位：國科會。
The Development of Broad Band Multiple Chanel Surface Acoustic Wave Photodetector (3/3), PI; Project period: 10/08/01~11/07/31, Organization: National Science Council.
 4. 寬頻多點式表面聲波感測器之研發(2/3)，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。
The Development of Broad Band Multiple Chanel Surface Acoustic Wave Photodetector (2/3), PI; Project period: 09/08/01~10/07/31, Organization: National Science Council.
 5. 寬頻多點式表面聲波感測器之研發(1/3)，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
The Development of Broad Band Multiple Chanel Surface Acoustic Wave Photodetector (3/3), PI; Project period: 08/08/01~09/07/31, Organization: National Science Council.
 6. 應用光纖光柵感測器於三維動態波傳量測的研究(3/3), 主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。
Dynamic Three-Dimensional Measurements of Transient Wave Propagation Using Grating-based Fiber Sensor (3/3), PI; Project period: 09/08/01~10/07/31, Organization: National Science Council.
 7. 應用光纖光柵感測器於三維動態波傳量測的研究 (2/3)，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
Dynamic Three-Dimensional Measurements of Transient Wave Propagation Using Grating-based Fiber Sensor (2/3), PI; Project period: 08/08/01~09/07/31, Organization: National Science Council.
 8. 應用光纖光柵感測器於三維動態波傳量測的研究(1/3), 主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
Dynamic Three-Dimensional Measurements of Transient Wave Propagation Using Grating-Based Fiber Sensor (1/3), PI; Project period: 07/08/01~08/07/31, Organization: National Science Council.
 9. 壓電陶瓷材料高頻面內振動之動態特性及溫度效應研究(2/2)，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
The Dynamic Characteristic and Temperature Effect of Inplane Vibration of Piezoceramic Materials (2/2), PI; Project period: 07/08/01~08/7/31, Organization: National Science Council.
 10. 前瞻性與產學合作研究計畫/工學院/多層壓電材料系統的動態特性研究，主持人，計畫期間：07/06/01~08/12/31，委任單位：邁向頂尖大學計畫。
The Dynamic Characteristics of Multilayered Piezoelectric Systems, PI; Project period: 07/06/01~08/12/31, Organization: National Taiwan University.
 11. 人工肌肉在生物醫學的應用 — 人工括約肌於尿失禁的治療(3/3)，主持人，計畫期間：07/11/01~08/10/31，委任單位：國科會。
Application of Artificial Muscle in Biomedicine-Artificial Sphincter for Urinary Incontinence

- (3/3), PI; Project period: 07/11/01~08/10/31, Organization: National Science Council .
12. 人工肌肉在生物醫學的應用 — 人工括約肌於尿失禁的治療(2/3), 主持人, 計畫期間: 06/11/01~07/10/31, 委任單位: 國科會。
Application of Artificial Muscle in Biomedicine-Artificial Sphincter for Urinary Incontinence (2/3), PI; Project period: 06/11/01~07/10/31, Organization: National Science Council .
13. 壓電陶瓷材料高頻面內振動之動態特性及溫度效應研究(1/2), 主持人, 計畫期間: 06/08/01~07/07/31, 委任單位: 國科會。
The Dynamic Characteristic and Temperature Effect of Inplane Vibration of Piezoceramic Materials (1/2), PI; Project period: 06/08/01~07/7/31, Organization: National Science Council.
14. 壓電材料在液體中的動態特性研究與實驗量測(2/2), 主持人, 計畫期間: 06/08/01~07/07/31, 委任單位: 國科會。
The Theoretical Investigation and Experimental Measurements of the Dynamic Characteristics for Piezoelectric Materials in Fluid (2/2), PI; Project period: 06/08/01~07/07/31, Organization: National Science Council.
15. 光纖光柵在輻射環境之應用研究, 主持人, 計畫期間: 06/01/01~06/12/31, 委任單位: 國科會。
The Application of Fiber Grating Sensor under Radioactive Environment, PI; Project period: 06/01/01~06/12/31, Organization: National Science Council.
16. 人工肌肉在生物醫學的應用 — 人工括約肌於尿失禁的治療(1/3), 主持人, 計畫期間: 05/11/01~06/10/31, 委任單位: 國科會。
Application of Artificial Muscle in Biomedicine-artificial Sphincter for Urinary Incontinence (1/3), PI; Project period: 05/11/01~06/10/31, Organization: National Science Council.
17. 壓電材料在液體中的動態特性研究與實驗量測(1/2), 主持人, 計畫期間: 05/08/01~06/07/31, 委任單位: 國科會。
The Theoretical Investigation and Experimental Measurements of the Dynamic Characteristics for Piezoelectric Materials in Fluid (1/2), PI; Project period: 05/08/01~06/07/31, Organization: National Science Council.
18. 光纖光柵的動態特性研究與實驗量測(2/2), 主持人, 計畫期間: 05/08/01~06/07/31, 委任單位: 國科會。
The Investigation of the Dynamic Characteristics for Grating-Based Fiber and Experimental Measurements (2/2), PI; Project period: 05/08/01~06/07/31, Organization: National Science Council..

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教授	Professor
臺灣大學, 土木工程學士, 1977	B.S. in Civil Engineering, National Taiwan University, 1977
伊利諾大學, 航空太空工程碩士, 1983	M.S. in Aeronautical and Astronautical Engineering, University of Illinois at Urbana-Champaign, 1983
伊利諾大學, 航空太空工程博士, 1985	Ph.D. in Aeronautical and Astronautical Engineering, University of Illinois at Urbana-Champaign, 1985

研究專長 (Specialty) :

固體力學、隨機振動、結構完整性評估、可靠度工程、風險評估與管理

Solid Mechanics, Random Vibration, Structural Integrity Assessment, Reliability Engineering, Risk Assessment and Management

期刊論文 (Journal Papers) :

1. Lin, J.G., Hsu, D., Wu, W.F., Chang, C.P. and Chen, C.H., 2010, "Development of Random Access Memory in Nd_{0.7}Ca_{0.3}MnO₃/YBa₂Cu₃O₇ Heterostructure," Thin Solid Films, Vol. 518, Issue 20, pp. 5673-5675. (EI, SCI)
2. Cheng, C.M., Hsu, Y. and Wu, W.F., 2010, "Efficient Design on Body Strength and Capacitance of MLCC," Advanced Materials Research, Vols. 156-157, pp. 724-731. (EI)
3. Cheng, C.M., Wu, W.F. and Hsu, Y., 2010, "A Systematized FMEA Practice for Magnet Relays," Advanced Materials Research, Vols. 146-147, pp. 757-769. (EI)
4. Hsu, D., Chen, Y. S., Song, M. Y., Chuang, C. H., Lin, M. T., Wu, W. F. and Lin, J. G., 2010, "Investigation of Jahn-Teller Splitting with O 1s X-ray Absorption Spectroscopy in Strained Nd_{1-x}Ca_xMnO₃ Thin Films," Applied Physics Letters, Vol. 96, Issue 4, 041914. (EI, SCI)
5. Kuo, H.T., Wei, R.C., Wu, W.F. and Yang, J.R., "Simulated Heat Affected Zone in ASTM A533-B Steel Plates under Low Heat Inputs," Materials Chemistry and Physics, Vol. 117, No. 2-3, pp. 471-477, October 2009.
6. Hsu, D., Lin, J.G., Chang, C.P., Chen, C.H., Chiang, C.H., Chan, W.C. and Wu, W.F., 2008, "Thickness Dependent Spin-Injection Effects in Nd_{0.7}Ca_{0.3}MnO₃/YBa₂Cu₃O₇ Bilayers,"

- Journal of Applied Physics, Vol. 103, Issue 3, 07C710-1; also selected in Virtual Journal of Applications of Superconductivity, February 15, 2008. (EI, SCI)
7. Huang, Y.L., Shiu, H.R., Chang, S.H., Wu, W.F. and Chen, S.L., 2008, "Comparison of Combustion Models in Clean-room Fire," Journal of Mechanics, Vol. 24, Vol. 3, pp. 267-275. (EI, SCI)
 8. Wu, W. F. and Ni, C. C., 2007, "Statistical Aspects of Some Fatigue Crack Growth Data," Engineering Fracture Mechanics, Vol. 74, Issue 18, pp. 2952-2963. (EI, SCI)
 9. Hsu, D., Lin, J.G. and Wu, W.F., 2007, "Magnetic Pinning-Effect in Nd_{0.7}Ca_{0.3}MnO₃/YBa₂Cu₃O₇ Bilayer," Physica Status Solidi (A), Vol. 204, No. 12, pp. 4170-4173. (EI, SCI)
 10. 張紘睿、吳文方、朱時梁、蕭祝鑫，2007，「非破壞檢測可靠度模型之適合度探討」，先進工程學刊，第二期，第 83-87 頁。
 11. Hsu, D., Lin, J.G., Wu, W.F., Wu, C.T. and Chen, C.H., 2007, "Voltage-Current Hysteretic Characteristics in ME/Nd_{0.7}Ca_{0.3}MnO₃ Thin Films with ME = Au, Pt, Ag, Cu," IEEE Transactions on Magnetics, Vol. 43, Issue 6, pp. 3067-3069. (EI, SCI)
 12. Lin, J.G., Hsu, D., Wu, W.F., Chiang, C.H. and Chan, W.C., 2007, "Proximity Effect of Superconductivity and Ferromagnetism in the Nd_{0.7}Ca_{0.3}MnO₃/YBa₂Cu₃O₇ Bilayer," Journal of Applied Physics, Vol. 101, Issue 9, 09G106-1. (EI, SCI)
 13. Hsu, D., Lin, J.G. and Wu, W.F., 2007, "Resistive Switching Effects in Nd_{0.7}Ca_{0.3}MnO₃ Magnite," Journal of Magnetism and Magnetic Materials, Vol. 310, Issue 2, pp. 978-980 (EI, SCI)
 14. Hsieh, K. C., Ting, K., Chen, K. T., Wu, W. F. and Lu, Y. L., 2007, "The Application of Risk-Informed Inservice Inspection to Recirculation Piping Welds of a Nuclear Power Plant," Solid State Phenomena, Vol. 120, pp. 213-219. (SCI)
 15. Hsu, D., Lin, J.G., Wu, W.F., Chiang, C.H. and Chan, W.C., 2007, "Current Enhanced Magnetic Proximity in Nd_{0.7}Ca_{0.3}MnO₃/YBa₂Cu₃O₇ Bilayer," Applied Physics Letters, Vol. 90, Issue 16, 162504. (EI, SCI)
 16. Wu, W. F., You, J. S., Kuo, H. T. and Wu, C. H., 2007, "Degradation Analysis and Risk-Informed Management of Feedwater System in Nuclear Power Plants," International Journal of Performability Engineering, Vol. 3, No. 1, pp. 149-168.
 17. Hsu, D., Lin, J.G. and Wu, W.F., 2006, "Low-Current-Induced Electrical Hysteresis in Nd_{0.7}Ca_{0.3}MnO₃," Applied Physics Letters, Vol. 88, Issue 22, 222507. (EI, SCI)
 18. Fan, Y. T. and Wu, W. F., 2006, "Stability Analysis of Railway Vehicles and Its Verification through Field Test Data," Journal of the Chinese Institute of Engineers, Vol. 29, No. 3, pp. 493-505. (Supported by NSC 94-2212-E-002-025). (EI, SCI)
 19. Hsu, D., Lin, J.G. and Wu, W.F., 2006, "Electron Spin Resonance Studies on La_{0.7-x}Dy_xSr_{0.3}MnO₃," Journal of Magnetism and Magnetic Materials, Vol. 304, Issue 1, pp. e427-e429. (EI, SCI)
 20. Fan, Y. T. and Wu, W. F., 2006, "Stability Analysis and Derailment Evaluation of Rail Vehicles," International Journal of Heavy Vehicle Systems, Vol. 13, No. 3, pp. 194-211. (EI, SCI)

21. You, J. S., Kuo, H. T. and Wu, W. F., 2006 “Case Studies of Risk-Informed Inservice Inspection of Nuclear Piping Systems,” Nuclear Engineering and Design, Vol. 236, No. 1, pp. 35-46. (Supported by NSC 92-NU-7-002-001). (EI, SCI)
22. Fan, Y. T. and Wu, W. F., 2006, “Dynamic Analysis and Ride Quality Evaluation of Railway Vehicles - Numerical Simulation and Field Test Verification,” Journal of Mechanics, Vol. 22, No. 1, pp. 1-11. (Supported by NSC 94-2212-E-002-025). (EI, SCI)

國際會議論文 (International Conference Papers) :

1. Hsu, Y., Wu, W.F. and Su, C.Y., 2010, “Variability of Impact Life and Reliability Assessment of Electronic Packages,” Proceedings of the 12th Electronics Packaging Technology Conference (EPTC 2010), Singapore.
2. Hsu, Y., Wu, W.F., Tsai, T.Y. and Su, C.Y., 2010, “Drop Impact Life Prediction and Reliability Assessment of Electronic Packages,” Proceedings of IV European Conference on Computational Mechanics (ECCM 2010, Palais des Congrès, in CD format), Paris, France.
3. Wu, W. F., Cheng, Y. L., You, J. S. and Huang, C. C., “Probabilistic Fracture Mechanics Analysis of Recirculation Piping Welds of a Nuclear Power Plant,” Proceedings of the International Conference on Computational & Experimental Engineering and Sciences (ICCES’09), in CD format, 2009
4. Wu, W. F., Chiang, A.T. and Hu, T.L., 2008, “Effects of Brand Image and Price Discount on Consumers’ Perceived Risks with Moderation of Product Involvement,” Proceedings of the 9th International Probabilistic Safety Assessment and Management Conference (in CD format), Hong Kong.
5. Wu, W. F., You, J. S., Wei, C. H. and Chu, H. C., 2008, “Probabilistic Risk Analysis of Reactor Pressure Vessels,” Proceedings of the 9th International Probabilistic Safety Assessment and Management Conference (in CD format), Hong Kong.
6. Wu, W.F., Fan, Y.T. and Chen, S.L., 2008, “Dynamic Analysis of Rail Vehicles and Investigation of Potential Derailment Caused by Wheel flats,” Proceedings of the 22nd International Congress of Theoretical and Applied Mechanics (ICTAM 2008, in CD format), Adelaide, Australia.
7. Wu, W.F., Hsu, T.K., Su, C.Y., Chen, Y.C. and Hsu, Y., 2008, “Effect of Parametric Randomness on Reliability Analysis of Wafer-Level Chip-Scale Packages,” Proceedings of the 3rd IMPACT (International Microsystems, Packaging, Assembly and Circuits Technology Conference) and 10th EMAP (International Conference on Electronics Materials and Packaging) Joint Conference (also in CD format), pp. 649-652, Taipei, Taiwan.
8. Hsu, Y., Kong, W.K., Su, C.Y., Wu, W.F. and Liu, M.W., 2008, “Vibration Induced Fatigue Reliability of BGA Packages,” Proceedings of the 3rd IMPACT (International Microsystems, Packaging, Assembly and Circuits Technology Conference) and 10th EMAP (International Conference on Electronics Materials and Packaging) Joint Conference (also in CD format), pp. 657-660, Taipei, Taiwan.
9. Wu, W.F., Huang, S.Y., You, J.S. and Hsu, Y., 2008, “Design Improvement through Reliability

Analysis of Belt-Type CVT Systems for Scooters,” Proceedings of the 3rd Asian International Workshop on Advanced Reliability Modelling (AIWARM 2008), pp. 463-470, Taichung, Taiwan.

10. Wu, W. F. and Hung, C.J., 2007, “Dynamic Analysis and Safety Evaluation of Rail Trains Subjected to a Suddenly Occurred Earthquake,” Proceedings of the 4th Japan-Taiwan Workshop on Mechanical and Aerospace Engineering, pp. 168-181, Hakone, Kanagawa, Japan.
11. Hsu, D., Lin, J.G., Wu, W.F., 2007, “Magnetic Pinning-Effect in $\text{YBa}_2\text{Cu}_3\text{O}_7/\text{Nd}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ Bilayer,” presented at ISAMMA, Jeju Island, Korea.
12. Hsu, D., Lin, J.G., Wu, W.F., Wu, C.T. and Chen, C.H., 2007, “Voltage-Current Hysteristics in $\text{ME}/\text{Nd}_{0.7}\text{Ca}_{0.3}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_7$ Thin Films with $\text{ME} = \text{Au, Pt, Ag, Cu}$,” presented at MMM 2007.
13. Lin, J.G., Hsu, D., Wu, W.F., Chiang, C.H. and Chan, W.C., 2007, “Proximity Effect of Superconductivity and Ferromagnetism in the $\text{Nd}_{0.7}\text{Ca}_{0.3}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_7$ Bilayer,” presented at MMM 2007.
14. Chang, Y.W., Cheng, C.H., Wu, W.F. and Chen, S.L., 2007, “An Experimental Investigation of Thermoelectric Cooling Module,” Proceedings of the 4th International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics (FMHT'07), Prague, Czech Republic.
15. Wu, W. F. and Tsai, K.J., 2007, “Effect of Parametric Randomness on the Reliability Analysis of Electronic Packages,” Proceedings of the 7th International Congress on Thermal Stresses, pp. 131-134, Taipei, Taiwan.
16. Wu, W. F. and Lu, C.C., 2007, “A Fatigue Crack Growth Simulation Algorithm in Consideration of Parametric Variability,” SAE Technical Paper 2007-01-1654, presented at 2007 SAE World Congress, collected in Reliability and Robust Design in Automotive Engineering 2007, Detroit, USA.
17. Hsu, D, Lin, J. G. and Wu, W. F., 2006, “Resistive Switching Effects in $\text{Nd}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ Magnate,” Presented at the 17th International Conference on Magnetism (ICM), Kyoto, Japan.
18. Wu, W. F., You, J. S., Wu, C. H., Kuo, H. T. and Kang, L. C., 2006, “Probabilistic Safety Assessment of Feedwater Heaters and Risk-Informed Management of Feedwater Systems,” Proceedings of the 6th Asian International Symposium on Structural Integrity of Nuclear Components, pp. 48-57, Kenting, Taiwan. (invited)
19. Wu, W. F., Fu, T. T. and Yang, J. H., 2006, “Study of Fatigue Damage Accumulation and Fatigue Reliability Based on Rotating Bending Test Data,” SAE Technical Paper 2006-01-1334, presented at 2006 SAE World Congress, collected in Reliability and Robust Design in Automotive Engineering 2006, Detroit, USA.

國內會議論文 (Domestic Conference Papers) :

1. Chang, Y.J., Ji, B.Y., Wu, W.F. and Chang, Y.C., 2010, “Life Cycle Assessment and Multi-Criteria Analysis of Wind-Power and Solar Energy in Taiwan,” Proceedings of 2010 Taiwan Wind Energy Conference (in CD Format), Penghu, Taiwan.

2. 蘇柏瑜、徐堯、張詠昌、吳文方、許志敏，2010，「應用隨機疲勞裂縫成長模型探討飛機蒙皮多部位損傷行為」，2010中華民國航太學會學術研討會論文集光碟片，台灣桃園。
3. 王盈傑、康翔閔、吳文方、楊宏智、徐堯，2010，「飛機上電纜線支撐架之可靠度研究」，中國機械工程學會第二十七屆全國學術研討會論文集光碟片，台灣台北。
4. 鄭宇良、鄭敬恆、吳文方、游章雄、徐堯，2010，「核能電廠再循環管路之老化與可靠度評估」，中華民國力學學會第三十四屆全國力學會議論文集光碟片，台灣雲林。
5. 劉耀琦、魏宏霖、吳文方、游章雄、徐堯，2010，「核能電廠管路之預覆焊影響評估」，中華民國力學學會第三十四屆全國力學會議論文集光碟片，台灣雲林。
6. 胡昌隆、徐堯、吳文方，2009，「銲接結構殘留應力之有限元素分析」，第二十一屆中國造船暨輪機工程研討會論文集光碟，台灣高雄。
7. 徐堯、劉明偉、陳耀鍾、吳文方，2009，「電子連接器之失效分析與可靠度預估」，中華民國第三十三屆全國力學會議論文集光碟片，台灣苗栗。
8. 徐堯、陳耀鍾、劉明偉、吳文方，2009，「電子元件之可靠度評估—以通訊用連接器為例」，中國機械工程學會第二十六屆全國學術研討會論文集光碟片，台灣台南。
9. 徐堯、吳文方、許登凱，2009，「電子封裝體之熱疲勞壽命變異分析與可靠度評估」，中華民國第八屆可靠度與維護度技術研討會論文集，台灣雲林。
10. 蕭嘉豪、張雅茹、徐堯、吳文方，2009，「風力發電之環境衝擊與能源、經濟效益評估—以台灣為例」，2009台灣風能學術研討會論文集光碟片，台灣台北。
11. 范揚材、吳文方，2008，「臺北捷運電聯車之防蝕工程」，第六屆海峽兩岸材料腐蝕及防護研討會論文集，台灣花蓮。
12. 徐堯、蔡宗穎、吳文方，2008，「電子封裝體掉落衝擊壽命與可靠度評估」，中國機械工程學會第二十五屆全國學術研討會論文集光碟，台灣彰化。
13. 徐堯、孔維國、吳文方，2008，「球閘陣列構裝體受振動作用下之疲勞可靠度分析」，中華民國力學學會第三十二屆全國力學會議論文集光碟，台灣嘉義。
14. 徐堯、洪嘉鴻、吳文方，2008，「汽車碟煞系統之可靠度研究」，第三屆產品可靠度與維護度實務研討會論文集，第115-123頁，台灣桃園。
15. 徐堯、劉謹源、吳文方，2008，「廢電子產品回收之模糊成本效益分析」，中國工業工程學會97年度年會暨學術研討會論文集光碟，台灣中壢。
16. 吳正榮、吳文方、徐靖淵，2007，「應用重新抽樣法探討金屬疲勞裂縫成長公式中之參數分佈」，中華民國第七屆可靠度與維護度技術研討會論文集及論文光碟，第107-114頁，台灣新竹。
17. 夏永明、孔維國、吳文方，2007，「汽車油箱之結構分析與可靠度評估」，中華民國第七屆可靠度與維護度技術研討會論文集及論文光碟，第115-124頁，台灣新竹。
18. 蔡坤儒、吳文方、韋鐘豪，2006，「加工尺寸與參數變異對覆晶構裝量化可靠度之影響」，中華民國第三十屆全國力學會議論文光碟，台灣彰化。
19. 洪介仁、吳文方、洪嘉鴻，2006，「軌道車輛行駛遇地震時之動態模擬與安全評估」，中國機械工程學會第二十二屆全國學術研討會論文光碟，台灣台南。
20. 范揚材、吳文方、何鴻翔，2006，「捷運電聯車之噪音量測與改善」，第十四屆中華民國振動與噪音工程學術研討會論文集(光碟)，台灣宜蘭。
21. 張紘睿、吳文方、邱佳君、朱時梁、蕭祝鑫，2006，「非破壞檢測可靠度模型之適合度

探討」，中華民國第十三屆非破壞檢測技術研討會暨中華民國非破壞檢測協會年度會議論文集光碟，台灣龍潭。

22. Hsu, D, Lin, J. G. and Wu, W. F., 2006, "Nonlinear Voltage-Current Properties of $\text{Nd}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$," 張貼發表於2006中華民國物理學會年會暨研究成果發表會，台北。

得獎紀錄 (Honors) :

1. (共同)指導碩士班張詠昌與康翔閔等學生以「資源回收自動分類及儲值裝置」獲得國科會跨領域創意加值推動計畫第一屆可行性評估及原型製作計畫入選獎勵，2010、2011。
2. (共同)指導博士班學生徐存獲得 Best Poster Award in the 1st International Symposium on Advanced Magnetic Materials and Applications (ISAMMA), Jeju, Korea, 2007.

研究計畫 (Research Projects) :

1. 「科學教育、科技、設計之想像力與創造」整合型計畫一子計畫二：想像力在新產品構想設計之探討及成效評估—以智能型公共回收設計為例，共同主持人，計畫期間：09/12/01~11/05/31，委託單位：國科會。
(Effect of Imagination in Conceptual Design – Using Intelligent Public Material Recycling Facility as an Example)
2. 能源管理最佳化之家用多功空調機研發(1/3)，共同主持人，計畫期間：09/10/01~10/09/30，委託單位：國科會。
(Research and Development of Domestic Multi-Functional Air Conditioners with Optimal Energy Management)
3. 不確定情況下覆晶級晶片封裝體之可靠度分析與機率設計，主持人，計畫期間：09/08/01~11/07/31，委託單位：國科會。
(Reliability Analysis and Probabilistic Design of Flip-Chip Chip Scale Packages in Consideration of Uncertainty)
4. 綠色電力能源之生命週期盤查與環境衝擊分析(II)，主持人，計畫期間：09/08/01~11/07/31，委託單位：國科會。
(Life Cycle Assessment and Environmental Impact Analysis of Clean Power Energy (II))
5. 機率破裂力學安全評估技術開發與應用，主持人，計畫期間：08/11/01~10/10/31，委託單位：核能研究所。
(Development of Probabilistic Fracture Mechanics Models in the Degradation Analysis of Welds of Reactor Pressure Vessels)
6. 液晶面板製程中玻璃基板構裝之可靠度分析，主持人，計畫期間：09/01/01~09/12/31，委託單位：宗偉章先生教育基金會。
(Reliability Analysis of COG Packages used in LCD Industry)
7. 連接器之壽命評估與可靠度分析,主持人，計畫期間：08/06/01~09/05/31，委託單位：鴻海精密工業。
(Life Evaluation and Reliability Analysis of Connectors)

8. 生命週期評估應用於永續能源與綠色科技發展決策機制之研究-綠色電力能源之生命週期盤查與環境衝擊分析(I)」, 主持人, 計畫期間: 08/08/01~09/07/31, 委託單位: 國科會。
(Life Cycle Assessment and Environmental Impact Analysis of Clean Power Energy (I))
9. 2008 年全國中學生力學競賽, 共同主持人, 計畫期間: 08/02/01~08/07/31, 委託單位: 國科會。
(2008 National Mechanics Contest for Senior-High School Students)
10. 以機械工程觀點探討電子可靠度相關問題, 主持人, 計畫期間: 07/08/01~08/07/31, 委託單位: 國科會。
(Study of Electronics Reliability from Mechanical Engineering Viewpoints)
11. 壓水式反應器壓力槽之老化評估及風險管理策略研究, 主持人, 計畫期間: 07/01/01~07/12/31, 委託單位: 國科會/原能會。
(Aging Assessment and Risk Management of Reactor Pressure Vessels in PWR Plants)
12. 國科會工程處/國研院太空中心「微衛星關鍵技術研發」專案規劃計畫, 主持人, 計畫期間: 07/01/01~07/12/31, 委託單位: 國科會。
(NSC/NSPO Special Project on Technical Development of Micro-Satellites)
13. 2007 年全國高中生力學競賽, 共同主持人, 計畫期間: 07/05/01~07/07/31, 委託單位: 國科會。
(2007 National Mechanics Contest for Senior-High School Students)
14. 軌道車輛之動態分析及實車測試驗證(2/2), 主持人, 計畫期間: 06/08/01~07/07/31, 委託單位: 國科會。
(Dynamic Analysis of Railway Vehicles and Its Verification through Full-Scale Field Tests (2/2))
15. 2006 年全國高中生力學競賽, 共同主持人, 計畫期間: 06/04/01~06/07/31, 委託單位: 國科會。
(2006 National Mechanics Contest for Senior-High School Students)
16. 車輛鐵製油箱之設計與分析, 共同主持人, 計畫期間: 05/11/01~06/10/31, 委託單位: 嚴慶齡工業發展基金會。
(Design and Analysis of a Vehicle Steel Fuel-Tank)
17. 軌道車輛之動態分析及實車測試驗證(1/2), 主持人, 計畫期間: 05/08/01~06/07/31, 委託單位: 國科會。
(Dynamic Analysis of Railway Vehicles and its Verification through Full-Scale Field Tests (1/2))

單秋成

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教授

Professor

香港大學，機械工程學士，1982

M.S. in Mechanical Engineering,
University of Hong Kong, 1982

劍橋大學，工程博士，1985

Ph.D. in Mechanical Engineering,
Cambridge University, 1985

研究專長 (Specialty) :

材料疲勞、複合材料破壞、材料破壞與破損分析、光纖感測器

Fatigue of Material, Damage of Composite Material, Failure Analysis, Optical Fiber Sensors

期刊論文 (Journal Papers) :

1. Liaw, S.K., Wang, S., Shin, C.S., Yu, Y.L., Chen, N.K., Hsu, K.C., Manshina, A., Tver'Yanovich, Y., 2010, "Linear-cavity fiber laser using subring-cavity incorporated saturable absorber for single-frequency operation", Laser Physics, Volume 20, Issue 8, August 2010, pp. 1744-1746. (SCI)
2. Liaw, S.K., Wang, S., Shin, C.S., Chen, N.K., Hsu, K.C., Manshina, A., Tver'Yanovich, Y., Su, C.-F., Wang, L.K., 2010, "Single-longitudinal-mode linear-cavity fiber laser using multiple subring-cavities", Laser Physics, Volume 20, Issue 7, July 2010, pp. 1608-1611. (SCI)
3. C. Y. Huang, C. S. Shin, Y. C. Chen, 2010, "The Rapid Brazing of Stainless Steel Wire and Low Carbon Steel Wire by Using of Ultra-high Frequency Induction Heating", J. the Taiwan Society for Metal Heat Treatment, Vol.107, Dec. pp.23-30.
4. B. L. Chen, C. S. Shin, 2010, "Fiber Bragg Gratings Array for Structural Health Monitoring", Special issue on Sensors, Actuators and Intelligent Processing, Materials and Manufacturing Process, 25:1-4, DOI:10.1080/10426910903426414. (SCI)
5. C. S. Shin, B. L. Chen, J. R. Cheng and S. K. Liaw, 2010, "Impact response of a wind turbine blade measured by distributed FBG sensors", Special issue on Sensors, Actuators and Intelligent Processing, Materials and Manufacturing Process, 25:1-4, DOI:10.1080/10426910903426448. (SCI)
6. C.S. Shin and J.C. Huang, 2010, "Effect of temper, specimen orientation and test temperature on the tensile and fatigue properties of SiC reinforced PM 6061 Al alloy", International Journal of Fatigue, doi:10.1016/j.ijfatigue.2010.02.015. (SCI)
7. Y. L. Shen and C. S. Shin, 2010, "Using a distributed brillouin fiber sensor to detect strain and cracks in steel structures", in press, Journal of Mechanics. (SCI)

8. C. S. Shin, B. L. Chen and S. K. Liaw, 2010, “An FBG based impact event logging and locating system for structural health monitoring”, Invited submission to Special Issue on “Structural Health Monitoring for Civil Structures: From the Lab to the Field”, Journal of Advances in Civil Engineering, Vol 2010, doi:10.1155/2010/253274.
9. C. S. Shin and M. W. Lin, 2010, “An optical fiber based curvature sensor for endodontic files inside a tooth root canal”, accepted by IEEE Sensors Journal. (SCI)
10. S. K. Liaw, Y. S. Huang, N. Guo Mars, C.S. Shin, N. K. Chen, K.C. Hsu, J. C. Dong and P. Shum Perry, 2009, “Bridge-Scheme C+L band hybrid amplifier with optimum dispersion compensation and gain equalization”, submitted to Optic Express.
11. Yu-Lin Shen, Chow-Shing Shin, “Distributed Sensing Floor for an Intelligent Environment”, IEEE Sensors Journal, 9, 12, 1673 -1678, 12, 2009
12. C.S. Shin, C.Q. Cai, 2008, “Surface fatigue crack growth suppression in cylindrical rods by artificial infiltration”, International Journal of Fatigue, Volume 30, Issue 3, Pages 560-567 (SCI)
13. 單秋成, 何彥儒, 楊仕偉, 鄭錦榮, 2008, “複合材料衝擊、扭轉及膠合破壞檢測技術之比較”, 臺電工程月刊 719:83-97。
14. 單秋成, 黃寬明, 郭鴻達, 2008, “核能電廠閘桿受力量規之研發”, 臺電工程月刊 721:53-59。
15. R.V. Prakash and C.S. Shin, 2007, “An Evaluation of Stress-Strain Property Prediction by Automated Ball Indentation (ABI) Testing,” Journal of Testing and Evaluation 35 (3): 221-232 MAY 2007. NSC92-2811-E-002-041, NSC94-2212-E-002-031 (SCI)
16. C. S. Shin and C. Q. Cai, 2007, “Evaluating Fatigue Crack Propagation Properties Using a Cylindrical Rod Specimen,” International Journal of Fatigue, Vol. 29, pp. 397–405. NSC93-2212-E-002-062 (SCI)
17. M.C. Young, L.W. Tsay, C. S. Shin, S.L.I. Chan, 2007 “The effect of short time post-weld heat treatment on the fatigue crack growth of 2205 duplex stainless steel welds,” International Journal of Fatigue, Volume 29, Issue 12, pp. 2155-2162. (SCI)
18. S.K. Liaw, K.L. Hung, Y.T. Lin, C.C. Chiang, C.S. Shin, 2007, “C-Band Continuously Tunable Lasers Using Tunable Fiber Bragg Gratings,” Optics and Laser Technology 39 (6): 1214-1217.
19. C.C. Chiang, C. L. Lin and C.S. Shin, 2006, “Application of the embedded optical fiber Bragg grating sensors in detecting the internal fatigue damage of Gr/Epoxy laminated composites,” Journal of the Chinese Society of Mechanical Engineers, Vol.27, No.6, pp.801-807. (EI)
20. C.S. Shin and C.C. Chiang, 2006, “Embedded Fibre Bragg Grating Sensors for Internal Fatigue Damage Monitoring in Polymeric Composites,” Vol.321-323, pp.230-233, Key Engineering Materials. NSC91-2212-E-002 -056 and NSC92-2212-E-002-002. (SCI)
21. U.M. Li, C. S. Shin, W.H. Lan and C.P. Lin, 2006 “Application of NonDestructive Testing in Cyclic Fatigue of Endodontic Ni-Ti Rotary Instruments,” Vol.25, No.2: pp.247-252,, Dental Materials. (SCI)
22. C. S. Shin and C. Q. Cai, 2006 “Fatigue Crack Propagation Properties From Small Sized Rod Specimens,” 236, pp.2574– 2579, Nuclear Engineering and Design. NSC93-2212-E-002-062 (SCI)
23. C.S. Shin and C.C. Chiang, 2006 “Fatigue Damage Monitoring in Polymeric Composites Using

Multiple Fibre Bragg Gratings,” Vol.28, No.10, pp.1315-1321, International Journal of Fatigue. (SCI)

24. C.S. Shin and C.C. Chiang, 2006 “Temperature Compensated Fiber Bragg Grating Using Fiber Reinforced Polymetric Composites,” Vol.29, No.3, pp.519-526, Journal of the Chinese Institute of Engineers. (SCI)
25. C.S. Shin, C.C. Chiang and S. K. Liaw, 2006 “Comparison of Single and Double Cladding Long Period Fiber Grating Sensor Using an Intensity Modulation Interrogation System,” Optics Communications, Vol. 258, pp.23-29. (SCI)

國際會議論文 (International Conference Papers) :

1. C S Shin and S. W. Yang, 2010, “Post-Impact Fatigue Damage Monitoring using Fiber Bragg Grating Sensors”, Proceedings, the fifth international Conf. on Fatigue of Composites, Nanjing, China, Oct. 2010.
2. C S Shin and S. W. Lin, 2010, “A Critique on Evaluating Fatigue Crack Propagation Properties Using Miniature Specimens”, Proceedings of 2010 International Conf. on Advances in Materials and Manufacturing Processes”, Nov, Shenzhen, China Advanced Materials Research Vols. 146-147 (2011) pp 646-649. (EI)
3. C S Shin and S. W. Yang, 2010, “Post-Impact Fatigue Damage Monitoring using Fiber Bragg Grating Sensors”, Proceedings of Taiwan-Russian Bilateral symposium on problems in advanced mechanics, Lomonosov Moscow State Univ., Moscow, Sept. 2010.
4. Shen, Y. L., Shin, C. S., 2009, “The Identification of Wall Thickness Change in the Pressure Pipelines Using a Distributed Fiber-Optic Sensing System”, 20th International Conference on Adaptive Structures and Technologies October 20-22, 2009, Hong Kong.
5. Shin, C. S., Chen, B. L., 2009, "A comparison of interrogation schemes for impact event monitoring using fiber Bragg gratings" in Second International Conference on Smart Materials and Nanotechnology in Engineering, edited by Jinsong Leng, Anand K. Asundi, Wolfgang Ecke, Proceedings of SPIE Vol. 7493 (SPIE, Bellingham, WA 2009) pp. 749314-749314-6 (EI)
6. C.S. Shin, B. L. Chen & J. R. Cheng, 2008, “An impact events monitoring system for wind turbine blades”, Multi-functional Materials and Structures2008, July, 2008, Hong Kong, Advanced Materials Research Vols. 47-50, pp 431-434.
7. B. L. Chen & C.S. Shin, 2008, “Fiber Bragg Gratings Array for Structural Health Monitoring”, Multi-functional Materials and Structures2008, July, 2008, Hong Kong, Advanced Materials Research Vols. 47-50 (2008) pp 407-410.
8. C.S. Shin, B. L. Chen & C.C. Chiang, 2007, “A Dynamic Strain Measurement System Using Fiber Grating Sensors and its Application in Structural Health Monitoring,” World Forum on Smart Materials and Smart Structures Technology, SMSST’07, Chongqing & Nanjing, China, May 22-27, 2007.
9. C.C.Chiang, C.S. Shin & S. K. Liaw, 2006, “An Intensity Modulation Based High-Speed and High-Resolution Long-Period Fiber Grating Sensor Interrogating System,” Advanced Environmental, Chemical, and Biological Sensing Technologies IV, Optics East, SPIE, Oct.

2006, Boston Ma., USA. Proc. of SPIE Vol.6377, 63770W-3.

10. S.K. Liaw, M. Chang, C. Chiang, CS Shin, "Reconfigurable optical add/drop multiplexer with 8.0 dB net gain using double pass amplified scheme," Proceedings of SPIE Vol. 6389, 638916 (2006) (EI)

國內會議論文 (Domestic Conference Papers) :

1. C.Y. Liu, C.S. Shin & C.P. Lin, 2008, "A critical analysis of frequency and temperature effect on the fatigue life of rotary endodontic instrument", 2008 International Symposium on Biomedical Engineering, Dec. 12-13, Tao Yuan, ROC
2. Y.T. Tseng, C.S. Shin & Y.H. Tsuang, 2008 "Development and application of a miniature fiber-optic needle pressure sensor", 2008 International Symposium on Biomedical Engineering, Dec. 12-13, Tao Yuan, ROC.
3. 單秋成, 陳品成, 2004, "利用小尺寸圓桿試片進行疲勞性質測試之技術", 中華民國第八屆破壞科學研討會論文集 A1-07, 民國 93 年 3 月 26-27 日, 墾丁, 中華民國。

專利 (Patents) :

1. 單秋成, 葉健文 (2008) "光纖感測系統", 中華民國專利公開號 200604501, 初審核准。
2. 單秋成, 葉健文 (2007) "Fiber-Optic Sensing System for In-Vivo Measurement of Biological Parameter," 美國專利 US7,196,318.
3. 單秋成, 林俊彬, 李偉民 (2007) "Fiber-Optic Sensing System for Measuring Curvature," 美國專利 US7,212,694。
4. 單秋成, 林俊彬, 李偉民 (2006) "用以量測彎曲度之光纖感測系統," 中華民國新發明專利 266635。
5. 單秋成, 林志豪, 江家慶, 廖顯奎, 曾昱璋, 陳宣臣 (2006), "Device and Method of Temperature Compensating Optical Component," 美國專利 US7,031,570。
6. 單秋成, 江家慶 (2006) "Energy-Modulating Fiber Grating Sensor," 美國專利 US7,005,630。

研究計畫 (Research Projects) :

1. 牙科根管銼機械性質評估與斷裂防治, 主持人, 計劃期間:07/08/01~10/07/31, 委任單位: 國科會。
2. 風力機組葉片複合材料破損分析及劣化監測技術之建立, 主持人, 計劃期間:06/08/01~07/10/31, 委任單位: 台電公司。
3. 內埋式光纖感測器研究 94-2212-E-002-034, 95-2221-E-002-221, 96-2212-E-002-006, 主持人, 計劃期間:05/08/01~08/07/31, 委任單位: 國科會。
4. 利用微型平板試片進行疲勞裂縫延伸測試探討 94-2212-E-002-031, 95-2221-E-002-219, 主持人, 計劃期間:06/08/01~07/07/31, 委任單位: 國科會。
5. 複層材料應變量規性能改善研究, 主持人, 計劃期間:06/09/08~07/03/07, 委任單位: 核能

研究所。

6. 超臨界鍋爐在不同溫度設計下材料破壞機制分析及對應鍋爐供應商應具之適切技術能力，主持人，計劃期間:06/09/05~06/11/04，委任單位: 台電公司。
7. 光纖光柵在輻射環境之應用研究，共同主持人，計劃期間:06/01/01~06/12/31，委任單位: 核能研究所。
8. 量測原理與機工實驗課程設備研發與建立，主持人，計劃期間:06/01/01~06/12/31，委任單位: 宗倬章基金會。

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清華大學，動力機械工程學士，1978

B.S. in Power Mechanical Engineering,
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密西根大學，機械工程碩士，1981

M.S. in Mechanical Engineering,
University of Michigan – Ann Arbor,
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密西根大學，機械工程博士，1984

Ph.D. in Mechanical Engineering,
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1984

研究專長 (Specialty) :

固體力學、複合材料、車輛工程、再生能源

Solid Mechanics, Composite Materials, Vehicle Engineering, Renewable Energy

期刊論文 (Journal Papers) :

1. Chang, Y.W. and Cheng, J.H., 2010, “Material Characterization of Polycarbonate under Glass Transition Temperature,” submitted to *Journal of Composite Materials*. (SCI, EI)
2. Chang, C.K. and Cheng, J.H., 2008, “Parametric Deflection Corrections of Annular Sandwich Panels under Transverse Central Loads,” *Journal of the Chinese Institute of Engineers*, Vol.31, pp.31-39. (SCI, EI)
3. Hu, S.Y. and Cheng, J.H., 2007, “Performance Evaluation of Pairing between Sites and Wind Turbines,” *Renewable Energy*, Vol. 32, pp.1934-1947. (SCI, EI)
4. Chang, C.K. and Cheng, J.H., 2007, “Optimization of Sandwich Monocoque Car Body with Equivalent Shell Element,” *Journal of Mechanics*, Vol.23, pp. 381-387. (SCI)
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3. Cheng, J.H. and Hsu, T.T., 2010, "Research and Design of an Intelligent Personal Lightweight Electric Vehicle," The 25th World Battery, Hybrid and Fuel Cell Electric Vehicle Symposium and Exposition, Shenzhen, China.
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9. Cheng, J.H. and Li, C.T., 2008, "Backward Energy Management Algorithm for a Solar Car," World Renewable Energy Congress X and Exhibition, Glasgow, UK.
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4. 鄭榮和、蔡耀庭，"小型垂直軸風力發電機葉片流場數值模擬研究"，中國機械工程學會第二十六屆全國學術研討會，國立成功大學，2010年。
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22. 鄭榮和, 2006, “太陽能燃料電池混合動力直接驅動車之研發與展示—子計畫四：太陽能燃料電池混合動力車車體結構設計及能量管理系統研發(2/3),” 國科會專題研究計畫成果報告, NSC 94-2218-E-002-053。
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研究計畫 (Research Projects) :

1. 前瞻電動車底盤設計, 主持人, 計畫期間: 11/01/01~11/12/31, 委任單位: 金屬工業研究發展中心。
2. 電動車輛載具開發與關鍵技術建立, 主持人, 計畫期間: 11/01/01~15/12/31, 委任單位: 八達創新科技股份有限公司。
3. 電動車關鍵零組件研究—總計畫, 主持人, 計畫期間: 11/01/01~11/12/31, 委任單位: 台達電子工業股份有限公司。
4. 台電中彰風場風力特性評估與大型風力機組技術研究—子計畫三: 風機結構分析, 主持人, 計畫期間: 10/11/01~11/10/31, 委任單位: 台灣電力股份有限公司。
5. 智慧化個人輕型電動載具研發(2/2), 主持人, 計畫期間: 10/10/01~11/09/30, 委任單位: 國科會。

6. 智慧化個人輕型電動載具研發(1/2)，主持人，計劃期間：09/10/01~10/12/31，委任單位：國科會。
7. 前瞻創新電動車底盤技術構想發展計畫，主持人，計劃期間：10/04/01~10/11/30，委任單位：工業技術研究院。
8. 真空氣動梭之束框工具、吊具與滑動門機構設計與改良服務，主持人，計劃期間：10/04/01~10/07/30，委任單位：崇友實業股份有限公司。
9. 智慧化個人輕型電動載具研發-智慧化個人輕型電動載具研發(I)，主持人，計劃期間：08/12/01~09/11/30，委任單位：國科會。
10. 複合動力系統之結構與熱傳性能設計與測試，主持人，計劃期間：08/08/01~09/07/31，委任單位：國科會。
11. PCB Layout 內部 EMC/EMI 模擬分析軟體技術研究，主持人，計劃期間:08/01/01~08/12/31，委任單位: 裕隆日產汽車公司。
12. 燃料電池系統即時動態模擬平台及評估系統，主持人，計劃期間:07/10/01~08/9/30，委任單位: 台達電子文教基金會。
13. 永磁同步伺服馬達與高速感應馬達熱傳及結構分析，主持人，計劃期間:07/10/01~08/03/31，委任單位: 鴻海公司。
14. 車用聚碳酸酯風擋及車窗之設計及熱成形技術研究，主持人，計劃期間:07/04/01~08/03/31，委任單位: 宗倬章先生教育基金會。
15. 鋰電池電動車研製，主持人，計劃期間:07/09/01~09/7/31，委任單位: 台達電子工業股份有限公司。
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21. 質子交換膜燃料電池組之組裝端板最佳化設計 95-2221-E-002-246-，主持人，計劃期間:06/08/01~07/07/31，委任單位: 國科會。
22. 聚碳酸酯板材之熱成型技術研究與工程應用95-2221-E-002-049-MY2，主持人，計劃期間:06/08/01~07/07/31，委任單位: 國科會。
23. 電腦硬碟之振動噪音分析與減制研究，主持人，計劃期間:06/01/01~06/12/31，委任單位: 華碩電腦公司。
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研究專長 (Specialty) :

塑性力學、金屬成形、有限元素分析、電腦輔助模具設計、結構強度分析
 Plasticity, Metal Forming, Finite Element, Analysis, Computer-Aided Tooling Design,
 Structure Strength Analysis

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4. 蔡恆光, 廖建智, 陳復國, "鎂合金 LZ91 筆記型蓋板之模具沖壓設計," 模具技術與論文發表會論文集, 2007。
5. 莊文章, 廖志杰, 童山, 陳復國, "多孔穴鋁合金管件擠製之 CAE 電腦模擬," 鍛造, 16 卷 1 期 (2007)。
6. 洪俊銘, 陳復國, 黃思奮, 葉育成, "鋁合金避震器支架之溫間鍛造模具設計," 鍛造 (2007)。
7. 廖志杰, 陳復國, 王文寬, 邱垂泓, "LZ 系鎂合金沖壓成形性之研究," 鎂合金產業通訊, 34 期 (2006) 17-23。

得獎紀錄 (Honors) :

1. 2007 年鍛造協會論文研討會大會最佳論文獎

研究計畫 (Research Projects) :

1. 鎂鋰與鎂鋁合金板材壓造成形之研究, 主持人, 計畫期間: 07/08/1 - 09/07/31, 委任單位: 國科會。
2. 金屬精微成形製程之研究, 主持人, 計畫期間: 07/08/1 - 10/07/31, 委任單位: 國科會。
3. 鋁基複合材料塑性成形特性之研究, 主持人, 計畫期間: 09/01/1 - 09/12/31, 委任單位: 中科院。
4. 材料高速受力行爲研究, 主持人, 計畫期間: 07/1/1 - 07/12/31, 委任單位: 財團法人嚴慶齡工業發展基金會。
5. 鋁圈衝擊強度 CAE 分析能力建立, 主持人, 計畫期間: 07/1/1 - 07/12/31, 委任單位: 財團法人嚴慶齡工業發展基金會。
6. 先進高張力鋼板成形特性分析與模具設計方法研究, 主持人, 計畫期間: 07/1/1 - 07/12/31, 委任單位: 財團法人嚴慶齡工業發展基金會。
7. 沖壓模具基礎技術, 主持人, 計畫期間: 07/1/1 - 07/12/31, 委任單位: 財團法人金屬工業研究發展中心。
8. AZ31 鎂合金管擠製研究, 主持人, 計畫期間: 07/1/1 - 07/12/31, 委任單位: 中山科學研究院。
9. 汽車結構局部改型之評估與設計, 主持人, 計畫期間: 06/1/1 - 06/12/31, 委任單位: 財團法人嚴慶齡工業發展基金會。
10. 金屬精微成形技術之現況分析與材料特性實驗方法之探討, 主持人, 計畫期間: 06/12/1 - 07/2/28, 委任單位: 財團法人金屬工業研究發展中心。
11. 鋁合金鍛造之模具設計 CAE 技術, 主持人, 計畫期間: 06/3/1 - 06/11/30, 委任單位: 財團法人金屬工業研究發展中心。
12. 高強度鋼板沖壓成形回彈現象之研究, 主持人, 計畫期間: 06/2/1 - 07/1/31, 委任單位: 中國鋼鐵股份有限公司。
13. 非對稱鋁型材擠製模具設計及塑性成型研究, 主持人, 計畫期間: 06/1/1 - 06/12/31, 委任單位: 中山科學研究院。

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臺灣大學，機械工程學士，1981

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University of Rochester, 1989

加州大學柏克萊分校，機械工程博士，
1992

Ph.D. in Mechanical Engineering,
University of California, Berkeley, 1992

研究專長 (Specialty) :

機械振動、彈性力學、板殼分析

Mechanical Vibration, Elasticity, Plates and Shells

期刊論文 (Journal Papers) :

1. Jen-San Chen, and Yaw-Yi Fang, “Non-Axisymmetric Warping of a Heavy Circular Plate on a Flexible Ring Support,” International Journal of Solids and Structures, Vol. 47, pp. 2767–2774, 2010. (SCI)
2. Wei-Chia Ro, Jen-San Chen, and Shau-Yu Hong, 2010, “Vibration and Stability of a Constrained Elastica with Variable Length,” International Journal of Solids and Structures, (in press). (SCI)
3. Jen-San Chen, Wei-Chia Ro, 2010, “Deformations and Stability of an Elastica Subjected to an Off-Axis Point Constraint,” ASME Journal of Applied Mechanics, Vol. 77, 031006. (SCI)
4. Jen-San Chen, Hong-Chi Li, Wei-Chia Ro, 2010, “Slip-Through of a Heavy Elastica on Point Supports”, International Journal of Solids and Structures, Vol. 47, 261-268. (SCI)
5. Jen-San Chen, Wei-Chia Ro, Jian-San Lin, 2009, “Exact Static and Dynamic Critical Loads of a Shallow Arch under a Point Force at the Midpoint”, International Journal of Non-Linear Mechanics, Vol. 44, 66-70. (SCI)
6. Jen-San Chen, Wei-Chia Ro, 2009, “Dynamic Response of a Shallow Arch under End Moments”, Journal of Sound and Vibration, Vol. 326, 321-331. (SCI)

7. Zhi-Hao Lu and Jen-San Chen, 2008, "Deformations of a Clamped-Clamped Elastica inside a Circular Channel with Clearance," *International Journal of Solids and Structures*, Vol. 45, pp. 2470-2492. (SCI)
8. Jen-San Chen, Jeng-Yu Chen, and Yuan-Fang Chou, 2008, "On the Natural Frequencies and Mode Shapes of Dragonfly Wings," *Journal of Sound and Vibration*, Vol. 313, pp. 643-654. (SCI)
9. Jen-San Chen and Yong-Zhi Lin, 2008, "Snapping of a Planar Elastica with Fixed End Slopes," *ASME Journal of Applied Mechanics*, Vol. 75, 041024. (SCI)
10. Jen-San Chen and Yong-Yeh Chang, 2007, "On the Unsymmetrical Deformation and Reverse Snapping of a Spinning Non-Flat Disk," *International Journal of Non-Linear Mechanics*, Vol. 42, pp. 1000-1009. (SCI)
11. Jen-San Chen and Der-Wei Chang, 2007, "Snapping of a Shallow Arch with Harmonic Excitation at One End," *ASME Journal of Vibration and Acoustics*, Vol. 129, pp. 514-519. (SCI)
12. Jen-San Chen and Chia-Wei Li, 2007, "Planar Elastica inside a Curved Tube with Clearance," *International Journal of Solids and Structures*, Vol. 44, pp. 6173-6186. (SCI)
13. Jen-San Chen and Min-Ray Yang, 2007, "Vibration and Stability of a Shallow Arch under a Moving Mass-Dashpot-Spring System," *ASME Journal of Vibration and Acoustics*, Vol. 129, pp. 66-72. (SCI)
14. Jen-San Chen and Cheng-Han Yang, 2007, "Experiment and Theory on the Nonlinear Vibration of a Shallow Arch under Harmonic Excitation at the End," *ASME Journal of Applied Mechanics*, Vol. 74, pp. 1061-1070. (SCI)
15. Jen-San Chen and Jian-San Lin, 2006, "Stability of a Shallow Arch with One End Moving at Constant Speed," *International Journal of Non-Linear Mechanics*, Vol. 41, pp. 706-715. (SCI)
16. Jen-San Chen and Tzu-Min Huang, 2006, "Deformation and Reverse Snapping of a Circular Shallow Shell under Uniform Edge Tension," *International Journal of Solids and Structures*, Vol. 43, pp. 7776-7792. (SCI)
17. Jen-San Chen and Yuon-Tai Li, 2006, "Effects of Elastic Foundation on the Snap-Through Buckling of a Shallow Arch under a Moving Point Load," *International Journal of Solids and Structures*, Vol. 43, pp 4220-4237. (SCI)

研究計畫 (Research Projects) :

1. 受拘束大變形樑之非線性力學，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
(Non-linear Mechanics of Constrained Elastica)
2. 心血管支撐架安裝的非線性力學問題，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。

(Nonlinear Mechanics Problems in Stent Deployment)

3. 旋轉彎曲圓盤之挫曲理論與實驗(2/2)，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。

(Experiment and Theory on the Snap-Through Buckling of a Spinning Non-Flat Disk (2/2))

4. 旋轉彎曲圓盤之挫曲理論與實驗(1/2)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

(Experiment and Theory on the Snap-Through Buckling of a Spinning Non-Flat Disk)

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臺灣大學，機械工程學士，1984

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加州大學柏克萊分校，機械工程博士，
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Ph.D. in Mechanical Engineering,
University of California, Berkeley, 1994

研究專長 (Specialty) :

振動學、固體力學

Vibration, Solid Mechanics

期刊論文 (Journal Papers) :

1. Lu, C.-J. and Lin, Yu-Min, 2010, "Periodic Solutions of a Rotor Equipped with a Ball-type Automatic Balancer," The joint 9th World Congress on Computational Mechanics and 4th Asian Pacific Congress on Computational Mechanics, Sydney, Australia.
2. Lu, C.-J., Wang, M.-C., and Huang, "Analytical Study of the Stability of a Two-Ball Automatic Balancer", Mechanical System and Signal Processing, Vol.23 , No.3 ,pp. 884 -896 , 03, 2009
3. Lu, C.-J. and Hung, Chia-Hsing, 2008, "Stability Analysis of a Three-Ball Automatic Balancer," ASME Journal of Vibration and Acoustics, Vol. 130, No. 5, 051008-1~051008-7. (SCI, EI)
4. Ming-Cheng Wang and Chung-Jen Lu, 2007, "Dynamic Characteristics of a One-Unit Ball-Rod-Spring Balancer," ASME Journal of Vibration and Acoustics, 129, pp. 520-524.
5. Chung-Jen Lu, 2006 年, ASME Journal of Vibration and Acoustics, Vol.128-1, pp.122-125, "Stability Analysis of a Single-Ball Automatic Balancer."

國際會議論文 (International Conference Papers) :

1. Lu, C.-J. and Lin, Y.-M., 2010, "A Modified Incremental Harmonic Balance Method for Rotary Periodic Motions," Nonlinear Dynamics
2. Lu, C.-J. and Wang, Ming-Cheng, "Theoretical and Experimental Study of Ball-Type

Automatic Balancer for Eccentric Rigid Rotors”, The 16th International Congress on Sound and Vibration, 2009

3. Lu, C.-J. and Wang, Ming-Cheng, 2008, “Stability Analysis of Ball-Type Automatic Balancer for Long Rigid Rotors,” The 15th International Congress on Sound and Vibration, Dec. 2008, Korea.
4. Wang, Ming-Cheng and Lu, C.-J., 2007, “Stability Analysis of a New Design of Ball-Type Automatic Balancer,” The 12th Asia Pacific Vibration Conference, Sapporo, Japan
5. Lu, C.-J. and Hung, Chia-Hsing, 2006, “Stability Analysis of a Three-Ball Automatic Balancer,” The Thirteen International Congress on Sound and Vibration, Vienna, Austria

國內會議論文 (Domestic Conference Papers) :

1. 王明正、盧中仁，2006，“單滾珠彈簧自動平衡機構之穩定性分析”，第二十三屆中國機械工程全國學術研討會，昆山科技大學

研究計畫 (Research Projects) :

1. 滾珠自動平衡裝置-剛性長轉子系統的全域和暫態分析，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會, 97-2221-E-002-022-
2. 配備滾珠型自動平衡裝置光碟機的全域動態分析，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
Global Dynamical Analysis of the Optical Disk Drive Equipped with a Ball-Type Automatic Balancer, 96-2221-E-002-216-
3. 基於隨機 Cantor 集表面模型的接觸熱阻分析，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
Thermal Contact Resistance Analysis Based on a Random Cantor Set Surface Model, 95-2221-E-002-050-
4. 滾珠型自動平衡機構在剛性長轉子動態平衡上的應用，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
Application of Ball-Type Automatic Balancer to the Dynamic Balancing of Long Rigid Rotor, 94-2212-E-002-033-

施文彬

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臺灣大學，土木工程學士，1997

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康乃爾大學，理論及應用力學博士，
2004

Ph.D. in Theoretical and Applied Mechanics, Cornell University, 2004

研究專長 (Specialty) :

微機電系統、微奈米加工、應用力學

Microelectromechanical Systems, Microfabrication, Applied Mechanics

期刊論文 (Journal Papers) :

1. T.-C. Hsu^s, C.-H. Lu^s, Y.-T. Huang^s, **W.-P. Shih***, and W.-S. Chen, “Concentric polymer-dispersed liquid crystal rings for light intensity modulation,” submitted to Sensors and Actuators A, accepted, Jan. 31, 2011
2. Y.-C. Wang^s, Y.-C. Tsai^s, and **W.-P. Shih***, “Flexible PDMS micro-lens array with programmable focus gradient fabricated by dielectrophoresis force,” Microelectronic Engineering, accepted, Jan. 18, 2011
3. Y.-C. Tsai^s, M.-D. Wu^s, and **W.-P. Shih***, “Fabrication and characterization of e-beam photoresist array for biomimetic self-cleaning dry adhesives,” Microelectronic Engineering, accepted, Jan. 18, 2011
4. W.-C. Wang*, W.-J. Wu, W.-S. Hua^s, **W.-P. Shih**, and C.-L. Tsui^s, “Development of 2-D microdisplay using an integrated microresonating waveguide scanning system,” submitted to Journal of Intelligent Material Systems and Structures, Jul. 24, 2010
5. Y.-C. Tsai^s and **Wen-Pin Shih***, “Artificial petal effect on nanofibrillar parylene surface,” submitted to Journal of Adhesion, Nov. 2, 2010
6. A.-B. Wang*, I.-C. Lin, Y.-W. Hsieh, G.-W. Wu, and **W.-P. Shih**, “Pressure driven bubble generation in a microfluidic T-junction,” submitted to Physical Review Letters, Dec. 30, 2010
7. Y.-C. Tsai^s, M.-D. Wu^s, and **W.-P. Shih***, “A mask-free fabrication of SU-8/silicon spherical micro-probe,” Microelectronic Engineering, accepted, Dec. 29, 2010
8. C.-J. Chang^s, Y.-L. Yang^s, Y.-P. Lee^s, C.-J. Chiang^s, C.-A. Dai*, J.-C. Chen, Y.-Y. Cheng, C.-C. Chen^s, W.-M. Liu, **W.-P. Shih**, and J.-Y. Yen, “Bionic soft lens materials based on

- self-assembling amphiphilic block copolymer/nanoparticle hybrids,” *Microelectronic Engineering*, accepted, Dec. 17, 2010
9. C.-J. Chang^s, Y.-H. Lee^s, C.-A. Dai*, C.-C. Hsiao^s, S.-H. Chen, N.P.D. Nurmalasari, J.-C. Chen, Y.-C. Cheng, **W.-P. Shih**, and P.-Z. Chang, “A large area biomaterial sheet of piezoelectric nanogenerators for energy harvesting: effect of RF sputtering on ZnO nanorod,” *Microelectronic Engineering*, accepted, Dec. 2, 2010
 10. C.-J. Lee^s, M.-D. Wu^s, Y.-C. Tsai^s, and **W.-P. Shih***, “Fabrication and characteristics of an ultra-thin carbon nanotube/parylene membrane at large strain,” *Microelectronic Engineering*, accepted, Nov. 11, 2010
 11. C.-C. Yeh^s and **W.-P. Shih***, “Effects of water contents on the actuation performance of ionic polymer-metal composites,” *Smart Materials and Structures*, Vol. 19, 124007, 2010
 12. G.-W. Wu^s, **W.-P. Shih***, C.-Y. Hui, S.-L. Chen, and C.-Y. Lee, “Bonding strength of pressurized microchannels fabricated by polydimethylsiloxane and silicon,” *Journal of Micromechanics and Microengineering*, Vol. 20, 115032, 2010
 13. L.-Y. Ding^s, **W.-P. Shih***, Y.-C. Hu, Y.-J. Chen^s, and P.-Z. Chang, “CMOS-compatible electrochemical process for improving quality factor of spiral microinductors,” *Micro & Nano Letters*, Vol. 5, pp. 266-269, 2010
 14. T.-E. Tsai^s, G.-W. Wu^s, C.-C. Chang^s, **W.-P. Shih**, and S.-L. Chen*, “Dynamic test method for determining the thermal performances of heat pipes,” *International Journal of Heat and Mass Transport*, Vol. 53, pp. 4567-4578, 2010
 15. C.-J. Chang^s, Y.-H. Lee^s, C.-J. Chiang^s, Y.-P. Lee^s, H.-C. Chien^s, **W.-P. Shih**, Y.-Y. Cheng, and C.-A. Dai*, “Strength of polymer phase boundaries with large interfacial width: effects of interfacial profile and phase separation morphology,” *Journal of Polymer Science: Polymer Physics*, Vol. 48, pp. 1834-1846, 2010
 16. **W.-P. Shih***, L.-C. Tsao^s, M.-Y. Cheng^s, C. Chang^s, Y.-J. Yang, and K.-C. Fan, “Flexible temperature sensor array based on a graphite-polydimethylsiloxane composite,” *Sensors*, Vol. 10, pp. 3597-3610, 2010
 17. D. Liang^s, **W.-P. Shih***, C.-S. Chen, and C.-A. Dai, “A miniature system for separating aerosol particles and measuring mass concentrations,” *Sensors*, Vol. 10, pp. 3641-3654, 2010
 18. P.-J. Shih* and **W.-P. Shih**, “Design, fabrication, and application of bio-implantable acoustic power transmission,” *Journal of Microelectromechanical Systems*, Vol. 19, pp. 494-502, 2010
 19. C.-Y. Lee, C. Chang*, **W.-P. Shih**, and C.-L. Dai, “Wet etching rates of InGaZnO for the fabrication of transparent thin-film transistors on plastic substrates,” *Thin Solid Films*, Vol. 518, pp. 3992-3998, 2010
 20. Y.-J. Chen^s, **W.-P. Shih***, C.-K. Kao, and P.-Z. Chang, “Design and fabrication of a tunable superconductive resonator utilizing micromachined tunable capacitor,” *Journal of Microelectromechanical Systems*, Vol. 19, pp. 129-136, 2010
 21. C.-W. Lee^s and **W.-P. Shih***, “Quantification of ion trapping effect of carbon nanomaterials in liquid crystals,” *Materials Letters*, Vol. 64, pp. 466-468, 2010
 22. C.-A. Dai, A.-C. Kao, W.-B. Tsai, W.-S. Chen, **W.-P. Shih**, C.-C. Ma, “Polymer Actuator Based

- on PVA/PAMPS Ionic Membrane: Optimization of Ionic Transport Properties”, *Sensors and Actuators: A*, Vol. 155, 152 -162 , 2009
23. C.-Y. Lee, S.-J. Lee, Y.-C. Hu, W.-P. Shih, W.-Y. Fan, and C.-W. Chuang, “Integration of silicon micro-hole arrays as a gas diffusion layer in a micro fuel cell”, *International Journal of Hydrogen Energy*, Vol. 34, 6457 -6464 , 2009
 24. C.-Y. Lee, S.-J. Lee, Y.-C. Hu, W.-P. Shih, W.-Y. Fan, C.-W. Chuang, “Real time monitoring of temperature of a micro proton exchange membrane fuel cell”, *Sensors*, 9, 1423 -1432 , 2009
 25. W.-C. Chuang, Y.-C. Hu, C.-Y. Lee, W.-P. Shih, P.-Z. Chang, “Electromechanical behavior of the curled cantilever beam”, *Journal of Micro/Nanolithography, MEMS, and MOEMS*, Vol. 8, 033020, 2009
 26. C.-A. Dai, C.-C. Hsiao, A.-C. Kao, C.-P. Liu, W.-B. Tsai, W.-S. Chen, W.-M. Liu, W.-P. Shih, C.-C. Ma, “A membrane actuator based on an ionic polymer network and carbon nanotubes: the synergy of ionic transport and mechanical properties”, *Smart Materials and Structures*, Vol. 18, 085016, 2009
 27. W.-P. Shih, C.-L. Lee, C.-W. Lee, L.-C. Tsao, Y.-J. Yang, and K.-C. Fan, 2008, “A comparison of polymer composites for development of flexible sensor array,” *Journal of the Chinese Society of Mechanical Engineers*, accepted, Aug. 24.
 28. W.-P. Shih, S.-Y. Chung, Y.-Y. Chen, W.-J. Wu, and P.-Z. Chang, “Tunable capacitor based on polymer-dispersed liquid crystal for power harvesting microsystems,” *IEEE Transactions on Electron Devices*, Vol. 55, 2568-2573, 2008
 29. X.-Y. Wang, C.-Y. Lee, Y.-C. Hu, W.-P. Shih, C.-C. Lee, J.-T. Huang, and P.-Z. Chang, “The fabrication of silicon-based PZT microstructures using aerosol deposition method,” *Journal of Micromechanics and Microengineering*, Vol. 18, 055034, 2008
 30. Y.-J. Yang, M.-Y. Cheng, W.-Y. Chang, L.-C. Tsao, S.-A. Yang, W.-P. Shih, F.-Y. Chang, S.-H. Chang, and K.-C. Fan, “An integrated flexible temperature and tactile sensing array using PI-copper films,” *Sensors and Actuators A*, Vol. 143, 143-153, 2008
 31. T.-H. Lin and W.-P. Shih, “Automatic face authentication with self compensation,” *Image and Vision Computing*, Vol. 26, 863-870, 2008
 32. Y.-J. Yang, B.T. Chia, D.-R. Chang, H.-H. Liao, W.-P. Shih, F.-Y. Chang, and K.-C. Fan, “Development of a flexible temperature sensor array,” *Key Engineering Materials*, Vol. 381-382, pp. 383-386, 2008
 33. L.-C. Tsao, D.-R. Chang, W.-P. Shih, and K.-C. Fan, “Fabrication and characterization of electro-active polymer for flexible tactile sensing array,” *Key Engineering Materials*, Vol. 381-382, pp. 391-394, 2008
 34. Y.-C. Hu, W.-P. Shih, and G.-D. Lee, “A method for mechanical characterization of capacitive devices at wafer-level via detecting the pull-in voltages of two test-bridges with different lengths,” *Journal of Micromechanics and Microengineering*, Vol. 17, pp. 1099-1106, 2007
 35. P.-J. Shih and W.-P. Shih, “Impact dynamics of vibratory micro-probe for micro coordinate measurement,” *Journal of Applied Physics*, Vol. 101, pp. 113516, 2007
 36. C.-H. Chu, W.-P. Shih, S.-Y. Chung, H.-C. Tsai, T.-K. Shing, and P.-Z. Chang, “A low actuation

- voltage electrostatic actuator for RF MEMS switch applications,” Journal of Micromechanics and Microengineering, Vol. 17, pp. 1649-1656, 2007
37. L.-J. Yang, K.-C. Ke, C.-M. Wang, W.-P. Shih, and C.-L. Dai, “A circular microchannel integrated with embedded spiral electrodes used fluid transportation,” Sensors and Actuators A, Vol. 139, pp. 172-177, 2007
 38. Y.-C. Tsai, P.-J. Shih, T.-H. Lin, and W.-P. Shih “Self-cleaning effects of biomimetic dry adhesives,” IEEE Review of Advancements in Micro and Nano Technologies, Vol. 1, pp. 631-632, 2006
 39. T.-H. Lin, W.-P. Shih, C.-S. Chen, and Y.-T. Chiu, “Simulation and analysis of interfacial wettability by dissipative particle dynamics,” IEEE Review of Advancements in Micro and Nano Technologies, Vol. 1, pp. 265-566, 2006
 40. P.-J. Shih, W.-P. Shih, T.-H. Lin, C.-T. Liu, S.-H. Jen, X.-Y. Wang, and H.-P. Huang, “Dynamic performance of micro coordinate measurement probe,” IEEE Review of Advancements in Micro and Nano Technologies, Vol. 1, pp. 477-478, 2006

國際會議論文 (International Conference Papers) :

1. C.-C. Huang, M.-D. Wu, C.-D. Chang, Y.-C. Wang, and W.-P. Shih, “Fabrication and application of iron-oxide nanoparticle/PDMS cone in lab on a chip,” Symposium on Design, Test, Integration & Packaging of MEMS/MOEMS (DTIP 2011), Aix-en-Provence, France, May 11-13, 2011.
2. L.-Y. Ding, W.-P. Shih, M.-H. Lin, Y.-C. Hu, and P.-Z. Chang, “Instant design criteria for LCD cell with photospacer under gravity and local loading using Winkler model,” Society for Information Display’s Display Week (SID 2011), Los Angeles, USA, May 15-20, 2011.
3. G.-H. Liu, S.-F. Wen, P.-C. Chen, and W.-P. Shih, “Real-time humanoid visual system with five degrees of freedom,” 2011 World Congress on Intelligent Control and Automation (WCICA 2011), Taipei, Taiwan, Jun. 21-25, 2011.
4. G.-W. Wu, W.-P. Shih, and S.-L. Chen, “Lamination and characterization of a PET flexible micro heat pipe,” The 10th International Heat Pipe Symposium, Taipei, Taiwan, Nov. 6-9, 2011.
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6. Y.-C. Wang and W.-P. Shih*, “Analysis of U-shape electrothermal microactuators,” The First IFToMM Asian Conference on Mechanism and Machine Science (Asian-MMS 2010), October 21-25, 2010, Taipei, Taiwan.
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研究計畫 (Research Projects)：

1. 仿生人形機器人之發展-子計畫二：人工眼睛之設計與製作，主持人，計畫期間：08/08/01~11/07/31，委任單位：國科會。
2. 優勢重點領域拔尖計畫/工學院/仿人眼智慧影像系統之研發，主持人，計畫期間：08/08/01~09/07/31，委任單位：教育部，邁向頂尖大學計畫。

3. 軟性電子概論，主持人，計畫期間：07/02/01~08/01/31，委任單位：教育部。
4. 無線生醫感測網路晶片系統-子計畫四：無線生醫感測晶片之角速度感測系統，主持人，計畫期間：05/08/01~08/07/31，委任單位：國科會。
Wireless Biomedical System on a Chip- Subproject 4: Angular Rate Sensing System, PI, 05/08/01~08/07/31, NSC.
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期刊論文 (Journal Papers) :

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15. Chi-Chung Su, Neng-Kai Chang, Ber-Ren Wang and Shuo-Hung Chang, "Two dimensional carbon nanotube based strain sensor," 2008 Micro and Nano Engineering (MNE) conference, Athens, Greece, Sept. 15-18, 2008
16. Cheng-Hung Chena, Jia-Yush Yen, Lien-Sheng Chen and S. H. Chang, "Stiching Technology Using Hybrid Actuators in Nano-Impring," 2008 ASME DETC conference, New York City, USA, Aug. 3-6, 2008
17. Hung-Yi Lin, Jen-Hui Tsai, Shuo-Hung Chang, Tung-Chuan Wu, Mao-Kuo Wei, "The effect of sub-wavelength structure morphology on anti-reflection properties," 2008 ASME DETC conference, New York City, USA, Aug. 3-6, 2008
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23. Wu, T. L., Yang, C. H. and Chang, S. H., "A Single-Element Bimorph PZT Driven Linear Ultrasonic Motor," 2007 ASME IDETC/CIS Conference, Las Vegas, USA, Sept. 4-7, 2007

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38. Su, C. C., Wei, C. S. and Chang, S. H., "Electric Property Modification of Carbon Nanotube Field Effect Transistor," International Symposium on Micro and Nano Technology, Hsin Chu, Taiwan, March 29-31, 2006
39. Chen, Y. S., Huang, Y. L., Kuo, C. H. and Chang, S. H., "Investigation on Design Parameters of Droplets Generators," International Symposium on Micro and Nano Technology, Hsin Chu, Taiwan, March 29-31, 2006
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3. 陳逸群, 張所鎡, "不同控制器應用於主動式避振系統之強韌性," 第十一屆全國機構與機器設計學術研討會, 明新科技大學, Nov. 14, 2008
4. 游京翰, 吳宗哲, 蘇志中, 張所鎡, "以原子力顯微鏡探針量測奈米螺旋碳管之機械性質," 中國機械工程學會第二十五屆全國學術研討會, 大葉大學, Nov. 21-22, 2008
5. 李振宏, 蘇志中, 張能凱, 吳宗哲, 張所鎡, "奈米碳螺旋線圈應用於皮膚壓力感測器," 中國機械工程學會第二十五屆全國學術研討會, 大葉大學, Nov. 21-22, 2008
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7. Kuo, C. C., Su, C. C., Chang, C. C. and Chang, S. H., “Enhance Mechanical Properties of Silica Films Deposited by Atmospheric Pressure Plasma Chemical Vapor Deposition,” Proceedings of the 24th National Conference on Mechanical Engineering The Chinese Society of Mechanical Engineers, Chung Li, Taiwan, Nov. 23-24, 2007
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10. Hsu, J. H., Chang, N. K. and Chang, S. H., “Mechanical Properties of Boron Nitride Nanowires using AFM Nano-Manipulation,” Chinese Nano-Engineering and Micro-system Conference, Hsin Chu, Taiwan, Nov. 30-Dec. 1, 2006
11. Chang, N. K., Hsu, J. H. and Chang, S. H., “Use of Amorphous Carbon for Single Walled Carbon Nanotube Probe,” Chinese Nano-Engineering and Micro-system Conference, Hsin Chu, Taiwan, Nov. 30-Dec. 1, 2006
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專利 (Patents) :

1. 張所鉉等 3 人 “與半導體製程相容之壓電噴墨頭,” 中華民國專利, 專利編號 283890, 專利期間: 7/11/2007-8/2025
2. 張所鉉等 3 人 “與半導體製程相容之奈米液滴壓電噴墨頭,” 中華民國專利, 專利編號 283653, 專利期間: 7/11/2007-11/2024
3. 張所鉉, 李昇憲 “一種晶片步進機之構造 (A wafer stepping mechanism)”, 中華民國專利, 專利編號 186689, 專利期間 9/11/2003-7/18/2018
4. 張所鉉, 顏安佑, “手握式電器用品之省電開關控制結構”, 日本專利, 專利編號 3086194
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6. 張所鉉等五人, “三自由度高精度線性定位平台” 中華民國專利, 專利編號: 202831, 專

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7. 張所銘,吳冬立,“並聯式六自由度奈米定位平台”中華民國專利, 專利編號: 215611, 專利期間: 12/1/2003~12/24/2014
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專書 (Books) :

1. “光機電系統整合概論”, 編輯-伍秀菁、汪若文、林美吟, 國家實驗研究院儀器科技研究中心出版, July 2005

得獎紀錄 (Honors) :

1. Outstanding Professor Award, Chinese Society of Mechanical Engineers (2005)

研究計畫 (Research Projects) :

1. 奈米螺旋碳管、填鐵奈米碳管製程及機電元件研製--總計畫: 奈米螺旋碳管、填鐵奈米碳管製程及機電元件研製, 主持人, 計畫期間: 2010/8/1~2013/7/31, 委託單位: 國科會。
(Synthesis of carbon nanocoils and Fe-filled carbon nanotubes、characterization and devices development, period: 2010/8/1~2013/7/31, NSC)
2. 奈米螺旋碳管、填鐵奈米碳管製程及機電元件研製--子計畫一: 奈米螺旋碳管、填鐵奈米碳管製程及機械性質量測, 主持人, 計畫期間: 2010/8/1~2013/7/31, 委託單位: 國科會。
(Synthesis of carbon nanocoils and Fe-filled carbon nanotube and their mechanical property measurements, period: 2010/8/1~2013/7/31, NSC)
3. 學術領域全面提升/工學院/機械工程領域提升分項計畫, 主持人, 計畫期間: 2009/1/1~2009/12/31, 委託單位: 教育部, 邁向頂尖大學計畫。
4. 奈米螺旋碳管合成及元件研製—總計畫: 奈米螺旋碳管合成及元件研製, 主持人, 計畫期間: 2007/8/1~2010/7/31, 委託單位: 國科會。
(Synthesis of Carbon Nanocoil and Development of Carbon Nanocoil Devices, project director, period: 2007/8/1~2010/7/31, NSC)
5. 奈米螺旋碳管合成及元件研製—子計畫一: 奈米螺旋碳管致動器之研製, 主持人, 計畫期間: 2007/8/1~2010/7/31, 委託單位: 國科會。
(Development of Carbon Nanocoil Actuator, project director, period: 2007/8/1~2010/7/31, NSC)
6. 奈米碳管應變感測器, 主持人, 計畫期間: 2006/8/1~2007/10/31, 委託單位: 國科會。
(Carbon Nanotube Strain Sensors, project director, period: 2006/8/1~2007/10/31)
7. 一維奈米碳管/線合成, 奈米複合結構及可調式 CMOS 奈米管振盪器研製—總計畫: 奈米

複合結構及可調式 CMOS，主持人，計畫期間：2004/8/1～2007/10/31，委託單位：國科會。

(1D Carbon Nanotube and Nanowire Synthesis, Nano-Composites Fabrication and Tunable CMOS Carbon Nanotube/Nanowire Oscillator: 2004/8/1～2007/10/31, NSC)

8. 一維奈米碳管/線合成，奈米複合結構及可調式 CMOS 奈米管振盪器研製—子計畫二：奈米碳管機電量子性能研究，主持人，計畫期間：2004/8/1～2007/10/31，委託單位：國科會。

(Carbon Nanotube/Nanowire Electromechanical Quantum Characterization, project director, period: 2004/8/1～2007/10/31, NSC)

9. 奈米液滴壓電致動產生器—總計畫：奈米液滴壓電致動產生器，主持人，計畫期間：2003/8/1～2006/7/31，委託單位：國科會。

(Nano-Droplet Generator Driven by Piezoelectric Actuator, project director, period: 2003/8/1～2006/7/31, NSC)

10. 奈米液滴壓電致動產生器—子計畫二：奈米液滴壓電致動產生器—製程、組裝與測試之研究，主持人，計畫期間：2003/8/1～2006/7/31，委託單位：國科會。

(Nano-Droplet Generator Driven by Piezoelectric Actuator-Subproject, project director, period: 2003/8/1～2006/7/31, NSC)

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成功大學，機械工程學士，1972

B.S. in Mechanical Engineering,
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清華大學，動力機械工程碩士，1974

M.S. in Mechanical Engineering,
National Tsing-Hua University, 1974

英國克蘭費德科技學院，應用電腦與
數學博士，1987

Ph.D. in Applied Computing and
Mathematics, Cranfield Institute of
Technology, England, 1987

研究專長 (Specialty) :

實體模型系統、計算幾何

Solids modeling, Computational geometry, Computer-aided design

期刊論文 (Journal Papers) :

1. Yi-Lung Tsai, Chun-Fong You, Jhen-Yang Lin and Kun-Yu Liu, “Knowledge-based Engineering for Process Planning and Die Design for Automotive Panels”, *Computer Aided Design and Application*, Vol. 7(1), pp.75-87, 2010 (EI).
2. Chun-Fong You, Yi-Lung Tsai, Kun-Yu Liu, Representation and similarity assessment in case-based process planning and die design for manufacturing automotive panels, *Int. J. Advance Manufacturing Technology*, Online first, 1433-3015 , 10.1007/s00170-010-2609-3 (Online), Vol. 51, pp 297–310, 2010 (SCI).
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8. Sheen, BT; You, CF, 2006, COMPUTER-AIDED DESIGN, Vol.38-6, pp.553-562, "Machining Feature Recognition and Tool-Path Generation for 3-Axis CNC Milling" (SCI).
9. You, CF; Chao, SN, 2006, CONCURRENT ENGINEERING-RESEARCH AND APPLICATIONS, Vol.14-4, pp.273-281, "Multilayer Architecture in Collaborative Environment" (SCI).
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國內會議論文 (Domestic Conference Papers) :

1. 陳正富、尤春風、王世衛， “汽車鈹金引伸模具參數設計系統,” 中國機械工程學會第二十五屆全國學術研討會,大葉大學,彰化, 97年11月21日~22日。
2. 劉昆育、尤春風、王世衛， “汽車鈹金剪切模具 3D 實體建構,” 中國機械工程學會第二十五屆全國學術研討會,大葉大學,彰化, 97年11月21日~22日。
3. 宋祐禎、尤春風、王世衛， “汽車鈹金模面建構的二次開發,” 中國機械工程學會第二十五屆全國學術研討會,大葉大學,彰化, 97年11月21日~22日。

專書 (Books) :

1. 尤春風，CATIA教育訓練手冊---機械零件篇，加樺國際有限公司，2006年10月
2. 尤春風，CATIA教育訓練手冊---曲面造形篇，加樺國際有限公司，2006年10月

研究計畫 (Research Projects) :

1. 分佈式平行計算應用於逆向工程的研究，主持人，計畫期間：96/08/01~98/07/31，委任單位：國科會。(Parallel Computing on the Reverse Engineering)
2. 汽車鈹金模具型面設計數位化技術，主持人，計畫期間：96/06/01~98/05/31，委任單位：維輪實業股份有限公司。
3. 3D 模具結構設計技術建構，主持人，計畫期間：96/06/01~98/05/31，委任單位：台灣開億工業股份有限公司。

4. 車身治夾具規劃、設計平台整合，主持人，計畫期間：96/01/01~97/12/31，委任單位：中華汽車工業股份有限公司。
5. 產品資料管理系統下的零件搜尋與比對，主持人，計畫期間：95/08/01~96/07/31，委任單位：國科會。(3D Part Retrieval in Product Data Management)

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研究專長 (Specialty) :

機構設計、智慧資產分析、科技競爭力分析

Creative Mechanism Design, Intellectual Resources Planning, Technological Competitive Analysis

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2. 陳達仁, 2009, “專利檢索與分析,” 智慧財產培訓學院教材 03, 第 3 版, 國立臺灣大學科技整合法律學研究所編印, 228 頁.
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學研究所編印, 138 頁.

得獎紀錄 (Honors) :

1. 2008 第十一屆全國機構與機器設計學術研討會最佳論文獎
2. 2006 第九屆全國機構與機器設計學術研討會最佳論文獎

研究計畫 (Research Projects) :

1. 超臨界流體萃取瀝青之美國專利分析, 99/01/15~99/12/31, 委託單位: 中科院。
2. 建構適合評估臺灣產業競爭力的創新專利指標, 98/08/01~100/07/31, 委託單位: 國科會。
3. 多自由度重力平衡機構之設計與應用, 98/08/01~101/07/31, 委託單位: 國科會。
4. 大專院校產學合作績效評量, 96/01/01~99/12/31, 委託單位: 高等教育評鑑中心。
5. 智慧財產專業人員培訓計畫, 95/05/01~99/12/31, 委託單位: 經濟部智慧財產局。
6. 齒輪機構之運動特徵分析與功能導向概念設計與應用, 96/08/01~99/07/31, 委託單位: 國科會。
7. 專利分析等技術服務, 96/01/01~96/12/31, 委託單位: 中科院、工研院、業界等。
8. 智慧財產價值評估指標之建立與分析(3/3), 96/04/01~97/03/31, 委託單位: 經濟部學界科專。
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研究專長 (Specialty) :

精密工程、致動器、感測器、醫學工程

Precision Engineering, Actuators, Sensors, Biomedical Engineering

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1. 微懸臂造型設計於多重物理量感測性能的研究探討主持人，計畫編號：NSC 99 - 2221 - E - 002 - 156 - ，計畫期間：2010/08/01~2011/07/31，委任單位：國科會。
2. 國家型學研合作研究計畫(中央研究院物理研究所奈米實驗室):以光像散機制為基礎之多功能原子力顯微鏡 (Astigmatism-based Multi-functional Atomic Force Microscopes) 計畫編號：NSC98-2120-M-001-007-CC2，共同主持人，計畫期間：09/08/01~12/07/31，委任單位：國科會。
3. 跨領域研究計畫:高速、大數值孔徑非球面干涉儀之設計、製作與應用，計畫編號：98-2627-E-008-001-，共同主持人，計畫期間：09/08/01~12/07/31，委任單位：國科會。
4. 扭轉撓性懸臂之設計與開發，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。
5. 三軸閉迴路奈米級定位致動系統之設計與開發(I)，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
6. 省電型電磁閥設計改良與性能之分析，主持人，計畫期間：07/09/01~08/03/31，委任單位：

所羅門企業股份有限公司。

7. 搖擺式開關設計參數與性能之分析探討，主持人，計畫期間：07/07/01~08/01/31，委任單位：崧騰企業股份有限公司。
8. 國家型學研合作研究計畫(中央研究院物理研究所奈米實驗室): 奈米級像散量測系統之開發，NSC 95-3114-P-001-008-MY3。子計畫一: 奈米級光學位移與角度量測系統之開發，共同主持人，計畫期間：07/01/01~09/12/31，委任單位：國科會學研合作研究計畫。
9. 自動化高速軋盒機開發，共同主持人，計畫期間：07/01/01~09/12/31，委任單位：國科會產學合作計畫。
10. 自動化高速軋盒機開發子計畫 C: 高速輸紙次系統性能優化設計，共同主持人，計畫期間：07/01/01~09/12/31，委任單位：國科會產學合作計畫。
11. 牙醫用手機高速主軸性能量測系統之設計開發(95-2221-E-002-134-)，主持人，計畫期間：06/08/01~07/07/31，委任單位：行政院國家科學委員會。
12. 液壓減振器設計參數之研究分析與運轉模擬，主持人，計畫期間：06/08/01~07/12/31，委任單位：丹普德(Damptek)有限公司。
13. 球型多軸自由度奈米級定位壓電致動器之設計開發(94-2212-E-002-063-)，主持人，計畫期間：05/08/01~06/07/31，委任單位：行政院國家科學委員會。
14. 運轉速度對自動化製造系統穩定性、精確度與能量傳遞之影響探討，主持人，計畫期間：05/12/01~06/11/30，委任單位：鴻海精密工業股份有限公司。
15. BGA 底座錫球焊點特性分析探討與壽命預測，主持人，計畫期間：05/11/01~06/10/31，委任單位：鴻海精密工業股份有限公司。
16. 牙醫用微型氣浮軸承之設計開發，主持人，計畫期間：05/01/01~05/12/31，委任單位：宗倬章先生教育基金會。

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教授

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成功大學，機械工程學士，1982

B.S. in Mechanical Engineering,
National Cheng-Kung University, 1982

成功大學，機械工程碩士，1984

M.S. in Mechanical Engineering,
National Cheng-Kung University, 1984

馬里蘭大學，機械工程博士，1991

Ph.D. in Mechanical Engineering,
University of Maryland, 1991

研究專長 (Specialty) :

機械固力、機構與機器設計、機電設計

Machine Mechanics, Mechanism and Machine Design, Mechatronics

期刊論文 (Journal Papers) :

1. T.Y. Wu, W.C. Tsai, and J.J. Lee “In-Plane Crushing Analysis of Cellular Materials Using Vector Form Intrinsic Finite Element,” Computers, Materials & Continua, 17(3), 2010. pp. 175-214. (SCI)
2. Jinn-Biau Sheu, Jyun-Jheng Huang, and Jyh-Jone Lee, “Kinematic Synthesis Of Tendon-Driven Robotic Manipulators using Singular Value Decomposition,” Robotica, Vol.28, pp.1-10, 2010. (SCI) (NSC 95-2221-E-002 -042 -MY2)
3. Jyh-J. Lee and Bin-H. Jan, “Design of Geneva mechanisms with curved slots for non-undercutting manufacturing”, Mechanism and Machine Theory, vol.44 , no.6 , pp1192 -1200 , 2009
4. Tung-Yueh Wu, Wen-Chang Tsai, Jyh-Jone Lee, “Dynamic elastic-plastic and large deflection analyses of frame structures using motion analysis of structures,” Thin-Walled Structures”, Thin-Walled Structures, vol.47 , no.11 , pp1177 -1190 , 11, 2009
5. Jyh-J. Lee and Bin-H. Jan, “Design of Geneva mechanisms with curved slots for non-undercutting manufacturing,” Mechanism and Machine Theory, 44(6), pp. 1192-1200. (2009) (SCI) (NSC 94- 2212- E-002 -026)
6. Tung-Yueh Wu, Jyh-Jone Lee, Edward C. Ting, “Motion analysis of structures (MAS) for flexible multibody systems: planar motion of solids,” Multibody System Dynamics, 20(3), pp. 197-221. (2008) (SCI)
7. J.-B. Sheu, S.-L. Hu and Jyh-J. Lee, “Kinematic Synthesis Of A Four-Link Mechanism With Rolling Contacts For Motion And Function Generation,” Mathematical and Computer Modelling, 48(5-6), pp. 805-817. (2008) (SCI) (NSC 93-2212-E-002-056).

8. Lee, J.J., Chen, D.Z., Pai, W.M. and Wu, T.Z, 2006, “On the Design of the Latch Mechanism for Wafer Containers in a SMIF Environment,” *J. of Mechanical Science and Technology*, 20(12), pp.2025-2033. (SCI)

國際會議論文 (International Conference Papers) :

1. Po-C. Lee and Jyh-J. Lee, “Forward Kinematics and Numerical Verification of Four Novel Parallel Manipulators with Schoenflies Motion,” The First IFToMM Asian Conference on Mechanism and Machine Science, October 21 - 25, 2010, Taipei, Taiwan
2. Lee, P. -C., Lee, J. -J., and Lee, C. -C, “Four Novel Pick-and-Place Isoconstrained Manipulators and Their Inverse Kinematics,” *Proc. ASME 2010 Int. Design. Engg. Tech. Conf. & Comp. Inf. Engg. Conf.*, IDETC2010, Aug.15-18, Montreal, Quebec, Canada, 2010.
3. J. B. Shu and Jyh-Jone Lee, “Synthesis of Tendon-Driven Manipulators with High Fault Tolerance”, IEEE International Conference on Systems, Man, and Cybernetics, 10, 2009
4. Wen-Chien Hsu, Jyh-Jone Lee, “Conceptual Design for Underactuated Passively Adaptive Finger Mechanisms”, CDROM, First IFToMM International Symposium on Robotics and Mechatronics, Hanoi, Vietnam, Sep., 2009
5. Wei-Chieh Su and Jyh-Jone Lee, “Fuzzy Control of a Tendon-Driven Manipulator with Flexible Tendons,” 17th CISM-IFTToMM Symposium on Robot Design, Dynamics, and Control, Tokyo, Japan, 2008.
6. Home-Che Yen, Jyh-J. Lee, and Min-Shin Chen, “Control for Tendon-Driven Manipulators with Flexible Tendons Using Artificial Potential Field Approach,” Proceedings of 12th IFToMM World Congress, Besançon (France), June18-21, 2007.
7. Yu-Tin Lin and Jyh-J. Lee, “Structural Synthesis of Compliant Translational Mechanisms,” Proceedings of 12th IFToMM World Congress, Besançon (France), June18-21, 2007.

國內會議論文 (Domestic Conference Papers) :

1. 吳介民, 李志中, “撓性旋轉接頭之最佳化設計”, 第 11 屆全國機構與機器設計學術研討會, 11, 2009
2. 林耀馨, 吳宗明, 李志中 “應用田口方法於晶圓盒門體門鎖機構之潔淨度分析”, 中國機械工程學會第二十六屆全國學術研討會論文集, 11, 2009
3. 蔡文昌、吳東岳、李志中, “以運動解析法分析撓性機構含間隙接頭問題”, 中華民國力學學會第三十二屆力學會議, 嘉義, November 28-29, 2008.
4. 蔡文昌、吳東岳、李志中, “運動解析法在平面剛架結構彈塑性大變形之應用”, 中華民國力學學會第三十二屆力學會議, 嘉義, November 28-29, 2008.
5. 黃鈞正、李志中, “奇異值分解應用於腱驅動機械臂之構造合成”, 中國機械工程學會第二十四屆全國學術研討會論文集, November 23-24, 2007.
6. 詹秉衡、李志中, “曲槽日內瓦輪之過切研究”, 中華民國第 10 屆機構與機器設計學術研

討會，November 30, 2007.

7. 林俞廷、李志中，“撓性旋轉接頭之設計”，中華民國第9屆機構與機器設計學術研討會暨2006年海峽兩岸機構學學術研討會，November 10, 2006.

專利 (Patents) :

1. Pai, W.M, Chen, D.Z., Lee, J.J., Wu, T.M., and Lin, H.C., “Workpiece Holder for Clean Container,” US Utility Patent 7,032,758, 25/4/06~19/2/24
2. Pai, W.M, Chen, D.Z., Wu, T.M., Lee, J.J., and Lin, H.C., “Latching Mechanism for Locking/Unlocking the Door of a Wafer,” US Utility Patent 6,902,063, 7/6/05~30/12/22

得獎紀錄 (Honors) :

1. 最佳會議論文獎，中華民國第10屆機構與機器設計學術研討會，2007年11月。
2. 指導碩士學生獲優等碩士論文獎，中華民國第9屆機構與機器設計學術研討會，2006。
3. 第三屆「上銀科技機械碩士論文獎」佳作獎，2006。

研究計畫 (Research Projects) :

1. 不足驅動自適應手指之設計與雛型製造，主持人，計畫期間：10/08/01~11/07/31，委任單位：國科會。(Design and Prototyping of an underactuated passively adaptive mechanical finger)
2. 運動中平面連桿機構機件斷裂行為之研究，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。
3. 人工肌肉驅動機器人之研究與其實驗平台建構，主持人，計畫期間：06/08/01~08/07/31，委任單位：國科會。
(Study of Robotic Manipulators Using Artificial Muscles and Establishment of its Experimental Infrastructure)
4. 具曲槽日內瓦機構之設計研究與實作驗證，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
(Study on the Design of Geneva Mechanisms with Curved Slots and its Experimental Verification)

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副教授

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清華大學，動力機械學士，1976

B.S. in Power Mechanical Engineering,
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M.S. in Mechanical Engineering,
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研究專長 (Specialty) :

結構分析、最佳化設計、電腦輔助設計、專家系統

Structural Analysis, Optimum Design, CAD, Expert System

期刊論文 (Journal Papers) :

1. Tien-Tung Chung, Li-Chang Chuang, Jhe-Wei Lee, and Shun-Hsiung Hsu, "Solid model reconstruction from triangular meshes," Proc. SPIE, vol.7546, 754610-1, Feb. 2010. (EI)
2. Tien-Tung Chung, Chin-Te Lin, Chung-Yun Lee, Kuang-Chao Fan, and Shou-Heng Chen, "Optimum Design of an 8x8 Optical Switch with Thermal Compensated Mechanisms", World Academy of Science, Engineering and Technology, vol.53 , pp134 -141 , 05, 2009. (EI)
3. Shou-Heng Chen, Kuang-Chao Fan, Tien-Tung Chung, and Yao-Joe Joseph Yang, "A NxN Architecture for 2-D Mirror-Type Optical Switches", Journal of Lightwave Technology, vol.27 , no.14 , pp2843 -2851 , 07, 2009. (SCI)
4. Kuang-Chao Fan, Wu-Lang Lin, Li-Hung Chiang, Shou-Heng Chen, Tien-Tung Chung, and Yao-Joe Yang, "A 2x2 Mechanical Optical Switch With a Thin MEMS Mirror", Journal of Lightwave Technology, vol.27 , no.9 , pp1155 -1161 , 05, 2009. (SCI)
5. Chao-Yaug Liao, Jean-Claude Léon, Cédric Masclet, Michel Bouriau, Patrice L. Baldeck, and Tien-Tung Chung, "Product Model Preparation and Processing for Micromanufacturing," Journal of Computing and Information Science in Engineering(JCISE), Vol. 9, No. 5, Jun. 2008. (SCI)
6. Chao-Yaug Liao, Michel Bouriau, Patrice L. Baldeck, Jean-Claude Léon, Cédric Masclet, Tien-Tung Chung, "Two-Dimensional Slicing Method to Speed up the Fabrication of Microobjects Based on Two-Photon Polymerization," APPLIED PHYSICS LETTERS, 91, Art. No. 033108, July 2007. (SCI)

7. Tien-Tung Chung and Chia-Sheng Shih, "Structural Optimization Using Genetic Algorithms with Fuzzy Rule-Based Systems," Journal of the Chinese Society of Mechanical Engineers, Vol.28, No.5, pp.523~532, Dec. 2007. (EI)
8. 鍾添東、黃俊碩, "汽車福祉椅之設計與分析", 機械月刊第三十三卷第十二期, pp.文 68-88, 2007年12月。
9. Tien-Tung Chung, Chen-Cheng Lee, Kuang-Chao Fan, Wu-Lang Lin, Jian-Gou Peng and Hsu Fan, "A Miniature 1x2 Mechanical Optical Switch with Anti-Thermal Design," J. Micromech. Microeng., 16, pp.1579-1586, Aug. 2006.(SCI)
10. Wu-Lang Lin, Kuang-Chao Fan, Li-Hung Chiang, Yao-Joe Yang, Wen-Cheng Kuo and Tien-Tung Chung, "A Novel Micro/Nano 1x4 Mechanical Optical Switch," J. Micromech. Microeng. 16, pp.1408-1415, Jul. 2006. (SCI)
11. Tien-Tung Chung, Chen-Cheng Lee and Kuang-Chao Fan, "Optimum Design of a 1x2 Mechanical Optical Switch," Struct. Multidisc. Optim., no.3, vol.31, pp.229~240 Mar. 2006.(SCI)

國際會議論文 (International Conference Papers) :

1. Tien-Tung Chung, Wei-Sheng Syu, "A multiple three-step color phase-shifting method for 3D shape measurement", International Symposium on Precision Mechanical Measurements(ISPMM2008), 01, 2010
2. F.C. Wang, M.F. Hong, T.T. Chung and J.Y. Yen, "Vibration Isolation of a Full Electron Beam Projection Lithography System", 22nd International Microprocesses and Nanotechnology Conference (MNC 2009), 11, 2009
3. Tien-Tung Chung, Chung-Gin Fu, Tsang-Lin Hsu, Heng-I Lin, Rong-Feng Ye, Xuan-Xun Lin, "Design of a New Liquid Pump with Claw Rotors", International Conference on Advances in Mechanical Engineering (ICAME 2009), 06, 2009
4. Tien-Tung Chung, Tzu-Yang Chen, Chieh-Jen Yang and Jen-Ta Hsu, "Baking Strategies of an Ultra High Vacuum System for E-beam Lithography", 2009 CACS International Automatic Control Conference (CACS/iACC 2009), 11, 2009
5. Tien-Tung Chung, Chin-Te Lin, Hsu Fan, "Design and Analysis of a 4x4 Optical Switch," The 11th International Conference on Mechatronics Technology(ICMT 2007), November 5-9 2007, Ulsan, Korea, pp.405~409. (Best paper award)

國內會議論文 (Domestic Conference Papers) :

1. 鍾添東、廖昭仰、賴宗楷, "三維物品外形重建與貼圖之自動化研究", 中國機械工程學會第 21屆全國學術, 11, 2009

2. 鍾添東、范栩、林錦德，“結構最佳化遺傳演算之類神經網路近似法”，論文編號：D19，中華民國力學學會第三十一屆全國力學會議，2007/12/21~22，高雄縣義守大學。
3. 鍾添東、張耀仁、林錦德，“結構最佳化設計之準二次兩點保守近似法”，中國機械工程學會第二十四屆全國學術研討會論文集，2007/11/23~24，桃園中壢中原大學，論文編號：C03-0026，pp.2560~2565。
4. 鍾添東、徐偉盛，“三維外形量測之N步彩色相位移法”，中國機械工程學會第二十三屆全國學術研討會，2006年11月24~25日，台南縣永康市崑山科技大學，論文編號：C9-023。
5. 鍾添東、黃文昭，“三維外形量測之非線性數位條紋誤差校正”，中國機械工程學會第二十三屆全國學術研討會，2006年11月24~25日，台南縣永康市崑山科技大學，論文編號：C9-024。
6. 鍾添東、黃俊碩，“汽車福祉椅升降機之設計與分析”，中國機械工程學會第二十三屆全國學術研討會，2006年11月24~25日，台南縣永康市崑山科技大學，論文編號：C12-018。
7. 鍾添東、彭建國、李臻誠，“結構最佳化遺傳演算之多項式近似法”，中華民國力學學會第三十屆全國力學會議，2006年12月15~16日，台灣彰化大業大學，論文編號：D4-3。
8. 鍾添東、施嘉勝，“具模糊法則之多目標最佳化進化演算法”，中華民國力學學會第三十屆全國力學會議，2006年12月15~16日，台灣彰化大業大學，論文編號：E7-4。

專利 (Patents)：

1. Kuang-Chao Fan, Shou-Heng Chen, Tien-Tung Chung, Yao-Joe Yang, “Multi-port optical switch and method of arranging the same“, United States Patent US 7,546,006, Date of patent: June 9, 2009.
2. Tien-Tung Chung, Yun-Chin Su, Chun-Shuo Huang, “Detachable wheelchair“, United States Patent US 7,537,237, Date of patent: May 26, 2009.
3. Kuang-Chao Fan, Wu-Lang Lin, Tien-Tung Chung, Yao-Joe Yang, “2x2 Mechanical optical switch,” United States Patent US 7,444,043, Date of patent: Oct. 28, 2008.
4. Tien-Tung Chung, Heng-I Lin, Tsang-Lin Hsu, Chin-Te Lin, “Rotary positive displacement control system and apparatus”, United States Patent US 7,341,042, Date of patent: March 11, 2008.
5. 鍾添東、林恒毅，“爪式轉子之三爪及三爪以上設計方法”，中華民國發明第 200724774 號專利，公告日期：2007/07/01。
6. 鍾添東、林恒毅，“爪式轉子之單爪設計方法”，中華民國發明第 200724773 號專利，公告日期：2007/07/01。
7. 鍾添東、林恒毅，“爪式轉子之雙爪設計方法”，中華民國發明第 200724772 號專利，公告日期：2007/07/01。
8. Tien-Tung Chung, Heng-I Lin, Feng-Ming Chuang, “Double-Lobe Type Rotor Design Process”, United States Patent US 7,255,545, Date of patent: Aug.14, 2007.
9. 鍾添東、林恒毅、莊豐銘，“爪式轉子設計方法”，中華民國發明第 I280314 號專利，公告

日期：2007/05/01。

10. 鍾添東、林恒毅，“爪式轉子之葉片設計方法”，中華民國發明第 I273174 號專利，公告日期：2007/02/11。
11. 楊耀州、鍾添東、范光照、廖伯亭，“光開關”，中華民國新型第 M298130 號專利，公告日期：2006/09/21。(NSC 92-2212-E-002-083)
12. Tien-Tung Chung and Hsiu-Chu Shen, “Rotating Car Seat Mechanism”, United States Patent US 6,981,746, Date of patent: Jan. 3, 2006
13. 鍾添東、蘇運金、黃俊碩，“可拆卸式輪椅”，中華民國新型第 M297738 號專利，申請日期：2006/01/18，公告日期：2006/09/21。

得獎紀錄 (Honors)：

1. 參加 2007/11/05~09 於韓國蔚山舉行之 ICMT2007(The 11th International Conference on Mechatronics Technology) 研討會，所發表之論文：「Tien-Tung Chung, Chin-Te Lin, Hsu Fan, “Design and Analysis of a 4x4 Optical Switch,” The 11th International Conference on Mechatronics Technology(ICMT 2007), November 5-9 2007, Ulsan, Korea, pp.405~409.」獲得最佳論文獎(Best paper award)。

研究計畫 (Research Projects)：

1. 多電子束平行掃瞄微影系統設計-子計畫二：多電子束微影系統腔體結構之設計與分析(III)」，主持人，計畫期間：08/08/01~09/10/31，委任單位：行政院國家科學委員會。
2. 微/奈米技術於 N x N 光開關系統之發展—子計畫一：NxN 機械式光開關之研製(3/3)(96-2221-E-002-062-)，主持人，計畫期間：07/08/01~08/07/31，委任單位：行政院國家科學委員會。
3. 可轉換為汽車乘客座椅的輪椅之設計與分析(95-2622-E-002-026-CC3)，主持人，計畫期間：06/11/01~07/12/30，委任單位：行政院國家科學委員會。
4. 適用於飛機上排爆機器人之設計與研發(95-3114-E-002-003-)，主持人，計畫期間：06/11/01~07/12/30，委任單位：行政院國家科學委員會。
5. 多電子束微影系統設計—子計畫一：多電子束微影系統腔體結構之設計與分析(I)(95-2221-E-002-434-)，共同主持人，計畫期間：06/08/01~07/10/31，委任單位：行政院國家科學委員會。
6. 微/奈米技術於 N x N 光開關系統之發展—子計畫一：NxN 機械式光開關之研製(2/3)(95-2221-E-002-238-)，主持人，計畫期間：06/08/01~07/10/31，委任單位：行政院國家科學委員會。
7. 小汽車前座升降福祉椅之設計與分析(94-2622-E-002-021-CC3)，主持人，計畫期間：05/11/01~06/12/31，委任單位：行政院國家科學委員會。
8. 微/奈米技術於 N x N 光開關系統之發展—子計畫一：NxN 機械式光開關之研製

(1/3)(94-2212-E-002-059-), 主持人, 計畫期間: 05/08/01~06/07/31, 委任單位: 行政院國家科學委員會。

9. 殘障用小汽車前座旋轉座椅之設計與分析(93-2622-E-002-027-CC3), 主持人, 計畫期間: 04/11/01~05/10/31, 委任單位: 行政院國家科學委員會。

10. 微/奈米技術於光開關系統與元件之發展—子計畫一: 機械式光開關之研製(2/2)(93-2212-E-002-022-), 主持人, 計畫期間: 04/08/01~05/07/31, 委任單位: 行政院國家科學委員會。

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臺灣大學，機械工程學士，1979

B.S. in Mechanical Engineering,
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M.S. in Mechanical Engineering,
Rutgers University, 1983

羅格斯大學，機械工程博士，1986

Ph.D. in Mechanical, Engineering,
Rutgers University, 1986

研究專長 (Specialty) :

機構設計與分析、車輛工程學、創造力與工程教育

Mechanism Design and Analysis, Vehicle Engineering, Creativity and Engineering Education

期刊論文 (Journal Papers) :

1. Liu, Tyng, and Lin, Ching-shuei, 2008, "Adjustable higher-order dwell linkage-type mechanisms," Machine Design and Research, Vol. 24, pp. 139-141. (EI).

國際會議論文 (International Conference Papers) :

1. Hung-Kuo Su, and Tyng Liu, "Design and Analysis of Hybrid Power Systems with Variable Inertia Flywheel," presented in EVS-25, The 25th World Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhibition, Shenzhen, China, Nov. 5-9, 2010.
2. I-Ming Chen, and Tyng Liu, "Design and Analysis of Hybrid Systems for Scooters," presented in the First IFToMM Asian Conference on Mechanism and Machine Science, Taipei, Taiwan, October 21 - 25, 2010.
3. Wen-Fang Wu, Tyng Liu, and Chih-Hsien Wu, "Failure Modes and Reliability Analysis of Belt-Type CVT Systems for Scooters," presented in the 2005 SAE World Congress, 2005 年 4 月 11-14 日, paper No. 05M-421, Detroit, U.S.A. ◦

國內會議論文 (Domestic Conference Papers) :

1. 梁志明、劉 霆，輪內馬達懸吊系統之分析與設計，中華民國第十五屆車輛工程學術研討

- 會，南台科技大學，台灣台南，2010年11月。(最佳論文獎)
2. 江承舜、梁志明、邱文傑、蘇洪統、葉智榮、劉 霆，電動後輪轉向機構設計，中華民國第十四屆車輛工程學術研討會，虎尾科技大學，台灣雲林，2009年10月。(最佳論文獎)
 3. 陳昇名、劉 霆，雙動離合器式混合動力系統之分析與設計，第十一屆全國機構與機器設計學術研討會，明新科技大學，台灣新竹，2008年11月14日。
 4. 吳建欣、劉霆，後輪多連桿式懸吊之轉向機構設計，中華民國第十三屆車輛工程學術研討會，明志科技大學，台灣台北，2008年10月31日。
 5. 陳昱達、劉 霆，後輪轉向對車輛穩態轉向行為之影響分析，中華民國第十二屆車輛工程學術研討會，民國96年11月18日，屏東科技大學，屏東。
 6. 郭仲軒、劉 霆，後輪操控對抑止車輛翻覆之影響分析，中華民國第十二屆車輛工程學術研討會，民國96年11月18日，屏東科技大學，屏東。
 7. 鄭代立、劉 霆，線驅動平台之張力調控與軌跡規劃，第九屆全國機構與機器設計學術研討會暨2006年海峽兩岸機構學學術研討會，2006年11月10~11日，正修科技大學，高雄。
 8. 楊智麟、劉 霆，簧下質量對車輛動態性能影響之分析，中華民國第十一屆車輛工程學術研討會，民國95年11月18日，大葉大學，彰化。

專利 (Patents) :

1. 柴昌維、林英隆、莊承哲、劉霆，一種可坐、立、臥及昇降之床椅機構，中華民國新型專利 I 258368，94年3月2日至114年3月2日
2. 溫展雄、黃程偉、李岳樺、劉正良、尤春風、劉霆，圓柱件之直線及迴轉輸送機構，中華民國新型專利 012207，公告日 2004/05/21

研究計畫 (Research Projects) :

1. 混合動力機車創新動力系統之研發，主持人，計畫期間：07/07/01~07/06/30，委任單位：巨獅科技。
2. 第五屆全國高中職智慧鐵人創意競賽及第3屆國際邀請賽—北區初賽，主持人，計畫期間：07/05/01~07/10/31，委任單位：教育部。
3. 三自由度行星齒輪組之理念設計，主持人，計畫期間：07/01/01~07/12/31，委任單位：宗偉章基金會。
4. 太陽能燃料電池混合動力直接驅動車之研發與展示—子計畫二：太陽能燃料電池混合動力車動力、轉向與懸吊系統之完全整合技術研發(3/3)(95-2218-E-002-019-)，主持人，計畫期間：06/08/01~07/07/31，委任單位：行政院國家科學委員會。
5. 工程及科技教育認證先導型計畫(II)，共同主持人，計畫期間：05/01/01~05/12/31，委任單位：教育部。
6. 太陽能燃料電池混合動力直接驅動車之研發與展示—子計畫二：太陽能燃料電池混合動力

- 車動力、轉向與懸吊系統之完全整合技術研發(2/3)(94-2218-E-002-051-), 主持人, 計畫期間: 05/08/01~06/07/31, 委任單位: 行政院國家科學委員會。
7. 全國大學校院創意實作競賽之探討與規劃計畫(94-2515-S-002-002-), 主持人, 計畫期間: 05/06/01~06/02/28, 委任單位: 行政院國家科學委員會。
 8. 工程及科技教育認證先導型計畫, 共同主持人, 計畫期間: 04/01/01~04/12/31, 委任單位: 教育部。
 9. 太陽能燃料電池混合動力直接驅動車之研發與展示—子計畫二: 太陽能燃料電池混合動力車動力、轉向與懸吊系統之完全整合技術研發(1/3)(93-2218-E-002-132-), 主持人, 計畫期間: 04/08/01~05/07/31, 委任單位: 行政院國家科學委員會。
 10. 腱驅動機構在醫療輔助機器人之研發(93-2213-E-252-009-), 共同主持人, 計畫期間: 04/08/01~05/07/31, 委任單位: 行政院國家科學委員會。

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研究專長 (Specialty) :

(1)生物微機電系統、(2)創新設計、(3)人體工學產品

(1)Bio-MicroElectroMechanical Systems (Bio-MEMS), (2)Innovation Design,
(3)Products for Ergonomics

期刊論文 (Journal Papers) :

1. Han-Ming Chen, Chun-Tong Leung, 2007, "The Effect on Forearm and Shoulder Muscle Activity in Using Different Slanted Computer Mice," Clinical Biomechanics, Vol.22, No.5, pp.518-523. (2007 SCI Impact Factor 1.642)
2. Han-Ming Chen, Tzon-Han Lin, 2006, "An Algorithm to Build Convex Hulls for 3-D Objects," Journal of The Chinese Institute of Engineers, Vol.29, No.6, pp.945-952. (2006 SCI Impact Factor : 0.190)

研究計畫 (Research Projects) :

1. 以 20 個節點的網格對脛骨做有限元素分析(95-S-A05)，主持人，計畫期間：06/01/01~06/12/31，委任單位：宗倬章先生教育基金會。
2. 三維物件之凸殼、最小包覆方盒與最佳堆疊(NSC 93-2212-E-002-061)，主持人，計畫期間：04/08/01~05/07/31，委任單位：國科會。

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State University, Ames, 1993

愛荷華州立大學，機械工程博士，1997

Ph.D. in Mechanical Engineering, Iowa
State University, Ames, 1997

研究專長 (Specialty) :

自動化設計、虛擬實境、擴充實境、電腦輔助設計、人機介面、穩健設計、產品生命週期設計、產品裝配/ 拆卸序列規劃、產品環保設計、產品製造設計、科技在教育上的應用

Design Automation, Virtual Reality, Augmented Reality, Computer-Aided Design, Human-Computer Interaction, Robust Design, Product Life-Cycle Design, Assembly/Disassembly Sequence Planning, Design for Environment, Design for Manufacturing, Technology in Education

期刊論文 (Journal Papers) :

1. **Smith, S.***, & Fu, S. H. (April 2011). The relationships between automobile head-up display presentation images and drivers' Kansei. *Displays*, 32(2), 58-68. (5-Year I.F. = 1.277; Rank 24/71 = 33.8 % in Optics)
2. **Smith, S.***, & Chen, W. H. (January 2011). Rule-based recursive selective disassembly sequence planning for green design. *Advanced Engineering Informatics*, 25(1), 77-87. (5-Year I.F. = 2.311; Rank 6/79 = 7.6% in Engineering, multidisciplinary)
3. **Smith, S.***, & Yen, C. C. (December 2010). Green product design through product modularization using atomic theory. *Robotics and Computer Integrated Manufacturing*, 26(6), 790-798. (5-Year I.F. = 1.928; Rank 6/38 = 15.8% in Engineering, manufacturing)
4. Lu, Y., & **Smith, S.*** (June 2010). Augmented reality e-commerce system: a case study. *Transactions of the ASME, Journal of Computing and Information Science in Engineering*, 10(2), 021005-1-5. (5-Year I.F. = 1.195; Rank 22/38 = 57.9% in Engineering, manufacturing)
5. Smith, S., & Saunders, K. P. (December, 2009). Virtual reality for future workforce preparation. *Computer Applications in Engineering Education*. 17(4), 429-434.

6. Lu, Y., & Smith, S. (June 2009). GPU-based real-time occlusion in a CAVE-based augmented reality environment. *Transactions of the ASME, Journal of Computing and Information Science in Engineering*, 9(2), 024501-1-4.
7. Smith, S., & Ericson, E. (June 2009). Using immersive game-based virtual reality to teach fire safety skills to children”. *Virtual Reality*, **13(2)**, 87-99.
8. Zhang, J., & Smith, S. (September, 2009). Shape similarity matching with octree representations. *Transactions of the ASME, Journal of Computing and Information Science in Engineering*. 9(3), 034503-1-5.
9. Pan, C., & Smith, S. (2008), “Study the effectiveness of 3D stereo vision systems for improving visualization skills in technical graphics education,” *Computer Applications in Engineering Education*, Vol. 16, No. 4, pp. 256-267.
10. Smith, S., Saunders, K. P., Green, T., Peterson N., Antonenko, P.D., Thompson, A. D. (November, 2007), “Experiences in Using Virtual Reality in Design and Graphics Classroom,” *International Journal of Engineering Education*, 23(6), 1192-1198.
11. Lu, Y., & Smith, S. (December 2006), “A Comprehensive Tool for Recovering 3D Models from 2D Photos with Wide Baselines,” *Transactions of The ASME, Journal of Computing and Information Science in Engineering*, 6(4), 372-380. (SCI)
12. Pan, C., & Smith, S. (November 2006), “A Case Study: the Impact of Assembly Reorientations on Assembly Time,” *International Journal of Production Research*, 44(21), 4569-4585. (SCI)
13. Pan, C., Smith, S., & Smith, G. C. (December 2006), “Automatic Assembly Sequence Planning from STEP-CAD Files,” *International Journal of Computer Integrated Manufacturing*, 19(8), 775-783. (SCI)
14. Shen, Z., & Smith, S. (February 2006), “Optimizing the Functional Design and Life Cycle Cost of Mechanical Systems Using Genetic Algorithms,” *International Journal of Advanced Manufacturing Technology* (also appeared in the *Transactions of NAMRI/SME*, Volume XXXII, 2004, pp. 295-306), 27(11-12), 1051-1057. (SCI)

國際會議論文 (International Conference Papers) :

1. Chang, W.C., & **Smith, S.** (December 2010). A prediction model for continuous product shape feature parameters and consumers’ Kansei. *MCP-AP 2010, An International Conference on Mass Customization and Personalization*, National Taiwan University of Science and Technology, Taipei.
2. Liu, Y.C., & **Smith, S.** (December 2010). Customer-centered product design and competitors’ analysis using fuzzy hierarchical QFD. *MCP-AP 2010, An International Conference on Mass Customization and Personalization*, National Taiwan University of Science and Technology, Taipei.

3. **Smith, S.**, & Chen, W.T. (November 2010). Optimizing product configurations for green product design. *Going Green – CARE INNOVATION 2010*, Vienna, Austria.
4. Smith, S. & Chen, W.T. (December 7-9, 2009), A Method for Redesign and Optimization of Product Spatial Configuration, *Eco-Design 2009, 6th International Symposium on Environmentally Conscious Design and Inverse Manufacturing*, Sapporo, Japan.
5. Smith, S. & Fu, S.H. (August 30-September 2, 2009), Factor Analysis Of Head-Up Display Presentation Images, *Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, San Diego, California, paper number: DETC2009-87174.
6. Yen, C.C.& Smith, S. (August 30-September 2, 2009), Product Modular Design Using Atomic Theory, *Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, San Diego, California, paper number: **DETC2009-87122**.
7. Tu, Y.T. & Smith, S. (August 30-September 2, 2009), Real-time face tracking system for augmented reality, *Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, San Diego, California, paper number: **DETC2009-87684**.
8. Smith, S. & Chen, W.H. (July 20-24, 2009), Rule-Based Recursive Selective Disassembly Sequence Planning for Green Design, *Proceedings of the 16th ISPE International Conference on Concurrent Engineering*, Taipei, Taiwan, pp. 291-302.
9. Shen, Y.T., & Smith, S. (July 20-24, 2009), Product Redesign using TRIZ and Contradictive Information from the Taguchi Method, *Proceedings of the 16th ISPE International Conference on Concurrent Engineering*, Taipei, Taiwan, pp.487-497.
10. Yen, C. C. & Smith, S. (March 21, 2009), 利用原子理論於產品綠色設計. 2009 Symposium on Sustainable Products and Industrial Management, 2009 永續性產品與產業管理研討會, 國立成功大學, A4-3.
11. Twu, E.T., & Smith, S. (January 19-20, 2009), Virtual Fitting Room. 智慧、優質、好生活, 「智慧生活科技區域整合中心計畫」暨 「前瞻優質生活環境計畫」聯合成果發表會論文集, 國立台灣大學應用力學研究所, pp. 125-128.
12. Taylor, T., Smith, S., and Palmerius, K., (August 3-6, 2008), A Virtual Harp for Therapy in an Augmented Reality Environment, *Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Brooklyn, New York, paper number: DETC2008-50034.
13. Ericson, E., and Smith, S. (March 17 – 19, 2008). Using immersive virtual environments for realistic life-size fire prevention and safety training for children. The Third IASTED International Conference on Human-Computer Interaction, IASTED-HCI 2008, paper Number 611-053, Innsbruck, Austria.

14. Lu, Y., & Smith, S. (September 4-9, 2007), "GPU-Based Real-Time Occlusion in a CAVE-Based Augmented Reality Environment," ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, Las Vegas, Nevada, paper number: DETC2007-35462.
15. Taylor, T., Smith, S., & Shu, D. (September 4-9, 2007), "A Virtual Harp with Physical String Vibrations in an Augmented Reality Environment," ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, Las Vegas, Nevada, paper number: DETC2007-35408.
16. Lu, Y., & Smith, S. (July 22-27, 2007), "Augmented Reality E-Commerce Assistant System: Trying While Shopping," 12th International Conference on Human-Computer Interaction, Beijing International Convention Center, Beijing, P.R. China, paper number LNCS 4551-0643. Human Computer Interaction, Part II, Lecture Notes in Computer Science, 4551, 643-652.
17. Zhang, J., & Smith, S. (September 10-13, 2006), "Shape Similarity Matching with Octree Representations," ASME 2006 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, Philadelphia, PA, paper number: DETC2006-99397.
18. Lu, Y. & Smith, S., "Augmented Reality E-commerce Assistant System: Designing While Shopping," (September 10-13, 2006). ASME 2006 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, Philadelphia, PA, paper number: DETC2006-99401.
19. Pan, C., & Smith, S. (June 18 - 21, 2006), "A Study of 3D Stereo Vision Systems for Improving Visualization Skills," Proceedings of the 2006 American Society for Engineering Education Annual Conference & Exposition, Chicago, IL, paper number: 2006-706.

專書 (Books) :

1. Chou, S-Y, Trappey, A., Pokojski, J., & Smith, S. (eds), Global Perspective for Competitive Enterprise, Economy and Ecology, Springer London, ISBN 184882761X, 2009.

專書章節 (Book Chapter) :

1. **Smith, S.** (2011). Integrating low-cost virtual reality into engineering design curricula (Chapter 27). *Virtual Reality*, edited by Jae-Jin Kim, Published by InTech Education and Publishing, 551-558, ISBN 978-953-307-518-1.
2. **Smith, S.**, & Fu, S. H. (2010). A study on the relationships between drivers' emotion and hud presentation image designs (Chapter 5). *Emotional Engineering*, edited by Shuichi Fukuda, Published by Springer London, 87-101, ISBN 978-1-84996-422-7.

3. Taylor, T., & **Smith, S.** (2010). A virtual harp for therapy in an augmented reality environment (Chapter 4). *The Horizon of Virtual and Augmented Reality*, edited by Soha Maad, Published by InTech Education and Publishing, 57-72, ISBN 978-953-7619-69-5.
4. Lu, Y., & **Smith, S.** (2008). Augmented reality e-commerce: how the technology benefits people's lives (Chapter 14). *Human Computer Interaction*, edited by Ioannis Pavlidis, Published by InTech Education and Publishing, 215-238, ISBN 978-953-7619-19-0.

得獎紀錄 (Honors) :

1. Best Paper Award, 2010 永續性產品與產業管理研討會,國立雲林科技大學 (2010)
2. The 2005 Editor's Award, Outstanding Paper in the ASEE Engineering Design Graphics Journal

研究計畫 (Research Projects) :

1. 以觸覺技術及擴充實境為人機介面的電子商務系統，主持人，計畫期間：08/08/01~11/07/31，委任單位：嚴行政院國家科學委員會。
Development of a Haptic Augmented Reality E-commerce System
2. 環境意識導向的產品拆卸最佳化設計，主持人，計畫期間：08/08/01~10/07/31，委任單位：嚴行政院國家科學委員會。
Environmentally Conscious Optimal Product Disassembly Design
3. 擋風玻璃圖像顯現之研究，主持人，計畫期間：09/01/01~09/12/31，委任單位：嚴慶齡工業發展基金會。
(A Study of Image Display on Auto Windshields (II))
4. 為環境意識的產品拆卸優化產品結構，主持人，計畫期間：08/01/01~08/12/31，委任單位：嚴行政院國家科學委員會。
(Optimizing Product Configuration for Environmentally Conscious Disassembly)
5. 擋風玻璃圖像顯現之研究，主持人，計畫期間：08/01/01~08/12/31，委任單位：嚴慶齡工業發展基金會。
(A Study of Image Display on Auto Windshields (I))

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Ph.D. in Materials Sci. & Eng.,
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研究專長 (Specialty) :

機械材料、金屬熱處理、形狀記憶合金、介金屬化合物、輕金屬

Metallic Alloys, Heat Treatments of Metals, Shape Memory Alloys, Intermetallics, Light Alloys

期刊論文 (Journal Papers) :

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42. T. J. Ho, S. K. Wu* and K. H. Lin, 2010, “Two-Stage Martensitic Transformation in Thermally-Cycled Ti_{40.5}Ni_{49.5}Hf₁₀ Shape Memory Alloy”, *Materials Transactions*, Vol. 51, No.4, 679-684, Japan. (SCI) (NSC97-2221-E002-035-MY3)
43. S. H. Chang, S. K. Wu* and L. M. Wu, 2010, “Shape Memory Characteristics of As-Spun and Annealed Ti₅₁Ni₄₉ Crystalline Ribbons”, *Intermetallics* Vol. 18, No.5, 965-971, USA. (SCI) (NSC97-2221-E002-035-MY3)
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53. R. K. Shiue, S. K. Wu* and I. H. Li, 2011, "Infrared Brazing of Fe_3Al Intermetallic Compound Using Gold-based Braze Alloy", *Gold Bulletin* (In Press), England. (SCI) (NSC97-2221-E002-037-MY3)

國際會議論文 (International Conference Papers) :

1. S.H. Chang, **S.K. Wu** and K.N. Lin, "Shape Memory Effect of $Ti_{50}Ni_{25}Cu_{25}$ Melt-Spun Ribbons Crystallized Under Isothermal Annealing", *2nd International Symp. on Functional Materials* (ISFM2007), Hangzhou, China. (2007)
2. K.N. Lin, **S.K. Wu** and S.H. Chang, "Grain-size Effect on Multiple-Stage Martensitic Transformation of Cold-Rolled and Annealed $Ti_{51}Ni_{40}Cu_9$ Shape Memory Alloy", *2nd International Symp. on Functional Materials* (ISFM2007), Hangzhou, China. (2007)

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4. **S.K. Wu**, C.H. Wu and R.K. Shiue, “Infrared Brazing Ti-6Al-4V and 17-4PH Stainless Steel with Barrier Layers”, *11th World Conference on Titanium (Ti-2007)*, Kyoto, Japan. (2007)
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6. J. Y. Wang, H. J. Tsai, J. Y. Uan and **S. K. Wu**, “Investigation of the Surface Photo-Catalytic Treatment of AZ91 Alloy”, *the 2nd Asia Symposium on Magnesium Alloys (ASMA-II)*, Fukuoka, Japan. (2007)
7. Chien-Hui Chen, Mu-Rong Yang and **Shyi-Kaan Wu**, “Polymerized Hexamethyldisilazane Coated on Equiatomic TiNi Shape Memory Alloy Using DC-Pulsed Plasma Enhanced Chemical Vapor Deposition”, *International Conference of Shape Memory and Superelastic Technologies-2007 (SMST-2007)*, Tsukuba, Japan. (2007)
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9. K.N. Lin, **S. K. Wu** and S.H. Chang, 2008.6, “Annealing Effect on Transformation Behavior of Ni-rich $Ti_{40}Ni_{41}Cu_{10}$ Shape Memory Alloy”, presented in *International Conference on Martensitic Transformation 2008 (ICOMAT-2008)*, Santa Fe, New Mexico, USA. (2008)
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12. K.N. Lin, **S. K. Wu** and S.H. Chang, 2009. 6, “Study on $Ti_{50}Ni_{25-x}Pd_{25-y}Cu_{x+y}$ High Temperature Shape Memory Alloys”, *3rd International Symp. on Functional Materials (ISFM 2009)*, Jinju, Korea. (2009)
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3. S.H. Chang and S.K. Wu, "The Study on Crystallization kinetics of amorphous $Ti_{50}Ni_{25}Cu_{25}$ melt-spun ribbons by using Johnson-Mehl-Avrami equation", presented in 2006 Annual Conf. of the Chinese Soc. for Materials Science, Tainan. (2006)
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11. S.K. Wu (invited speaker), "Research and Development of TiNi-based Shape Memory Alloys in Taiwan", 兩岸華人前瞻材料與應用論壇(2006,11.25), 台南。(2006)

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15. 蔡宗容、吳錫侃、陳佩謙，”時效處理對富鎳鈦鎳形狀記憶合金多階相變態行為之影響”，中國材料科學學會 2007 年年會論文集，新竹。(2007)
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62. 吳錫侃、王建義，2010，”極輕質高制振能鎂合金之研究”期末報告，中山科學研究院學合案計畫(XV99D13P)，台北。

專利 (Patents) :

1. 吳錫侃，薛人愷，呂源彬，2006，“高爾夫球頭之異質金屬構件之接合方法”，中華民國發明專利第 I267396 號，專利期間：民國 95 年 12 月 1 日到民國 114 年 5 月 15 日。

2. 吳錫侃，朱閔聖，王建義，徐章詮，2006，“一種利用物理氣相沉積鋁改善 α_2 -鈦鋁介金屬之高溫耐氧化性”，中華民國發明專利第 I247818 號，專利期間：民國 95 年 1 月 21 日到民國 112 年 8 月 14 日。

得獎紀錄 (Honors) :

1. 2009 中國材料科學學會首屆會士 (Fellow)。
2. 2006 台大終身職特聘教授。

研究計畫 (Research Projects) :

1. 極輕質高制振能鎂合金之研究，中山科學研究院，99/04/01 ~ 99/11/30，XV99D13P 冶金材料前瞻技術—極輕質高制振能鎂合金之研究，主持人，計畫期間：2010.04.01~2010.11.31，委任單位：中山科學研究院第五研究所。(XV99D13P)
Studies on the High Damping Capacity of Extra Light Magnesium Alloys
2. 改進形狀記憶合金性能之研究—子計畫一：改進鈦鎳基形狀記憶合金性能之研究，主持人，計畫期間：2008.08.01~2011.7.31，委任單位：國科會。(NSC 97-2221-E-002-035-MY3)
Properties Improvement of TiNi-based Shape Memory Alloys (1/3~3/3) (Project I)
3. 改進形狀記憶合金性能之研究—總計畫，主持人，計畫期間：2008.08.01~2011.7.31，委任單位：國科會。(NSC 97-2221-E-002-036-MY3)
Properties Improvement of Shape Memory Alloys (1/3~3/3) (Integral Project)
4. 新型低溫銀基硬鋁填料之開發及其應用於紅外線真空硬鋁不銹鋼之研究，主持人，計畫期間：2008.08.01~2011.7.31，委任單位：國科會。(NSC 97-2221-E-002-037-MY3)
Infrared Vacuum Brazing Stainless Steels Using Novel Low-Temperature Ag-Based Braze Alloys (1/3~3/3)
5. 高溫形狀記憶合金之研究，主持人，計畫期間：2008.08.01~2009.7.31，委任單位：教育部，邁向頂尖大學計畫。(96R0044)
Studies on the High Temperature Shape Memory Alloys
6. 極輕質高制振能鎂合金之研究，主持人，計畫期間：2009.1.1~2009.12.31，委任單位：國科會。(NSC 98-2623-E-002-014)
Studies on the High Damping Capacity of Extra Light Magnesium Alloys
7. 輕金屬以脈衝電漿沉積六甲基二矽胺(HMDSN)薄膜之研究，主持人，計畫期間：2007.11.1~2008.10.31，委任單位：傑出材料科技(股)公司。
A Study of HMDSN Thin Films Coated on Light Metals Using DC-pulsed Plasma Enhanced Chemical Vapor Deposition
8. 輕金屬以脈衝電漿沉積六甲基二矽胺(HMDSN)薄膜之研究，主持人，計畫期間：2007.11.1~2008.10.31，委任單位：國科會小產學計畫。(NSC96-2622-E002-022-CC3)。
A Study of HMDSN Thin Films Coated on Light Metals Using DC-Pulsed Plasma Enhanced Chemical Vapor Deposition
9. 新的形狀記憶合金之研究，子計畫一：新的鈦鎳基形狀記憶合金之研究(3/3)，主持人，

- 計畫期間：2007.08.01~2008.07.31，委任單位：國科會。(NSC 96-2221-E-002-016)
Studies on the Novel TiNi-Based Shape Memory alloys (3/3)(Project I)
10. 新的形狀記憶合金之研究—總計畫(3/3)，主持人，計畫期間：2007.08.01~2008.7.31，委任單位：國科會。(NSC 96-2221-E-002-017)。
Studies on the Novel Shape Memory Alloys (3/3) (Integral Project)
11. 富鎳 TiNi 形狀記憶合金多階相變態之研究，主持人，計畫期間：2007.01.01~2007.12.31，委任單位：台大工業中心 96-S-A05 (宗倬章基金會)。
Studies on Multiple-Stage Martensitic Transformation of Ni-riched TiNi shape Memory Alloys
12. 超合金真空硬鋸修補之研究，協同主持人，計畫期間：2007.01.01~2007.12.31，委任單位：中山科學院、台大工業中心 96-S-A38 計畫。
The Study of Vacuum Repair Brazing Superalloys
13. 富鎳 TiNi 形狀記憶合金性能之研究，主持人，(NSC96-2815-C002-026-E) (大學生參與專題計畫)。
A Study on the Properties of Ni-Riched TiNi Shape Memory Alloys
14. 新的形狀記憶合金之研究，子計畫一：新的鈦鎳基形狀記憶合金之研究(2/3)，主持人，計畫期間：2006.08.01~2007.07.31，(NSC95-2221-E002-164)。
Studies on the Novel TiNi-Based Shape Memory alloys (2/3)(Project I)
15. 新的形狀記憶合金之研究—總計畫(2/3)，主持人，計畫期間：2006.08.01~2007.7.31，(NSC95-2221-E002-163)。
Studies on the Novel Shape Memory Alloys (2/3) (Integral Project)
16. 紅外線快速硬鋸接合異質合金之研究，主持人，計畫期間：兩年期，2006.08.01~2008.07.31 (NSC95-2221-E002-081-MY2)。
Rapid Infrared Brazing of Dissimilar Alloys (1/2,2/2)
17. 輕量型高制振能金屬材料之研究，主持人，計畫期間：2006.01.01~2006.12.31，委任單位：國科會國防科技學術合作研究計畫，(NSC95-2623-7-002-005-D)。
A Study on High Damping Light Metals
18. TiNiCu 三元形狀記憶合金之研究，主持人，(NSC95-2815-C002-012-E) (大學生參與專題研究計畫)。
A Study on TiNiCu Ternary Shape Memory Alloys
19. 新的形狀記憶合金之研究—新的鈦鎳基形狀記憶合金之研究(3/3)，主持人，計畫期間：2005.08.01~2006.07.31，委任單位：國科會。(NSC96-2221-E002-016)。
Studies on the Novel TiNi-Based Shape Memory Alloys (3/3) (Project I)
20. 新的形狀記憶合金之研究—總計畫(3/3)，主持人，計畫期間：2005.08.01~2006.07.31，委任單位：國科會。(NSC96-2221-E002-017)。
Studies on the Novel Shape Memory Alloys (3/3) (Integral Project)
21. 新的形狀記憶合金之研究—子計畫一：新的鈦鎳基形狀記憶合金之研究(1/3)，主持人，計畫期間：2005.08.01~2006.07.31，(NSC94-2216-E002-030)。
Studies on the Novel TiNi-Based Shape Memory Alloys (1/3) (Project I)
22. 富鎳 Ti₄₉Ni₅₁ 形狀記憶合金全方位形狀記憶效應之研究，主持人，2005.08.01~2006.02.28，NSC94-2815-E002-016-E (大專生參與專題研究技劃)。

A Study on All-Round Shape Memory Effect of Ni-Riched $Ti_{49}Ni_{51}$ Shape Memory Alloy

23. $Ti_{50.5-x}Ni_{49.5}Hf_x(x=5,10)$ 高溫形狀記憶合金之研究，主持人，計畫期間：2005.08.01~2006.02.28，(NSC94-2815-E002-017-E) (大專生參與專題研究技劃)。
A Study on $Ti_{50.5-x}Ni_{49.5}Hf_x(x=5,10)$ High Temperature Shape Memory Alloys
24. 新的形狀記憶合金之研究總計畫(1/3)，主持人，計畫期間：2005.08.01~2006.07.31，(NSC94-2216-E002-029)。
Studies on the Novel Shape Memory Alloys (1/3) (Integral Project)
25. 紅外線快速硬銲接合異質合金之研究(I)，主持人，計畫期間：2005.08.01~2006.07.31，(NSC94-2216-E002-013)。
Rapid Infrared Brazing of Dissimilar Alloys (1/2,2/2)(I)
26. 鋇合金護套材料氫化鋇析出物微結構研究，主持人，計畫期間：2005.02.01~2006.01.31，委任單位：(核能研究所委託研究計畫)，慶齡工業研究中心 94-S-A27 計畫。
27. 改進形狀記憶合金性能之研究-子計畫一：改進鈦鎳基形狀記憶合金性能之研究，國科會，97/08/01 ~ 100/07/31，NSC 97-2221-E-002-035-MY3
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29. 新型低溫銀基硬銲填料之開發及其應用於紅外線真空硬銲不銹鋼之研究，國科會，97/08/01 ~ 100/07/31，NSC 97-2221-E-002-037-MY3
30. 高溫形狀記憶合金之研究，教育部，邁向頂尖大學計畫，計畫期間：98/08/01. ~ 100/07/31，96R0044
31. 極輕質高制振能鎂合金之研究，中山科學研究院，99/04/01 ~ 99/11/30，XV99D13P

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期刊論文 (Journal Papers) :

1. Yen-Chang Chen, Yung-Ning Pan, and Kuo-Huang Hsieh, "Study on Pyrolysis Reactor Development and Its Fast Pyrolysis Process in Converting Bio-mass into Bio-oil," Bioresource Technology, BITE-D-10-03663, in submission, 2010.
2. Yen-Chang Chen, Yung-Ning Pan, "Study on the Optimization of Fast Pyrolysis Process in Converting Bio-mass into Bio-oil by Employing a Novel Pyrolysis Reactor," Bioresource Technology, BITE-D-10-03757, in submission, 2010.
3. Keng-Liang Ou, Pei-Wen Peng, Hsin-Chung Cheng and Yung-Ning Pan, "Research of Silver Addition on the Microstructure and Antibacterial Properties on AISI 304 Stainless Steel," Journal of the Electrochemical Society, 2010, in submission (#JES-09-1676).
4. Pei-Wen Peng, Keng-Liang Ou, His-Chen Lin, Yung-Ning Pan, Chau-Hsiang Wang, "Effect of Electrical-Discharging on Formation of Nanoporous Biocompatible Layer on Titanium," Journal of Alloys and Compounds, Vol. 492, Issues 1-2, pp.625-630, March 2010. (SCI)
5. Pei-Wen Peng, Keng-Liang Ou, Chih-Yeh Chao, Yung-Ning Pan, Chau-Hsiang Wang, "Research of Microstructure and Mechanical Behavior on Duplex Ti-4.8Al-2.5Mo-1.4V Alloy," Journal of Alloys and Compounds, Vol. 490, Issues 1-2, pp.661-666, February 2010. (SCI)
6. Y. N. Pan, C. C. Fan, H. Y. Chang and C. H. Cheng, "High Temperature Thermal Fatigue Property of Thin-Section Ductile Cast Iron," AFS Transactions, Vol.117, 2010. (EI)
7. F. J. Chen, Y. N. Pan, C. Y. Lee, and C. S. Lin, "Internal Stress Control of Nickel-Phosphorus

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8. Y. N. Pan, C. C. Fan, H. Y. Chang and C. H. Cheng, “High Temperature Thermal Fatigue Property of Thin-Section Ductile Cast Iron,” AFS Trans., Vol. 118, 2010. (EI)
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 10. P. W. Peng, K. L. Ou, C. Y. Chao, Y. N. Pan, C. H. Wang, “Research of Microstructure and Mechanical Behavior on Duplex ($\alpha+\beta$) Ti - 4.8Al - 2.5Mo - 1.4V Alloy,” Journal of Alloys and Compounds, 490(1-2), 661-666, 2010. (SCI)
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 13. M. S. Chen, P. W. Peng, Y. N. Pan and K. L. Ou, “Effect of Silver on Antibacterial Properties of Stainless Steel,” Applied Surface Science, 2010, in revise.
 14. S. F. Ou, C. S. Lin, Y. N. Pan, “Formation of Hydroxyapatite on Low Young’s Modulus Ti-30Nb-1Fe-1Hf Alloy via Anodic Oxidation and Hydrothermal Treatment,” Materials Science and Engineering: C, Vol.29, No.8, pp.2346-2354, 10, 2009 (SCI)
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 18. E. N. Pan, P. C. Yu and R. M. Chang, “Production of Bi-Metal (High-Cr Cast Iron – Alloyed Steel) Hammers and Analyses of Microstructure and Properties,” AFS Transactions, Vol. 115, 2008. (EI)
 19. Y. N. Pan, W. S. Chang and R. M. Chang, “Optimal Heat Treatment Conditions and Properties of Bimetal (High-Cr Cast Iron – Alloyed Steel) Hammers,” International Journal of Cast Metals Research, Vol. 21, No. 1-4, pp. 71-75, 2008. (SCI)
 20. 源、范振佶、鄭進華、潘永寧，“薄壁球狀石墨鑄鐵之高溫熱疲勞性質研究，”鑄造工程學刊 (J. of Taiwan Foundry Society), 第34卷第4期(第139期), 2008年12月.

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24. 馮國治、吳恩育、潘永寧、李傳莉、歐耿良、洪炎輝, "以鹼性溶液與熱處理進行鈦合金表面改質之研究," *鑄造工程學刊 (J. of Taiwan Foundry Society)*, 第33卷第2期(第133期), Pp.37-44, 2007年9月.
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28. 吳恩育、馮國治、張振庭、洪炎輝、歐耿良、潘永寧, "Nb 及 Hf 對於 Ti-x Nb-y Hf 合金之機械性質和生物相容性之影響," *鑄造工程學刊 (J. of Taiwan Foundry Society)*, 第32卷第2期(第129期), Pp.28-37, 2006年6月.
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30. E. N. Pan and M. S. Lin, "On the Riser Design of Cast Iron with Low Thermal Expansion Coefficient," *AFS Trans.*, Vol.113, 2006. (EI)

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2. K.L. Ou, P.W. Peng, Y.N. Pan, C.F. Huang and H.C. Cheng, "Enhanced Intrinsic Biomechanical Properties of Osteoblastic Mineralized Tissue on Chemically Modified TiNb Alloy," 16th International Conference on Surface Modification of Materials by Ion Beams (SMMIB 2009), 09, 2009
3. S. Ou, Y. Pan and C. Lin, "Formation of Hydroxyapatite on Ti-30Nb-1Fe-1Hf by Anodizing

- Oxidation and Hydrothermal Treatment,” 15th ECS Meeting, 05, 2009
4. Y. N. Pan, C. C. Fan, H. Y. Chang and C. H. Cheng, “High Temperature Thermal Fatigue Property of Thin-Section Spheroidal Graphite Cast Iron,” The Carl Loper Cast Iron Symposium, 05, 2009
 5. P.W. Peng, H.C. Cheng, Y.N. Pan and K.L. Ou, “Study on Antibacterial Mechanism of AISI 304 Stainless Steel with Silver Content,” Biomedical Engineering Society 2009 Annual Symposium, 12, 2009
 6. P.W. Peng, H.C. Cheng, Y.N. Pan and K.L. Ou, “Study on Characterizations and Antibacterial Effect of stainless Steel with Ag Content,” Biomedical Engineering Society 2009 Annual Symposium, 12, 2009
 7. H.C. Cheng, P.W. Peng, Y.N. Pan, C.S. Chen and K.L. Ou, “Research of Hemocompatibility on Titanium with P-15 Functional Biofilm,” Asia Pacific Conference on Optics Manufacture 2009 (APCOM 2009) , 02, 2009
 8. F. Chen, N. Wen, M. Ger, Y. Pan and C. Lin, “Characterization of Hexavalent and Trivalent Chromium Conversion Coatings on Electrogalvanized Steel,” the 213th ECS (Electrochemical Society) Meeting, Phoenix, AZ, May 18 - 22, 2008.
 9. Y. N. Pan, W.-S. Chang and R. M. Chang, “Optimal Heat Treatment Conditions and Properties of Bimetal (High Cr Cast Iron/Alloyed Steel) Hammers,” Proceedings of 10th Asian Foundry Congress, Nagoya, Japan, May 21-24, 2008.
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 11. En-Yu Wu, Keng-Liang Ou, Yung-Ning Pan and Chang-Chih Chen, “Enhancement of Biocompatibility on Bioactive Ti-Nb-based Alloy by High-density Plasma Modification,” 2007 TMS, Orlando, USA, Feb.25-Mar.1, 2007.
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2. H. C. Cheng, P.W. Peng, Y. N. Pan, C. S. Chen and K. L. Ou, “Research of Hemocompatibility

on Titanium with P-15 Functional Biofilm,” Asia Pacific Conference on Optics Manufacture 2009 (APCOM 2009), Feb. 11~14, 2009. Taipei, Taiwan.

3. S. F. Ou, C. S. Lin and Y. N. Pan, “Microarc Oxidation and Hydrothermal Treatment of Biomedical Ti-30Nb-1Fe-1Hf Alloy,” 第 28 屆中華民國顯微鏡年會, 97 年 6 月 21 日, 台中市台中科技大學。
4. 陳黼澤、文念慈、蔡郁德、林招松、潘永寧、葛明德, “緩衝劑對三價鉻鈍化膜微結構與抗蝕性之影響,” 中華民國防蝕工程學會(第六屆海峽兩岸材料腐蝕與防護研討會), TW129, pp. 93-106, 2008 年 11 月 9~12 日, 台灣花蓮理想大地渡假飯店。
5. 潘永寧, 張維鑫, Nobuya Sasaguri and Yasuhiro Matsubara, “碳、鎢含量及熱處理條件對多元合金白口鑄鐵顯微組織與耐磨耗性質之影響,” 台灣鑄造學會 97 年度論文發表會論文集, 97 年 11 月 16 日, 台南縣永康市桂田中信酒店。
6. 張宏源、范振佑、潘永寧, “薄壁球狀石墨鑄鐵之高溫熱疲勞性質研究,” 台灣鑄造學會 97 年度論文發表會論文集, 97 年 11 月 16 日, 台南縣永康市桂田中信酒店。
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10. 陳黼澤、簡志瑋、陳明威、謝曉華、林招松、潘永寧, “三價鉻電鍍層微結構分析”, 中國材料科學學會 2008 年年會, P08-123, 2008 年 11 月 21~22 日, 台北臺北科技大學。NSC-96-2628-E-002-016-MY3.
11. 張維鑫, 潘永寧, “熱處理條件對高鉻鑄鐵耐磨耗性之影響,” 台灣鑄造學會 96 年度論文發表會論文集, 96 年 11 月 24 日, 新竹科學園區 - 科技生活館。
12. 范振佑, 張宏源, 潘永寧, “薄件球墨鑄鐵之研製,” 台灣鑄造學會 96 年度論文發表會論文集, 96 年 11 月 24 日, 新竹科學園區 - 科技生活館。
13. 馮國治、吳恩育、洪炎輝、歐耿良、潘永寧, “以鹼性溶液與熱處理法進行生醫用鈦合金表面改質之研究,” 2006 年中國材料學會年會論文, 95 年 11 月 25 日, 台南市國立成功大學。
14. 吳恩育、李傳莉、洪炎輝、歐耿良、潘永寧, “以 O₂ 電漿處理進行 Ti-40Nb-1Hf 合金表面改質之研究,” 台灣鑄造學會 95 年度論文發表會論文集, 95 年 11 月 25 日, 彰化縣中洲技術學院。
15. 游弼鈞、張瑞模、邱平生、潘永寧, “雙金屬(高 Cr 鑄鐵-合金鋼)水泥鉋頭之研發-最佳熱處理條件建立及耐磨耗分析,” 台灣鑄造學會 95 年度論文發表會論文集, 95 年 11 月 25 日, 彰化縣中洲技術學院。
16. 潘永寧, “台灣鑄造業之明天,” 台灣區鑄造品工業同業公會 95 年度大會專題演講, 95 年 7 月 16 日, 桃園。
17. 潘永寧, “台灣鑄造工業之發展及研發狀況,” 兩岸三地鑄造業合作論壇, 2006 年 4 月 17 日, 北京, 中國。

得獎紀錄 (Awards) :

1. 陳黼澤、林招松、潘永寧，“於胺基磺酸浴中電鍍鎳與電鍍鈷鍍層之高溫退火行為，”台灣金屬熱處理學會 2009 年會員大會暨論文研討會，振鋒企業 YOKE 論文獎佳作。
2. 陳黼澤、黃大展、林招松、潘永寧，“脈衝反轉電鍍鎳鎢合金之微結構與機械性質，”中國材料科學學會材料科學學生論文獎優等獎，98 年 11 月 26 日。
3. 台灣鑄造學會論文獎，2009:
4. 台灣鑄造學會論文獎，2008: 吳恩育、馮國治、鄭進草、潘永寧、李傳莉、歐耿良、洪炎輝，“以低溫電漿處理進行 Ti-40Nb-1Hf 合金表面改質之研究，”鑄造工程學刊 (J. of Taiwan Foundry Society), 第 34 卷第 4 期 (第 139 期), Pp.33-46, 2008 年 12 月。
5. 台灣鑄造學會論文獎，2007: 游弼鈞、張瑞模、邱平生、潘永寧，“雙金屬(高 Cr 鑄鐵-合金鋼)水泥鉋頭之研發-最佳熱處理條件建立及耐磨耗分析，”鑄造工程學刊 (J. of Taiwan Foundry Society), 第 33 卷第 3 期 (第 134 期), Pp.1-10, 2007 年 9 月。
6. 台灣鑄造學會論文獎，2004: 洪文琦、林明山、潘永寧，“低熱膨脹鑄鐵之切削性研究，”鑄造工程學刊 (J. of Taiwan Foundry Society), 第 30 卷第 1 期 (第 120 期), Pp. 40-53, 2004 年 3 月。
7. 台灣鑄造學會論文獎，2003: 胡瑞峰、嚴偉峰、張立人、潘永寧，“臥式擠壓鑄造冶金參數及製程參數對鋁基碳化矽複合材料流動性之影響，”鑄造工程學刊 (J. of Taiwan Foundry Society), 第 29 卷第 1 期 (第 116 期), Pp.58-79, 2003 年 3 月。

研究計畫 (Research Projects) :

1. 爐渣改良劑(Slag X)對鋼鐵熔液清淨度之效能分析研究，主持人，計畫期間: 99/03~99/05, 委任單位: 見得行股份有限公司 (99-S-A24)。\$400,000
2. 大型風力機關鍵性元件之材質研究與製程應用研發，主持人，計畫期間: 98/11 ~99/12, 委任單位: 國科會 (NSC98-3114-E-002-007)。\$4,708,000 (\$1,512,000)
3. 應用於高溫熱疲勞之薄壁石墨鑄鐵之研製，主持人，計畫期間: 97/08/01 ~99/07/31, 委任單位: 國科會 NSC97-2221-E-002-032-MY2。\$1,526,000
4. 公務人員高等考試三級考試暨普通考試機械工程類科應試科目命題大綱委託研究案，主持人，計畫期間: 98/04/01 ~98/10/09, 委任單位: 考選部。\$238,000
5. 複合陶瓷模具強度測試機開發，主持人，計畫期間: 97/09~97/11, 委任單位: 復盛股份有限公司 (98-S-A21)。\$300,000
6. 耐磨耗雙金屬(高Cr白口鑄鐵/球墨鑄鐵)之合金設計、熱處理條件及鑄造技術之研究，主持人，計畫期間: 96/08 ~97/07, 委任單位: 國科會 NSC96-2221-E002-153。\$650,000
7. 低熱膨脹鑄鐵之鑄造性及加工性研究，主持人，計畫期間: 95/08~96/07, 委任單位: 國科會 NSC95-2221-E002-114。\$801,000
8. 平衡桿溫度對金相組織及耐久性之影響，主持人，計畫期間: 95/01~95/12, 委任單位: 中華汽車(95-S-C01-I)。\$700,000

9. 2MW風力機之葉片旋轉輪殼系統鑄件新產品之開發，主持人，計畫期間：95/08~96/01，委任單位：源潤豐公司(95-S-A24)。\$1,000,000
10. 大型風力機關鍵性元件之材質研究與製程應用研發(1/2)，主持人，計畫期間：100/01~100/12，委任單位：國科會 (NSC100-3113-E-002-002)。\$5,000,000

廖運炫

Yunn-Shiuan Liao

教授

Professor

臺灣大學，機械工程學士，1973

B.S. in Mechanical Engineering,
National Taiwan University, 1973

威斯康辛大學，機械工程碩士，1976

M.S. in Mechanical Engineering,
University of Wisconsin-Madison, 1976

威斯康辛大學，機械工程博士，1980

Ph.D. in Mechanical Engineering,
University of Wisconsin-Madison, 1980

研究專長 (Specialty) :

切削原理、非傳統加工、工具機動態分析與控制、品質管制與可靠度

Metal cutting principles, Non-traditional machining process, Machine tool dynamics and control, Quality control and reliability

期刊論文 (Journal Papers) :

1. F. H. Liu, T.Y. Ni, Y.S. Liao, 2010, "Fabrication hard bone scaffolds mold using selective laser curing technology," Chinese Journal of Lasers, Vol. 34, No. 6, pp. 761-765 (EI)
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27. Y.S. Liao, S.T. Chen and C.S. Lin, 2006, "A High Precision Tabletop Versatile CNC Wire-EDM for Making Intricate Micro Parts Developed in National Taiwan University," Proc. of the 1st International Conference on Micromanufacturing, UIUC, USA, pp. 48-52.

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3. 廖運炫、陳順同、林常盛，2006，"精密微小 CNC 加工機之機上微量測技術之研發"，第五屆海峽兩岸製造技術研討會(光碟)，高雄、台灣。
4. S.T. Chen, Y.S. Liao and C.S. Lin, 2006, "Development of the Integrated Micro Machining system," Society of Manufacturing Engineers, SME-Taipe Chapter, 2006 Annual Meeting and the 5th Conference on Precision Manufacturing, pp. 526-531, Tainan, Taiwan.
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專利 (Patents) :

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2. 顏木田、簡興宗、廖運炫，微線切割放電加工之監視與控制系統，中華民國發明專利第 I298028 號，專利期間：2008/06/21~2026/10/31。
3. 廖運炫、陳盈同，微陣列探針的製作方法，中華民國發明專利第 I282422 號，專利期間：2007/06/11~2025/09/20。
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4. 楊詔中、廖運炫、陳盈同，非接觸式清潔系統及其清潔方法，中華民國發明專利第 I282308 號，專利期間：2007/06/11~2025/08/17。
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Y.S. Liao, S.T. Chen and C.S. Lin, "Wire-EDM Mechanism," ROC Invention patent, No. I254659, Eff. date: 2006/05/11~2025/04/14.
8. 廖運炫、陳順同、林常盛，微細線張力控制機構，中華民國發明專利第 I255212 號，專利期間：2006/05/21~2025/04/14。
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10. 廖運炫、侯健才、邱雲堯，快速原型之架橋式層狀成形方法，中華民國發明專利第 203614 號，專利期間：2004/06/11~2022/01/31。
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13. 廖運炫、邱雲堯，薄片基層快速原型方法及其裝置，中華民國發明專利第 133412 號，專利期間：2001/06/07~2019/08/08。

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14. 廖運炫、吳正仲、吳明行，放電加工波形資料處理與監控裝置電路改良，中華民國新型專利第 142782 號，專利期間：1998/12/01~2009/09/09。

Y.S. Liao, J.C. Woo and M.C. Wu, “Wire-EDM Wave form Data Processing and Monitoring Circuit,” ROC New type patent, No. 142782, Eff. date: 1998/12/01~2009/09/09.

得獎紀錄 (Honors) :

1. 台灣大學特聘教授 (2006, 2009)
2. 第三屆奇美獎，優等獎(2009)
Outstanding Award, 2008 Chimei Award (2009)
3. SME 2008 第六屆全國精密製造研討會論文佳作獎 (2008)
Fine Paper Award, SME 2008 the 6th Precision Manufacturing Conference (2008)
4. 教育部九十五年度「精密機電整合人才培育計畫」技術論文獎 – 特優 (2006)
Excellent Award, Technical Paper Award on Precision Mechatronics and Integration Personnel Training Project, Ministry of Education, 2006
5. 第三屆上銀科技碩士論文獎 - 入圍獎 (2006)
Honorable Award, 2006 Hiwin Thesis Award
6. 教育部九十五年度「精密機電設計與整合」學生專題實作決賽 – 佳作 (2006)
Fine work Award, Students Hand-on Competition on Precision Mechatronics and Integration, Ministry of Education, 2006

研究計畫 (Research Projects) :

1. 微切削鈦合金之研究，主持人，計畫期間：10/08/01~13/07/31，委任單位：國科會。
Study of Micro-Cutting of Titanium Alloy, PI, Project period: 10/08/01~13/07/31, Organization: NSC.
2. 創新式超音波牙鑽及骨刀系統之開發，子計畫三共同主持人，計畫期間：10/09/01~11/08/31，委任單位：南部科學工業園區管理局。
Development of an innovative ultrasonic dental surgical device, Co-PI of Subproject 3, Project period: 10/09/01~11/08/31, Organization: Southern Taiwan Science Park.
3. 控制器精度提升研究之二 - 高精度、高剛性桌上型 CNC 工具機開發，主持人，計畫期間：10/04/15~10/11/30，委任單位：工研院機械所。
Development of of a high accuracy, high rigidity tabletop CNC machine tool, PI, Project period: 10/04/15~10/11/30, Organization: MIRL/ITRI.
4. 鈦合金牙根加工研究，主持人，計畫期間：10/06/01~11/03/31，委任單位：寶元科技股份

有限公司。

Machining of titanium implant, PI, Project period: 10/06/01~11/03/31, Organization: Pou Yuen Technology Co., LTD.

5. 金屬基複合材料之切削性研究(二)，主持人，計畫期間：10/01/01~10/12/31，委任單位：中科院。

The research of machinability of metal matrix composites (II), PI, Project period: 10/01/01~10/12/31, Organization: CSIST.

6. 創新式超音波牙鑽及骨刀系統之開發，子計畫三共同主持人，計畫期間：09/09/01~10/08/31，委任單位：南部科學工業園區管理局。

Development of an innovative ultrasonic dental surgical device, Co-PI of Subproject 3, Project period: 09/09/01~10/08/31, Organization: Southern Taiwan Science Park.

7. 智能化線切割機技術之研究，主持人，計畫期間：09/08/01~12/07/31，委任單位：國科會。
Study of technologies for the intelligent WEDM machine, PI, Project period: 09/08/01~12/07/31, Organization: NSC.

8. 線切割放電加工精度 - 鼓形量改善之研究(3/3)，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。

Study to improve the drum factor in WEDM (3/3), PI, Project period: 09/08/01~10/07/31, Organization: NSC.

9. 金屬基複合材料之切削性研究，主持人，計畫期間：09/01/01~09/12/31，委任單位：中科院。

The research of machinability of metal matrix composites, PI, Project period: 09/01/01~09/12/31, Organization: CSIST.

10. 高性能線切割放電加工機解析研究，主持人，計畫期間：09/01/01~10/06/30，委任單位：徠通科技、慶鴻機電、喬懋機電公司。

Study and analysis of high performance wire electrical discharge machine, PI, Project period: 09/01/01~10/06/30, Organization: Accutex Technologies Co., Ltd., Chin Hung Machinery Co., Ltd., Joemars Machinery & Industrial Co., Ltd.

11. 高熔點材料之線切割放電加工特性研究，主持人，計畫期間：09/01/01~09/12/31，委任單位：宗倬章教育基金會。

Study of the characteristics of machining the high melting point materials by wire electrical discharge machining, PI, Project period: 09/01/01~09/12/31, Organization: Tsung Tsuo Chung Foundation

12. 線切割放電加工精度 - 鼓形量改善之研究(2/3)，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。

Study to improve the drum factor in WEDM, PI, Project period: 08/08/01~09/07/31, Organization: NSC.

13. 微放電加工機高效能與高精度化技術之研究(3/3)，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。

Study of the technologies to improve the efficiency and accuracy of micro EDM machine (3/3), PI, Project period: 08/08/01~09/07/31, Organization: NSC.

14. 精細線切割放電加工線系統及穿線機構可靠度研究，主持人，計畫期間：08/04/01~08/11/30，委任單位：工研院機械所。
Study of wire system and the reliability of wire threading mechanism of fine wire EDM, PI, Project period: 08/04/01~08/11/30, Organization: MIRL/ITRI.
15. CBN 刀具車削 V 溝於高硬度合金鋼之製程改善研究，主持人，計畫期間：08/05/01~08/07/31，委任單位：奇菱科技公司。
Study of the process improvement of turning V-groove on high hardness alloy steel by CBN tool, 08/05/01~08/07/31, Organization: Chi Lin Technology Co., Ltd.
16. CBN 與陶瓷刀具於車削高硬度合金鋼之可行性研究，主持人，計畫期間：07/12/01~07/12/31，委任單位：奇菱科技公司。
Feasibility study of turning high hardness alloy steels by CBN and ceramic tools, PI, Project period: 07/12/01~07/12/31, Organization: Chi Lin Technology Co., Ltd.
17. 次世代 CMP 鑽石碟製程技術之開發研究(台灣大學促進產學合作先導型計畫)，主持人，計畫期間：07/01/01~08/07/31，委任單位：台灣大學、中國砂輪公司。
Research and development of next generation CMP diamond dresser, PI, Project period: 07/01/01~08/07/31, Organization: National Taiwan University & Kinik Company.
18. 玻璃基板劃線切割加工技術之研究，共同主持人，計畫期間：07/03/01~08/02/28，委任單位：友達光電公司。
Study of flat panel glass scribing technology, Co-PI, Project period: 07/03/01~08/02/28, Organization: AU Optronics Corp.
19. 大尺寸增亮膜之微細溝槽滾筒加工技術，主持人，計畫期間：07/08/01~08/07/31，委任單位：奇美電子公司。
Machining technology of micro groove on the large diameter drum for the large size brightness enhancement film, PI, Project period: 07/08/01~08/07/31, Organization: Chi Mei Technology Co., Ltd.
20. 線切割放電加工精度 - 鼓形量改善之研究(1/3)，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
Study to improve the drum factor in WEDM, PI, Project period: 07/08/01~08/07/31, Organization: NSC.
21. 微放電加工機高效能與高精度化技術之研究(2/3)，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
Study of the technologies to improve the efficiency and accuracy of micro EDM machine (2/3), PI, Project period: 07/08/01~08/07/31, Organization: NSC.
22. 微細加工機系統之研發，主持人，計畫期間：06/11/01~07/10/31，委任單位：上銀科技股份有限公司。
Research and development of a micro machining system, PI, Project period: 06/11/01~07/10/31, Organization: Hiwin Microsystem Corp.
23. 多工型臥式高精度微小 4 軸 CNC 加工機之研發及其應用(3/3)：總計畫，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
Development and application of the multi-functions high accuracy horizontal 4-axes CNC

- machine (3/3): Main project, PI, Project period: 06/08/01~07/07/31, Organization: NSC.
24. 多工型臥式高精密微小 4 軸 CNC 加工機之研發及其應用(3/3)：子計畫一：微奈米加工技術研發，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
Development and application of the multi-functions high accuracy horizontal 4-axes CNC machine (3/3): Sub-project 1 - Research of micro/nano machining technologies, PI, Project period: 06/08/01~07/07/31, Organization: NSC.
25. 微放電加工機高效能與高精度化技術之研究(1/3) ， 主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
Study of the technologies to improve the efficiency and accuracy of micro EDM machine (2/3), PI, Project period: 06/08/01~07/07/31, Organization: NSC.
26. 單晶、超硬材料之非球面超精密光學模仁加工合作計畫，主持人，計畫期間：06/01/01~07/12/31，委任單位：中國砂輪企業股份有限公司。
Ultra-machining of aspheric optics mold on single crystal and super-hard materials, PI, Project period: 06/01/01~07/12/31, Organization: Kinik Company.
27. 大尺寸增亮膜之微細溝槽滾筒加工技術，主持人，計畫期間：06/01/16~07/01/15，委任單位：奇美電子公司。
Machining technology of micro groove on the large diameter drum for the large size brightness enhancement film, PI, Project period: 06/01/16~07/01/15, Organization: Chi Mei Technology Co., Ltd.
28. 多工型臥式高精密微小 4 軸 CNC 加工機之研發及其應用(2/3)：總計畫，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
Development and application of the multi-functions high accuracy horizontal 4-axes CNC machine (2/3): Main project, PI, Project period: 05/08/01~06/07/31, Organization: NSC.
29. 多工型臥式高精密微小 4 軸 CNC 加工機之研發及其應用(2/3)：子計畫一：微奈米加工技術發，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
Development and application of the multi-functions high accuracy horizontal 4-axes CNC machine (2/3): Sub-project 1 - Research of micro/nano machining technologies, PI, Project period: 05/08/01~06/07/31, Organization: NSC.
30. 多工型精密微放電創成加工機之研發與相關製程技術之研究(3/3) ， 主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
Development of a multi-functions precision micro EDM generating machine and research of related process technologies (3/3), PI, Project period: 05/08/01~06/07/31, Organization: NSC.
31. 快速原型之多種材質成型方法及其嵌入式製程研發，共同主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
Study of the multi-materials rapid prototyping process with embedded functional parts, Co-PI, Project period: 05/08/01~06/07/31, Organization: NSC.
32. 光硬化樹脂型快速原型之嵌入式製程研究，共同主持人，計畫期間：05/05/01~06/04/31，委任單位：國科會。
Study of the SLA-embedded RP process, Co-PI, Project period: 05/05/01~06/04/31, Organization: NSC.

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期刊論文 (Journal Papers) :

1. N. Islam, R. M. Parkin, M. R. Jackson, S. Elmas, Z. Kesly and K.C. Fan (2010) "Performance analysis of a robust proportional-integral-derivative control technique for the auto-focusing mechanism of an optical surface profile measurement system," Proc. of Institution of Mechanical Engineers Part I: J of Systems and Control Engineering, Vol.224, Issue 16, pp. 635-646. (SCI, IF:0.447)
2. B. Liao, Y. Yang, B. Chia, S. Shih, K.C. Fan, (2010), "A 2x2 Split Cross-Bar Optical Switch Using a Hybrid Actuation Configuration," IEEE Journal of Lightwave Technology, Volume: 28, Issue: 20, pp. 2905-2911 (SCI, IF:2.185).
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得獎紀錄 (Honors) :

1. University Industrial Contribution Award, 2007, Ministry of Economic Affairs
2. Zhong Tsou-Zhang Chair Award, 2007, National Taiwan University
3. Best Paper Award, 2007, ITMPM International Conference
4. IEEE Student Competition First Prize, 2006
5. Best Paper Award, 2006, Chinese Society of Automation Engineering
6. Distinguished Research Award, 2003-2006, National Science Council

研究計畫 (Research Projects) :

1. 高精度自動化光學檢測機台之開發(1/2) ，主持人，計畫期間：2009/05/01~2010/0/30，委任單位：國科會。
2. 產業設備系統設計人才培育先導型計畫-產業製程監測設備系統設計人才培育教學資源中心，主持人，計畫期間：2009/02/01~2010/01/31，委任單位：教育部。
3. 高精度奈米級微型三次元量測儀及工具機之研究-總計畫：高精度奈米級微型三次元量測儀及工具機之研究，主持人，計畫期間：2008/08/01~2009/07/31，委任單位：國科會。
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5. 精密工具機精度衰減模式預測，主持人，計畫期間：2008/08/01~2011/07/31，委任單位：國科會。
6. 整合液晶滴入製程精密量測技術開發(III) ，主持人，計畫期間：2008/04/16~2008/12/10，委任單位：中科院。
7. 教育部 RFID 科技與應用人才培育先導型計畫-RFID 教育暨研發實驗資源中心 97 年度計畫，主持人，計畫期間：2008/04/01~2009/03/31，委任單位：教育部。
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11. 自主式小型環境控制腔之研製(3/3)，主持人，計畫期間：2007/08/01~2008/07/31，委任單位：國科會。
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16. 三軸移動台技術，主持人，計畫期間：2006/02/01~2006/11/30，委任單位：工研院。
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期刊論文 (Journal Papers) :

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2. 陳永傳、江國安、陳志杰，2006，以雷射被覆聚晶鑽石顆粒的表面改質處理，國科會 94 年度專題研究，NSC 94-2218-E002-081 (94 年 8 月~95 年 7 月)。
3. 陳永傳、鄭文彬，2007，改善碳化鎢鑽頭使用壽命之研究，台芝儀器股份有限公司委託研究計畫，95 - S - A - 14 (95 年 1 月~95 年 12 月)
4. 潘永寧、陳永傳，2007，平衡桿淬火溫度對金相組織及耐久性之影響，中華汽車股份有限公司委託研究計畫，95 - S - C01 - 1 (95 年 1 月~95 年 12 月)
5. 陳永傳、鄭文彬、鄭至偉，2007，碳勢控制對工具鋼熱處理性質的影響，國科會 95 年度提升產業技術及人才培育計畫，NSC 95-2622-E-002-006-CC3 (95 年 5 月~96 年 4 月)
6. 陳永傳、華子傑、李健維，2008，能緩慢且平滑升降溫的超冷處理設備之研究，國科會 96 年度專題研究計畫，NSC 96-2221-E-002-211 (96 年 8 月~97 年 7 月)
7. 陳永傳、黃晟瑜、余和彥，2008，超低溫脫氫之研究，國科會 96 年度提升產業技術及人才培育計畫，NSC 96-2622-E-002-003-CC3 (96 年 5 月~97 年 4 月)
8. 陳永傳、謝紹宗、鄒易康，2009，氣體の種類及流速對電鍍縫紉車針脫氫效果的影響，國科會 97 年度應用型產學合作計畫，NSC 97-2622-E-002-003-CC3 (97 年 8 月 ~98 年 7 月)
9. 陳永傳、黃晟瑜、余和彥，2009，超高頻感應加熱在微小工件製程上的應用(1)(2)，國科會 97 年度專題研究計畫，NSC 97-2221-E-002-019-MY3 (97 年 8 月 ~100 年 7 月)
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期刊論文 (Journal Papers) :

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專利 (Patents) :

1. Young, Hong-Tsu; Liao, Ching-Chang; Jiang, Ming-Shiue (2008), “Safety Apparatus in Connection with Work Loading Device to Safe Guard Machine Tools Operation”, Pat. No.: US 7,335,840 B2
2. 楊宏智, 林芳妃, 巫翎楷 (2007), “模組化腳踏車架組,” 中華民國新型專利第 M315187號
3. 楊宏智, 廖慶彰, 江明學, “一種避免工件裝卸裝置造成工具機公安問題之安全裝置”, 中華民國發明第 I253369 號
4. 楊宏智, 楊雅論, 楊威孫, “簡易洗手台(臉盆)之高度調整裝置”, 中華民國 新型專利第 224517號

得獎紀錄 (Honors) :

1. 指導學生榮獲第七屆『上銀機械碩士論文獎』(2011)
2. 行政院飛航安全委員會(2010)頒狀表彰 產學合作特殊貢獻
3. 第十屆破壞科學研討會暨 2010 年海峽兩岸材料破壞/斷裂學術會議 (2010) 大會傑出論文獎
4. 第 16 屆國籍航空飛安年會大會 Keynote Speaker (2008)
5. 國際航空調查員協會九十六年年會(2007) 論文獎第一名
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7. 中國機械工程學會九十三年(2004) 傑出工程教授獎
8. 財團法人台慶文教基金會工程科技獎 (2000)

研究計畫 (Research Projects) :

1. 成形刀具加工狀態之線上偵測系統開發, 主持人, 計畫期間: 2011/02/1 ~2011/12/31, 委任單位: 東培工業公司
2. 高轉速下光學反射鏡之製程與加工研究, 主持人, 計畫期間: 2010/1/1~2010/12/31, 委任單位:
3. 智慧型專利分析模式之研發與應用, 主持人, 計畫期間: 2010/11/1~2011/10/31, 委任單位: 國科會
4. 飛秒雷射加工精度提昇之研究, 主持人, 計畫期間: 2010/08/1~2011/07/31, 委任單位: 國科會
5. 雷射加工關鍵技術在微奈米元件之開發研究, 主持人, 計畫期間: 2007/08/1~2010/09/30,

委任單位：國科會

6. 強化我國飛航事故調查能量及建置亞洲地區飛航安全網計畫，共同主持人，計畫期間：2009/11/01~2010/10/31，委任單位：行政院國家科學技術發展基金
7. 薄膜太陽能製程設備計畫，協同主持人，計畫期間：2009/01/01~2009/12/31，委任單位：中科院
8. 提升我國飛航事故調查能量計畫，主持人，計畫期間：2008/11/01 ~2009/10/31，委任單位：行政院國家科學技術發展基金
9. 飛秒雷射於材料精密加工之可行性研究，主持人，計畫期間：2008/01/01~2009/12/31，委任單位：奇美電子公司
10. 發展 EMD 方法濾除腦波眨眼訊號並應用於測量疲勞狀態之研究，主持人，計畫期間：2008/12/01~2009/11/30，委任單位：華創車電公司
11. 雷射加工關鍵技術在微奈米元件之開發研究，主持人，計畫期間：2007/08/01~2010/07/31，委任單位：國科會
12. 矽晶圓加工之前瞻技術開發，主持人，計畫期間：2005/08/01~2007/07/31，委任單位：國科會
13. 太陽能燃料電池混合動力直接驅動車之研發與展示-子計畫四：太陽能燃料電池混合動力車車體結構設計及能量管理系統研發，主持人，計畫期間：2004/08/01~2007/07/31，委任單位：國科會

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研究專長 (Specialty) :

精密與創新性之塑膠成型技術、微機電、微元件成型

Precise & Innovative Plastic Molding Technologies, MEMS, Micro/Nano Fabrication Technologies, Metal Forming, Micro-Injection Molding

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5. Po-Hsun Huang and Sen-Yeu Yang, "Complete reversal imprinting for fabricating microlens arrays with faithful shape replication," *J. Vac. Sci. Technol.* (2009) B 27(6) (SCI)
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1. Jian-Wei Chen, Jing-Tang Wu, Sen-Seu Yang, “Study of transfer stamping technique for fabricating microstructure”, The 35th International Conference on Macro and Nano Engineering(MNE), 28 September – 1 October 2009, Ghent, Belgium
2. Hsin-Chun Lai, Jing-Tang Wu, Tzu-Chien Huang, Sen-Yeu Yang, “Fabrication of rigid microstructures on a metal roller using stepped rotating lithography”, The 35th International Conference on Macro and Nano Engineering(MNE), 28 September – 1 October 2009, Ghent, Belgium
3. Sen-Yeu Yang, Jing-Tang Wu, Ying-Ta Chu, Yi-Hao Huang, “CO₂ Gas-Assisted Micro Hot Embossing Process for Large-Area Replication of Microstructures ”, The 2nd Asian Symposium on Nano Imprint Lithography(ASNIL), 7-8 October 2009, Taipei 2009, Taiwan
4. Jing-Tang Wu, Bin-Da Chan, Tzu-Chien Huang and Sen-Yeu Yang, “Imprinting with Revolving-belt for Effective and Efficient Replication of Microstructures,” The 53rd International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN 2009), May 26 – 30, 2009 ,Marco Island, Florida, USA
5. Bin-Da Chan, Kuo-Huang Hsieh, Sen-Yeu Yang, “Development of Transfer Stamping Process to Fabricate Flexible Organic Electrodes” The 2008 International Symposium on Flexible

Electronics and Displays (ISFED), 13-14 November 2008, Hsinchu, Taiwan

6. Tzu-Chien Huang, Sen-Yeu Yang, Po-Hsun Huang, Shuo-Hung Chang “Direct fabrication of microstructures on metal roller using stepped rotating lithography and electroless nickel plating” The 34th International Conference on Macro and Nano Engineering, 15 -18 September 2008 Athens, Greece.
7. Bin-Da Chan , Kuo-Huang Hsieh, Sen-Yeu Yang, “Fabrication of organic flexible electrodes using transfer stamping process” The 34th International Conference on Macro and Nano Engineering, 15 -18 September 2008 Athens, Greece.
8. Y.-J. Weng and S.-Y. Yang “A Study on the Application of Innovative Magnetically Assisted Flexible Magnetic Mold in Large-Area Curved Surface Microstructure Impressing Process Technology”, The 42nd IUPAC World Polymer Congress (MACRO2008), June 29 -July 4 ,2008, Taipei, Taiwan.
9. Y.-J. Weng, Y.-C. Weng and S.-Y. Yang “Development and Research for Applying Creative Magnetic Soft Mold Imprinting Techniques in Microstructure Manufacturing”, The 42nd IUPAC World Polymer Congress (MACRO2008), June 29 - July 4, 2008, Taipei, Taiwan.
10. Sen-Yeu Yang*, Tzu-Chien Huang, Yen-Hao Chen, Po-Hsun Huang, and Ying-Ta Chu “The effects of processing parameters on the oxidation of Be-Cu alloy mold inserts in injection molding”, The 42nd IUPAC World Polymer Congress(MACRO2008), June 29 - July 4, 2008, Taipei, Taiwan.
11. S. Y. Yang, Y. C. Lin, and G. N. Lu “A Study on Local Compression for Injection Molding of Parts with Non-Uniform Thicknesses”, The 42nd IUPAC World Polymer Congress (MACRO2008), June 29 - July 4, 2008, Taipei, Taiwan.
12. C. L. Lee, T. C. Huang,, L. T. Jian, and S. Y. Yang, “Extrusion roller embossing process for rapid fabrication of microlens arrays on PC film”, The 42nd IUPAC World Polymer Congress(MACRO2008), June 29 - July 4, 2008, Taipei, Taiwan.
13. P.H. Huang, T.C. Huang, S.Y. Yang, Y.T. Sun, “Large-area fabrication of polymeric microlens array using UV gas-assisted nanoimprint process”, The 52nd International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN 2008), 27-30 May 2008, Portland, Oregon, USA.
14. Sen-Yeu Yang, Tzu-Chien- Huang, Jian-Ren Ciou, and Po-Hsun Huang, “Diffusers with both surface-relief and particle-diffusing functions fabricated using hybrid extrusion roller embossing”, The 52nd International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN 2008), 27-30 May 2008, Portland, Oregon, USA.
15. S.Y. Yang, T.C. Huang, J.K. Ciou, and B.D. Chan, “A CO₂-assisted embossing method to fabricate polymeric microlens arrays,” 5th International Symposium on Nanomanufacturing, 23-25 Jan 2008, Singapore.
16. Sen-Yeu Yang*, Tzu-Chien Huang, Yen-Hao Chen, and Po-Hsun Huang, “Effects of processing parameters on the form accuracy of plastic aspheric lenses using a BeCu mold insert in injection molding process,” The Polymer Processing Society 24th Annual Meeting, 15-19 Jun. 2008, Salerno, Italy.

17. Sen-Yeu Yang*, Tzu-Chien Huang, Yen-Hao Chen, and Po-Hsun Huang, "Improving lifetime of BeCu injection mold inserts by depositing with Ni-P-PTFE layer on mold surface," The Polymer Processing Society 24th Annual Meeting, 15-19 Jun. 2008, Salerno, Italy.
18. Sen-Yeu Yang*, Tzu-Chien Huang, Jian-Ren Ciou, Po-Hsun Huang, and Jing-Tang Wu, "A Preliminary Experiment of Direct Transcription of Microstructure Using Extrusion Roller-embossing," International Conference on Advanced Manufacturing Technology 2007 (ICAM 2007), 26-30 Nov. 2007, Tainan, Taiwan.
19. L. T. Jiang, T. C. Huang, J. R. Ciou, and S. Y. Yang, "Direct Fabrication of Rigid Microstructures on Metal Rollers Using Dry Film Resist," Proceedings, 33rd International Conference on Micro- and Nano-Engineering (MNE 2007), 23-26 Sep. 2007, Copenhagen, Denmark.
20. F. S. Cheng, P. H. Huang, S. W. Xu, and S. Y. Yang, "Fabrication of Microlens Arrays Using Soft Roller Embossing with Gas-Pressurized Platform," Proceedings, 33rd International Conference on Micro- and Nano-Engineering (MNE 2007), 23-26 Sep. 2007, Copenhagen, Denmark.
21. F. S. Cheng and S. Y. Yang, "A Novel Hydrostatic Pressuring Mechanism for Soft UV-Imprinting Process," Proceedings, 33rd International Conference on Micro- and Nano-Engineering (MNE 2007), 23-26 Sep. 2007, Copenhagen, Denmark
22. S. Y. Yang, F. S. Cheng, T. C. Huang, J. K. Ciou, and J. G. Loeser, "CO₂-assisted Embossing Process for Replication at Lower-than-T_g," The 51st International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIBPN 2007), 29 May.–1 Jun. 2007, Denver, Colorado, USA.
23. S. Y. Yang, C. Y. Chang, J. K. Ciou, J. H. Chang, B. D. Chan, L. A. Wang, and J. G. Loeser, "Fabrication of Micro-Lens Arrays Using CO₂-Assisted Embossing," The 51st International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIBPN 2007), 29 May – 1 Jun 2007, Denver, Colorado, USA.
24. Sen-Yeu Yang, Tzu-Chien Huang, Po-Hsun Huang, Tai-Yu Ko, "Study on Flow Imbalance during Filling a Multi-cavity Mold Using a H-type Runners," Asia Pacific Conference on Optics Manufacture 2007 (APCOM 2007), 11-13 Jan. 2007, Hong Kong, China.
25. Sen-Yeu Yang, Fang-Sung Cheng, Yung-Bin Chen, and Lon A. Wang, "An Innovative Process Using Soft Mold and Gas-Bag Pressuring Mechanism for Replicating Micro/Nano-features Onto Convex Curves Surfaces," Great Lakes Photonics symposium 2006, 12-16 Jun. 2006, Dayton, Ohio, USA.
26. Shih-Chih Nian, Sen-Yeu Yang, "The Experiment and Simulation of Spiral Cavities Filling Process with Impact Micro-Injection Molding," The Polymer Processing Society 22nd Annual Meeting, 2-6 Jul 2006, Yamagata, Japan.
27. Shih-Chih Nian, Sen-Yeu Yang, "The Filling Process of Molding Ultra-Thin Parts with Multi-Cavities," The Polymer Processing Society 22nd Annual Meeting, 2-6 Jul 2006, Yamagata, Japan.

國內會議論文 (Domestic Conference Papers) :

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2. 楊申語，黃子健，邱俊凱，“CO₂輔助氣體壓印製程研究”，第三十屆高分子研討會論文專輯, 1月, 2007.
3. 楊申語，黃子健，黃柏勳，柯岱佑，“成型參數對一模多穴流動不平衡之影響”，第三十屆高分子研討會論文專輯, 1月, 2007.

專利 (Patents) :

1. 吳恩柏、呂文述、楊申語、蔡坤男，減翹半導體封膠外型及其製造裝置，新型專利，中華民國專利証號：155057，專利期限：1999/08/21~2010/05/07。
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3. 黃榮堂、楊申語、江志豪，微感測器共通型封裝的方法，發明專利，中華民國專利証號：169456，專利期限：2002/12/01~2021/11/05。
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6. 謝國煌、楊申語、黃榮山、張致遠，微透鏡陣列之製造方法，發明專利，中華民國專利証號：I289683，專利期限：2007/11/11~2025/09/26。
7. 謝國煌、楊申語、黃榮山、劉士榮、張致遠，用於光電製程之微轉印印章的製造方法，發明專利，中華民國專利証號：I276540，專利期限：2007/03/21~2025/11/29。
8. 謝國煌、黃榮山、楊申語、王大銘、張培仁、張致遠、陳偉源，用於光電製程之微轉印方法，發明專利，中華民國專利証號：I252181，專利期限：2006/04/01~2023/08/28。
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13. 楊申語、黃子健、邱俊凱、詹秉達，改良式壓印裝置，中華民國專利申請中。
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專書 (Books) :

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得獎紀錄 (Honors) :

1. 第四屆「上銀優秀機械碩士論文獎」佳作(2007)
2. 教育部產學研究「奇美獎評審團特別獎」(2007)

研究計畫 (Research Projects) :

1. 微型鏡頭陣列透鏡低溫壓印製程與設備開發，主持人，計畫期間：2008/8/1至2009/7/31，委任單位：行政院國家科學委員會 (97-2221-E-002-084-)。
2. 精密塑膠光學元件複製成型技術與設備之開發研究(II)，主持人，計畫期間：2007/8/1至2008/7/31，委任單位：行政院國家科學委員會 (96-2221-E-002-221-)。
3. 微透鏡陣列滾輪式轉印製程之開發，主持人，計畫期間：2006/8/1至2008/7/31，委任單位：行政院國家科學委員會 (95-2221-E-002-045-MY2)。
4. 精密塑膠光學元件模具與複製成型技術整合研究—子計畫一：精密塑膠光學元件複，主持人，計畫期間：2006/8/1至2007/7/31，委任單位：行政院國家科學委員會。
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6. 奈米壓印系統設備開發及製程研究—子計畫一：流體壓印設備開發研究，主持人，計畫期間：2005/8/1至2006/10/31，委任單位：行政院國家科學委員會(94-2212-E-002-038-)。
7. 奈米壓印系統設備開發及製程研究—總計畫，主持人，計畫期間：2005/8/1至2006/11/30，委任單位：行政院國家科學委員會(94-2212-E-002-037-)。
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研究專長 (Specialty) :

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期刊論文 (Journal Papers) :

1. S.H. Hsieh, Z.-Y. Jiang, "Evaluating investment-return-based design for AMHS in semiconductor manufacturing system," Journal of Intelligent Manufacturing, Vol.18, No.6, pp. 617- 630, 2007.(SCI)
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研究計畫 (Research Projects) :

1. 發展產品成本模式及其在生產系統的應用(III)—國際快遞業的應用，主持人，計畫期間：97年度，委任單位：國科會。
2. 發展產品成本模式及其在生產系統的應用(II)—模具業的應用，主持人，計畫期間：96年度，

委任單位：國科會。

Developing Product Costing Model and its Application in the Production System (II)— The Mold Industry Application, Project leader, Project period:2007.

3. 發展半導體產業成本模式及其在生產系統的應用(I)，主持人，計畫期間：95年度，委任單位：國科會。

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MEMS, Biomedical Microdevices, Microsensors, Compact Modeling, Wireless Sensor Network, Opto-mechatronics Devices

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 31. Hsin-Hung Liao, Ting-Ting Chia, Yu-Lang Chu and Yao-Joe Yang, "White-Light Scanning

Interferometry Using the Stroboscopic Principle,” Asia-Pacific Conference of Transducers and Micro-Nano Technology (APCOT), Singapore, Jun. 2006.

32. Chi-Wei Kuo, Chih-Ming Chien and Yao-Joe Yang, “Macromodeling for Microfluidic Channels,” Nanotech 2006, Boston, USA, May 7-12, 2006.

專利：

1. 楊耀州, 范光照, 鍾添東, 廖柏亭, “2x2 光開關,” 中華民國發明專利(專利號碼:M298130, 2006.06 - 2015.06)
2. 楊耀州, 黃國修等, “新型魚骨式微流體混合器,” 中華民國發明專利(專利號碼:M297788, 2006.06 - 2015.06)
3. 楊耀州, 范光照, 郭文正, “光纖直接對位之微機電式光開關,” 中華民國發明專利(專利號碼:M252940, 2004.12 - 2013.11)

研究計畫 (Research Projects)：

1. 仿生人形機器人之發展-子計畫一：可撓式壓剪應力感測陣列系統之開發，主持人，計畫期間：08/08/01~11/07/31，委任單位：行政院國家科學委員會。(97-2628-E-002-049-MY3)
2. 無線感測智慧服藥提醒與管理系統(1/3)」，主持人，計畫期間：08/11/01~09/10/31，委任單位：行政院國家科學委員會。(97-2221-E-002-157-MY2)
3. 優化黏結溫度之微型 PCR 晶片系統，主持人，計畫期間：08/08/01~09/07/31，委任單位：行政院國家科學委員會。(97-2221-E-002-157-MY2)
4. 優勢重點領域拔尖計畫/工學院/具溫感觸覺壓力感測陣列之人工皮膚，主持人，計畫期間：08/08/01~09/07/31，委任單位：教育部，邁向頂尖大學計畫。(97R0066-57)
5. 先進無線生醫保健監測系統之開發三年計畫第 2 期計畫(3/3)—H 分項計畫—植入式晶片系統製程整合，主持人，計畫期間：07/12/01~08/11/30，委任單位：經濟部。(96-EC-17-A-05-S1-017)
6. (96-2627-E-002-002-)Smart Sustainable Human-centric Home，共同主持人，計畫期間：07/08/01~08/07/31，委任單位：行政院國家科學委員會。
7. 個人化藥物器材之研發—生物晶片之微流體系統的設計與製作（子計畫三），主持人，計畫期間：07/08/01~08/07/31，委任單位：行政院國家科學委員會。
Microfluidic Systems for Biochips (96-2323-B-002-009-)
8. 微/奈米技術於 N x N 光開關系統之發展—子計畫二：NxN 複合式光開關之研製(3/3)，主持人，計畫期間：07/08/01~08/07/31，委任單位：行政院國家科學委員會。
Key Technologies of Nano/Microsystems for NxN Optical Switches (96-2221-E-002-063-)
9. RFID 系統發展及其產業應用—子計畫一：RFID 塑膠晶片製程之開發(3/3)，主持人，計畫期間：06/08/01~07/07/31，委任單位：行政院國家科學委員會。
Development of RFID Plastic Chips (95-2218-E-002-014-)
10. 永續智慧人本住家(1/3)，共同主持人，計畫期間：06/08/01~07/12/31，委任單位：行政院國家科學委員會。
Smart Sustainable Human-Centric Home (95-2627-E-002-002-)

11. 微/奈米技術於 N x N 光開關系統之發展—子計畫二：NxN 複合式光開關之研製(2/3)，主持人，計畫期間：06/08/01~07/07/31，委任單位：行政院國家科學委員會。
Key Technologies of Nano/Microsystems for NxN Optical Switches (95-2221-E-002-239-)
12. 產學合作計畫：波動能量優化轉換之壓電變壓器系統開發(3/3)，共同主持人，計畫期間：06/01/01~07/09/30，委任單位：行政院國家科學委員會。
Development High Efficient Piezoelectric Transformers (95-2622-E-002-003-)
13. RFID 系統發展及其產業應用—子計畫一：RFID 塑膠晶片製程之開發(2/3)，共同主持人，計畫期間：05/08/01~06/07/31，委任單位：行政院國家科學委員會。
Development of RFID (94-2218-E-002-046-)
14. 微/奈米技術於 N x N 光開關系統之發展—子計畫二：NxN 複合式光開關之研製(1/3)，主持人，計畫期間：05/08/01~06/07/31，委任單位：行政院國家科學委員會。
Key Technologies of Nano/Microsystems for NxN Optical Switches (94-2212-E-002-060-)
15. 人工皮膚的開發，子計劃主持人，計畫期間：05/12/01~07/11/30，委任單位：工研院。
Development of Artificial Skin

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M.S. in Mechanical Engineering, National Taiwan University, 1993

東京大學，精密機械工程博士，2002

Ph.D. in Precision Engineering, The University of Tokyo, 2002

研究專長 (Specialty) :

非傳統加工、精微加工、先進機械加工技術

Nontraditional Machining Processes, Precise Micromachining, Advanced Methods of Machining

期刊論文 (Journal Papers) :

1. M. C. Hung, Y.Y. Tsai and L. Wang, 2010, Using Electro-rheological Chain Structure to Improve SKD11 Surface and Different Sizes of Electro-rheological Effect, Advanced Materials Research Vols. 126-128, pp. 527-532. (EI)
2. K.Y. Shue, Y.Y. Tsai and Y.M. Chang, 2010, An investigation of attachment on electrode surface in Dry EDM, Advanced Materials Research Vols. 126-128, pp 407-412 (EI)
3. Y.Y. Tsai, J.S. Su, and C.Y. Su, W.H. He, 2009, "Production of Carbon Nanotubes by Single-Pulse Discharge in Air", the Journal of Materials Processing Technology, Vol.209, pp. 4413-4416. (SCI, EI)
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1. M. C. Hung, Y.Y. Tsai and L. Wang, Using Electro-rheological Chain Structure to Improve SKD11 Surface and Different Sizes of Electro-rheological Effect, The 13th International Symposium on Advances in Abrasive Technology, Taipei, Taiwan, 19-22 September 2010
2. K.Y. Shue, Y.Y. Tsai and Y.M. Chang, An investigation of attachment on electrode surface in Dry EDM, The 13th International Symposium on Advances in Abrasive Technology, Taipei, Taiwan, 19-22 September 2010
3. Y.Y. Tsai and C.K. Chang, Effects of Polymer Particles Suspending in Dielectric Fluid on Surface Roughness of EDM, The International Conference on Manufacturing Science and Engineering (ICMSE 2009), Zhuhai, China, Dec.26-28, 2009
4. Yao Yang Tsai and P.L. Song, Investigation on Colorful Titanium Oxide Reacted Film Using EDM Process, Advances in Materials and Processing Technologies (AMPT) Conference, Kulumpar, Malaysia 2009.Oct.26-29
5. Y.Y. Tsai, A novel method of surface polishing in EDM Process, International Conference on Advanced Manufacturing and Automation (INCAMA) 2009, Tamiladu, INDIA, March 26-28, 2009
6. Y.Y. Tsai and C.K. Chang, SUSPENDING POLYMER POWDERS IN EDM DIELECTRIC FLUID TO DEVELOP EDM-POLISHING COMBINED METHOD, Asia Pacific Conference on Optics Manufacture (APCOM), Taipei, February 11-14, 2009,
7. Y. M. Chang , P. L. Song and Y. Y. Tsai, AN INVESTIGATION INTO ELECTRODE WEAR IN LAYER-CUT EDM PROCESS, Asia Pacific Conference on Optics Manufacture (APCOM), Taipei, February 11-14, 2009,
8. Y.Y. Tsai and C.K. Chang, An investigation into surface roughness of EDM using soft particles suspension in silicone oil, International Symposium on Advances in Abrasive Technology (ISAAT), Awaji, Hyogo, Japan, Sep.30-10.3, 2008
9. Tsung-Cho Wu, Yao-Yang Tsai, Ping-Kung Huang, Shuo-Hung Chang*, Surfacing finishing Using carbon nanotube forest, Proceedings of the ASME 2008 DETC/CIE, New York, USA, Aug. 3-6, 2008
10. Y.Y. Tsai, J.S. Su, and C.Y. Su, Production of Carbon Nanotubes by Single-Pulse Discharge in Air, 8 th Asia-Pacific Conference on Materials Processing (2008), Guilin-Guangzhou, China, June15-20, 2008.
11. Y.Y. Tsai, C.K. Chang, Polishing Effects of polymer particles in PMD - EDM process, 8th Asia-Pacific Conference on Materials Processing (2008), Guilin-Guangzhou, China, June15-20,

2008.

12. Yao-Yang Tsai, Jia-Shiang Su, Cherng-Yuh Su and Chung-Kwei Lin, The Effect of Processing Parameters on the Synthesis of CNTs by a Micro Electro-Discharge Technique under the atmosphere, 2nd International Conference on New Diamond and Nano Carbons (NDNC2008), Taipei, May 26-29, 2008
13. Yao-Yang Tsai, Chih-Kang Chang, and Chien-Hao Tseng, "Polishing Effect of Polymer Particles Mixed in EDM Process," Proceeding of Taiwan-Tohoku Joint International Symposium for Mechanical Science based on Nanotechnology, Dec.7, 2007, pp.49-54
14. Yao-Yang Tsai, and Chih-Kang Chang, "Influence of Non-metal Particles Mixed in Dielectric Fluid Electric Discharge Machining," Proceeding of Asia Electric Machining Symposium, 2007. Nagoya, Japan, Nov. 28-30 pp70-75
15. Y.Y. Tsai, C.H. Tseng, C.K. Chang, "Development of a Combined Machining Method Using Electrorheological Fluids for EDM," Advance in Material and Process Technology (AMPT) 2007 Conference, Daejeon, Korea, Oct, 2007.
16. Y.Y. Tsai, C.T. Lu, "Influence of Current Impulse on Machining Characteristics in EDM," Advance in Material and Process Technology (AMPT) 2007 Conference, Daejeon, Korea, Oct, 2007.
17. Y. Y. Tsai, and C.W. Chung, "The Effects of Powder Behavior in Powder-Mixed Dielectric EDM," Advance in Material and Process Technology (AMPT) 2006 Conference, Las Vegas, USA, July, 2006.

國內會議論文 (Domestic Conference Papers) :

1. Ming-Chih Hung, Chih-Kang. Chang, Yao-Yang Tsai, Lin Wang, Surface Polishing and Improvement by Powder Mixed Dielectric Electric Discharge Machining Combined Electrorheological Effect,磨粒加工學會 2009 年會暨加工技術研討會, 台中, Dec. 18, 2009
2. 蔡曜陽、宋沛倫, "放電加工製作彩色氧化鈦反應層之研究", 中國機械工程學會第二十六屆全國學術研討會論文, D02-001, 台南, Nov. 20-21, 2009
3. 蔡曜陽、宋沛倫, "放電加工製作彩色氧化鈦反應層之研究", 中國機械工程學會第二十六屆全國學術研討會論文, 11, 2009
4. Ming-Chih Hung, Chih-Kang. Chang, Yao-Yang Tsai, Lin Wang, "Surface Polishing and Improvement by Powder Mixed Dielectric Electric Discharge Machining Combined Electrorheological Effect", 2009 磨粒加工學會年會暨加工技術研討會, 12, 2009
5. 蔡曜陽、張志綱, "利用高分子電流變液於放電拋光複合製程之開發與研究", 中國機械工程學會第二十五屆全國學術研討會論文,彰化, Nov. 21-22, 2008
6. Y.Y. Tsai, and C.H. Tzeng, "Development of EDM-Polishing by Electrorheological Fluid", Proceeding of SME on Precision Manufacturing, Tainan, Nov. 2008
7. 蔡曜陽、呂政達, "放電脈衝電流上升與下降對於加工特性之探討," 中國機械工程學會第二十四屆全國學術研討會論文集,中壢, Nov.2007
8. 蔡曜陽、邱季霖, "微球接頭組裝配合間隙之分析," 中國機械工程學會第二十四屆全國學

術研討會論文,中壢, Nov.2007

9. 蔡曜陽、呂政達,“電流波形對於放電加工特性之影響,” 2007 模具技術與論文發表會論文集,台北, Aug.2007, 349-354
10. 蔡曜陽、邱季霖,“微球狀元件組裝之模擬設計,” 2007 模具技術與論文發表會論文集, 台北, Aug.2007
11. 蘇嘉祥、蔡曜陽,“於大氣下應用單發放電製造奈米碳管,” 第五屆精密機械與製造技術研討會, 墾丁, May.2007
12. 蔡曜陽、邱季霖,“微細球狀元件組裝之模擬與設計,” 第五屆精密機械與製造技術研討會, 墾丁, May.2007
13. 蔡曜陽、蔡清展,“放電加工液中添加粉末對放電波形的探討及其加工影響,” 中國機械工程學會第二十三屆全國學術研討會論文集,台南, Nov.2006
14. 蔡曜陽、曾建豪,“電流變液中之放電拋光技術開發,” 第五屆精密製造學術研討會, 高雄, Nov. 2006
15. 蔡曜陽、洪國維,“水溶性介電液對於鈦合金放電加工之探討,” 2006 模具技術與論文發表會論文集,台北, Aug.2006
16. 蔡曜陽、蔡清展,“放電加工液中添加粉末的效果及其機制探討,” 2006 模具技術與論文發表會論文集, 台北, Aug.2006
17. 蔡曜陽、曾建豪,“電流變液中放電加工技術之開發,” 第四屆精密機械與製造技術研討會論文集, 墾丁, Apr.2006

專利(Patents) :

1. 表面處理方法及其裝置, 中華民國發明專利, 申請日:2007/03/02, 申請號:096107298, 公開日:2008/09/16, 公開號:200836865
2. SURFACE TREATMENT METHOD AND DEVICE THEREOF, US Patent 20080000584
3. 奈米碳管之製作設備及其製作方法, 中華民國發明專利, 申請日:2007/01/17, 申請號:096101792, 公開日:2008/08/01, 公開號:200831403
4. 納米碳管的制作设备及其制作方法, 中國大陸發明專利, 申請日:2007/01/29,申請號:200710006181.9, 公開日:2008/08/06, 公開號:CN101234760
5. 一種具拋光效果之新式加工液, 中華民國發明專利, 申請日:2008/11/28, 申請號:097146435, 初審審查中
6. DIELECTRIC FLUID WITH POLISHING EFFECTS, US Patent, Application date:2008/12/18
7. 染白含鈦金屬與其製造方法, 中華民國發明專利, 申請日:2010/08/20,

研究計畫(Research Projects) :

1. 產業先進設備人才培育計畫, 智慧化工具機產業先進設備人才培育教學資源中心夥伴學校主持人, 計畫期間:11/01/01~11/12/31, 委任單位:教育部。
2. 蔡曜陽, 氣中放電加工機之研發, 經濟部工業局產學聯合研發計畫, 主持人, 計畫期間:

09/04/01~09/10/31，委任單位：教育部。

3. 產業設備系統設計人才培育先導型計畫，工具機系統設計人才培育教學資源中心夥伴學校主持人，計畫期間：07/08/01~09/01/31，委任單位：教育部。
4. 利用電流變液發展微放電拋光複合加工技術之研發(96-2628-E-002-012-MY3)，主持人，計畫期間：07/08/01~10/07/31，委任單位：國科會。
5. 玻璃基板劃線切割加工技術之研究，主持人，計畫期間：07/3/01~08/2/28，委任單位：友達光電(股)公司。
6. 3D 創成微放電銑削製程之電極消耗與即時補償技術(NSC 95-2221-E-002-047-MY2)，主持人，計畫期間：06/08/01~08/07/31，委任單位：國科會。
7. 多工型臥式高精度微小 4 軸 CNC 加工機之研發及其應用—總計畫(3/3)，協同主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
8. 微放電加工狀態之線上偵測系統之開發，主持人，計畫期間：06/05/01~07/04/30，委任單位：國科會。
9. 多工型臥式高精度微小 4 軸 CNC 加工機之研發及其應用—子計畫二：微加工製程的整合化技術研發(3/3) (NSC95-2218-E-002-009-)，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
10. 多工型臥式高精度微小 4 軸 CNC 加工機之研發及其應用—子計畫二：微加工製程的整合化技術研發(2/3) (NSC94-2218-E-002-041-)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
11. 多工型臥式高精度微小 4 軸 CNC 加工機之研發及其應用—總計畫(2/3)，協同主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

蘇培珍

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台灣大學，機械工程學士，2001

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研究專長 (Specialty) :

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Micro-Fuel Cell, PowerMEMS, Advanced energy materials, Micro/Nano-fabrication,
Atomic layer deposition

期刊論文 (Journal Papers) :

1. Pei-Chen Su, Cheng-Chieh Chao, Joon Shim, Rainer Fasching, and Fritz B. Prinz, "Solid Oxide Fuel Cell with Corrugated Thin Film Electrolyte", *Nano Letters* vol. 8, pp. 2289-2292, 2008
2. H. Huang, M. Nakamura, P.-C. Su, R. Fasching, Y. Saito, F.B. Prinz, "High-Performance Ultra Thin Solid Oxide Fuel Cells For Low Temperature Operation", *Journal of Electrochemical Society*, 154, 1, pp B20-B24 ,2006
3. Sangkyun Kang, Pei-Chen Su, Yuji Saito, Fritz Prinz, Yong-il Park, "Thin Film Solid Oxide Fuel Cells on Porous Nickel Substrates with Multi-Stage Nano Hole Array," *Journal of the Electrochemical Society*, 153, 3, 553-559, 2006
4. Yong-Il Park, Pei-Chen Su, Suk Won Cha, Yuji Saito, Fritz B. Prinz, "Thin-Film Solid Oxide Fuel Cells Using Gas-Tight YSZ Thin Films on Nano-porous Substrates," *Journal of the Electrochemical Society*, 153, 2, 431-436, 2006
5. P. C. Su and S. K. Wu, "The Four-step Multiple Stage Transformation in Deformed and Annealed Ti49Ni51 Shape Memory Alloy," *Acta Materialia*, v52, issue 7, 2003

國際會議論文 (International Conference Papers) :

1. Pei-Chen Su and Fritz B. Prinz, “Silicon-based Thin Film Solid Oxide Fuel Cell Array”, Proceedings of SPIE Vol. 7649, 764907, April 2010
2. Pei-Chen Su, Cheng-Chieh Chao, Young-Beom Kim, and Fritz B. Prinz, “Three-Dimensional Thin-Film Electrolyte Micro Solid Oxide Fuel Cell Array,” 214th meeting of Electrochemical Society, October 2008
3. Pei-Chen Su, Cheng-Chieh Chao, Rainer Fasching, and Fritz B. Prinz, “Solid Oxide Fuel Cells with Corrugated Nano Thin Film Electrolyte,” Berkeley Nano Forum, April 2008
4. Pei-Chen Su, Rainer Fasching, and Fritz Prinz, “High Surface Area Density Nano Thin Film Solid Oxide Fuel Cells,” PowerMEMS 2007 International Conference, Freiberg, Germany, November 2007
5. Pei-Chen Su, Cheng-Chieh Chao, Rainer Fasching, and Fritz Prinz, “Solid Oxide Fuel Cells with Corrugated Nano Thin Film Electrolyte” ASME 2nd Energy Nanotechnology International Conference, Santa Clara, CA, USA, September 2007
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研究專長 (Specialty) :

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期刊論文 (Journal Papers) :

1. **Li, Kuan-Ming** and Liang, Steven Y., "Modeling of cutting temperature in near dry machining," *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, v 128, n 2, May, 2006, p 416-424.
2. **Li, Kuan-Ming** and Liang, Steven Y. "Cutting Fluid Aerosol Generation in Near Dry Machining," *International Journal of Manufacturing Research*, v 1, n 3 2006, p 283 - 299
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4. **Li, Kuan-Ming** and Liang, Steven Y., "Predictive Models for Flank Wear in Turning under Flood Cooling Condition," *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, v 129, n 3, June, 2007, p 513-519.
5. **Li, Kuan-Ming** and Liang, Steven Y., "Performance Profiling of Minimum Quantity Lubrication in Machining", *International Journal of Advanced Manufacturing*, v 35, n 3-4, December, 2007, p 226-233.
6. **Li, Kuan-Ming** and Chou, Shih-Yen, "Experimental Evaluation Of Minimum Quantity Lubrication in Near Micro-Milling", *Journal of Materials Processing Technology*, v 210, n 15, p 2163-2170, 2010
7. **Li, Kuan-Ming** and Liang, Steven Y., "Flank Wear Model for Near Dry Turning under Built-Up Edge Effect," *Journal of Chinese Society of Mechanical Engineers*, (in press)

國際會議論文 (International Conference Papers) :

1. **Li, Kuan-Ming** and Liang, Steven Y., 2004, "Predictive Modeling of Environmental Impact in Near Dry Turning," CD Proceedings of NSF-Division of Design and Manufacturing Innovation Grandees Conference, January 2004.
2. **Li, Kuan-Ming** and Liang, Steven Y., 2005, "Predictive models for flank wear in near dry machining," American Society of Mechanical Engineers, Manufacturing Engineering Division, v16-1, 2005, p 49-57.
3. **Li, Kuan-Ming** and Liang, Steven Y., 2005, "Predictive Modeling of Environmental Impact and Tool Performance in Near Dry Turning," CD Proceedings of NSF-Division of Design and Manufacturing Innovation Grandees Conference, January 2005.
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5. **Li, Kuan-Ming**, "Modeling of Flank Wear in Near Dry Turning under Built-up Edge Effect," Proceedings of 2nd International Forum on Systems and Mechatronics, December 2007, p 147-156.
6. **Li, Kuan-Ming** and Chou, Shih-Yen, "Effect of Minimum Quantity Lubrication on Tool Wear and Surface Roughness in Micro-Milling," CD Proceedings of the 2009 ASME International Manufacturing Science and Engineering Conference (MSEC), West Lafayette, USA, October 4-7, 2009, MSEC2009-84353.

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研究專長 (Specialty) :

熱力學、流體力學、熱傳學

Thermodynamics, Fluid dynamics, Heat transfer

期刊論文 (Journal Papers) :

1. Chia-Chien Chu, Shyan-Fu Chou, Heng-I Lin and Yi-Hai Liann, 2009, "An experimental investigation of swirl atomizer sprays," Heat and Mass Transfer, Vol. 45, No. 1, pp.11-22.
2. Chou, S. F., Lin, H. I., and Wang, Y. P., 2007, "Performance Improvement on Water-Cooled Cold-Plate," WSEAS Trans. on Heat and Mass Transfer, Issue 5, Vol. 1, pp.618-623.
3. Chu, C. C., Chou, S. F., Lin, H. I., Lian, Y. H., 2007, "Theoretical Analysis of Heat and Mass Transfer in Swirl Atomizers," Heat Mass Transfer, Vol. 43, pp.1213-1224.
4. Chou, S. F., and Chu, C. C., 2006, "Application of Swirl Generators to Enhance Performance of Waterheads on Liquid Coolers," WSEAS Trans. On Fluid Mechanics, Issue 5, Vol. 1, pp. 439-444.

國際會議論文 (International Conference Papers) :

1. Huang, C. C., and Chou, S. F., 2007/11, "Large Area Microcrystalline Si Films Grown by Electronic Cyclotron Resonance Chemical Vapor Deposition at Low Temperature," 9th International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures, Tokyo, Japan.
2. Chou, S. F., Lin, H. I., and Wang, Y. P., 2007/1, "Performance Improvement on Water-Cooled Cold-Plate," The 4th WSEAS International Conference on Heat and Mass Transfer (HMT'07), Gold Coast, Australia.

3. Chou, S. F., and Chu, C. C., 2006/8, "Application of Swirl Generators to Enhance Performance of Waterheads on Liquid Coolers," The 4th WSEAS International Conference on Fluid Mechanics and Aerodynamics, Elounda, Agios Nikolaos, Crete Island, Greece.

研究計畫 (Research Projects) :

1. 具備渦漩流之水冷式冷卻板，主持人，計畫期間：07/01/01~07/12/31，委任單位：財團法人宗倬章先生教育基金會。
2. 一維奈米碳管/線合成，奈米複合結構及可調式 CMOS 奈米管振盪器研製-子計劃一：一維奈米線合成，奈米碳管複材製程及性能量測(3/3)，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
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研究專長 (Specialty) :

流體力學、計算流體力學、熱傳

Fluid Mechanics, Computational Fluid Dynamics, Heat Transfer

期刊論文 (Journal Papers) :

1. Shih-Sheng Chen, Ruey-Hor Yen*, and An-Bang Wang, 2011, Investigation of the Resonant Phenomenon of Flow around a Vibrating Cylinder in a Sub-critical Regime, *Physics of Fluids*, vol. 23, 014105, published on line(SCI, NSC 95-2221-E-002-224)
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3. Chen CY, Yen RH*, Chang CC. 2011. Spectral element analysis of herringbone grooved journal bearings with groove-ridge discontinuity. *International Journal for Numerical Methods in Fluids*. DOI: 10.1002/flid.2303. (SCI, NSC 91-2212-E002-094)
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5. Liu CS, Tsai MC, Yen RH, Lin PD, Chen CY. 2010. Design and experimental verification of novel hydrodynamic grooved journal bearing. *Journal of Chinese Society of Mechanical Engineers*: 31(2), pp. 137-144. (SCI)
6. Fan, K.C., Yen, R.H. and Ho, C.C. 2006, "Study of a Miniature Linear Bearing Stage System," *Materials Science Forum*, Vols. 505-507, pp. 13-18.

國際會議論文 (International Conference Papers) :

1. František Maršik , Zdenk Trávnísek, Ruey-Hor Yen, Wen-Yun, Tu, An-Bang Wang, St-Re-Pr Relationship for a heated/cooled cylinder in laminar cross flow, Proceedings of CHT-08 ICHMT International Symposium on Advances in Computational Heat Transfer, May, 2008, Morocco

國內會議論文 (Domestic Conference Papers) :

1. 顏瑞和，陳建佑，蔡政志，2007，電熱織物之熱傳分析，中國機械工程學會第二十四屆全國學術研討會。

專利 (Patents) :

1. 顏瑞和，陳建佑，發明專利：流體動壓軸承，中華民國 I 332061，2010

研究計畫 (Research Projects) :

1. 高功效電熱織物設計與評估研究，主持人，計畫期間：07/04/01~07/11/30，委任單位：紡織綜合研究所
Simulation of High Power Heating Fabric Elements, PI; Project period: 07/04/01~07/11/30 , Organization: Taiwan Textile Research Institute.
2. 前瞻性太陽能應用技術研發 (3/4)，協同主持人，計畫期間：07/02/01~07/12/31，委任單位：經濟部能源局。
Advanced Solar Technology Development (3/4), Co-PI; Project period: 07/02/08~07/12/31, Organization: Dept. of Energy, Ministry of Economics.
3. 模式展開基底的非結構性寬頻元素法的程式發展(2/2)，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
Unstructured Spectral Element Method Based on Modal Expansion Basis(2/2), PI; Project period: 06/08/01~07/07/31, Organization: NSC
4. 前瞻性太陽能應用技術研發 (2/4)，協同主持人，計畫期間：06/01/1~06/12/31，委任單位：經濟部能源局。
Advanced Solar Technology Development (2/4), Co-PI; Project period: 06/01/01~06/12/31, Organization: Dept. of Energy, Ministry of Economics.
5. 模式展開基底的非結構性寬頻元素法的程式發展(1/2)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會
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Fluid and thermoscience

期刊論文 (Journal Papers) :

1. Huang, HF; Lai, CL, 2006, PROCEEDINGS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES, Vol.462-2071, pp.2017-2038, "Enhancement of Mass Transport and Separation of Species by Oscillatory Electroosmotic Flows."(SCI)

研究計畫 (Research Projects) :

1. 微管內壁液膜之穩定性分析，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。
2. 微管內壁液膜之穩定性分析，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
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4. 對流效應對雙成分合金固化之影響-固化速率、多重解與形態不穩定研究(2/2)，主持人，計畫期間：06/08/01~07/07/31。
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6. 利用脈動式電滲透流以提高溶質的質傳與分離速率(II)，主持人，計畫期間：04/08/01~05/07/31，委任單位：國科會。

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Heat Transfer, Fluid Mechanics, Mobile Pollution, Fuel Cell

期刊論文 (Journal Papers) :

1. C.-Y. Huang, Y.-Y. Chen, C.-C. Su and C.-F. Hsu, 2007, The Cleanup of CO in Hydrogen for PEMFC Applications Using Pt, Ru, Co, and Fe in PROX Reaction, J. Power Sources, Vol. 174, pp. 294-301. (SCI 與 EI 期刊，Impact Factor(2006) = 3.521，國科會補助計畫編號：NSC94-2218-E-002-005)
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3. J.-H. Lin, C.-Y. Huang, and C.-C. Su, 2007, Dimensional Analysis for the Heat Transfer Characteristics in the Corrugated Channels of Plate Heat Exchangers, Int. Communications in Heat & Mass Transfer, Vol. 34, pp. 304-312. (SCI 與 EI 期刊，Impact Factor(2006) = 0.708，國科會補助計畫編號：NSC90-2212-E-002-201)
4. C.J. Li, J.H. Lin, and C.C. Su, 2006, Heat Transfer in the Evaporators of a Double-Evaporator Refrigerating System, Heat Transfer Engineering, Vol. 27(8), pp.16-24. (SCI 與 EI 期刊，Impact Factor(2006) = 0.710，國科會補助計畫編號：NSC89-2212-E-002-143)

國際會議論文 (International Conference Papers) :

1. C.Y. Huang, J.H. Lin, W.H. Hsu, and C.C. Su, Experimental Studies on the Performance of a Small Reformer for Hydrogen Generation, Paper No. FUELCELL2006-97045, 4th Int. Conf. on Fuel Cell Science, Engineering, and Technology, June 19-21, 2006, Irvine, CA, USA. (國科會補助計畫編號：NSC93-2218-E-002-012)

國內會議論文 (Domestic Conference Papers) :

1. 吳金瑞，蘇金佳，圓形洞道內雙線性熱源位置對於剖面溫度之效應
第二十七屆機械工程研討會，2010。
2. 楊鴻輝，蘇金佳，譚介堯，全圓洞道內具單線性熱源之冰水管間接冷卻系統之自然對流熱傳研究，第二十七屆機械工程研討會，2010。
3. 鄭心瑜，蘇金佳，空調環境相對濕度對水分散失的影響，第二十七屆機械工程研討會，2010。
4. 鄭易林¹，蘇金佳²，楊鴻輝，全圓洞道內線性熱源位置對剖面溫度的效應論文編號 A14-006，2009。
5. 黃建華¹、蘇金佳，優先氧化法對微型重組器去除 CO 之效應第二十六屆機械工程研討會，論文編號 A14-004，2009。(國科會補助計畫編號：NSC96-2221-E-002-192)
6. 陳宗成²、蘇厚華²、蘇金佳微型甲醇重組器參數與性能研究第二十六屆機械工程研討會，論文編號 A14-026，2009。(國科會補助計畫編號：NSC96-2221-E-002-192)
7. 袁國傑，蘇金佳，黃智勇，微流道甲醇重組器內之重組層參數之研究，第二十五屆機械工程研討會，論文編號 A14-14，2008。(國科會補助計畫編號：NSC96-2221-E-002-192)
8. 劉彥宏，蘇金佳，半圓洞道內線性熱源位置對剖面溫度的效應，第二十五屆機械工程研討會，論文編號 A01-23，2008。
9. 黃智勇，陳彥伊，陳振宇，蘇金佳，徐全福，小型甲醇重組器系統之性能測試，第二屆台灣氫能與燃料電池學術研討會，2008。
10. 林俊宏，蔡嘉晉與蘇金佳，發生器對小型氨水型吸收式冷凍系統之性能影響研究，第二十四屆機械工程研討會，論文編號 A19-0021，2007。
11. 黃智勇，陳振宇與蘇金佳，燃料電池重組器中水與觸媒對優先氧化反應的影響，第二十四屆機械工程研討會，論文編號 A17-0014，2007。(國科會補助計畫編號：NSC95-2218-E-002-001)
12. 孫禹銘，何柏慶與蘇金佳，半圓洞道內冰水管間接冷卻系統之自然對流熱傳研究，第二十四屆機械工程研討會，論文編號 A01-0013，2007。
13. 孫禹銘，杜文祥與蘇金佳，地下電纜洞道內冰水管間接冷卻系統之性能研究，第二十三屆機械工程研討會，論文編號 A9-004，2006。
14. 黃智勇，陳彥伊與蘇金佳，燃料電池重組器觸媒對反應後 CO 氣體濃度的影響，第二十三屆機械工程研討會，論文編號 A8-095，2006。(國科會補助計畫編號：SC94-2218-E-002-005)
15. 黃智勇，陳彥伊與蘇金佳，燃料電池重組器 Ru 觸媒對反應後 CO 氣體濃度的影響，第一屆台灣氫能與燃料電池學術研討會，2006。(國科會補助計畫編號：SC94-2218-E-002-005)
16. 黃智勇，周中洋與蘇金佳，CuO-ZnO-Al₂O₃，CuO-ZnO-Al₂O₃-Pt-Rh 與 Pt-Rh 觸媒對小型

重組器性能影響之實驗研究, 第一屆台灣氫能與燃料電池學術研討會, 2006。(國科會補助計畫編號: NSC93-2218-E-002-012)

研究計畫 (Research Projects) :

1. 微型質子交換膜燃料電池組系統(含微重組器)製作與性能分析-子計畫四: 微型燃料重組與氫純化系統設計與性能測試研究, 主持人, 計畫期間: 08/08/01~09/07/31, 委任單位: 國科會。
2. 微型質子交換膜燃料電池系統製作,組裝及性能分析-子計畫三: 微型質子交換膜燃料電池重組器設計製作及性能分析研究, 主持人, 計畫期間: 07/08/01~08/07/31, 委任單位: 國科會。
3. 微型質子交換膜燃料電池組(含元件)設計與製作-子計畫四: 微型質子交換膜燃料電池重組器設計與製作(3/3), 主持人, 計畫期間: 06/08/01~07/07/31, 委任單位: 委任單位: 國科會。
4. 大安變電所相關 345KV 電纜線路規劃設計及監造技術服務工作高壓地下電纜隧道間接水冷系統模型實驗研究計, 主持人, 計畫期間: 05/11/01~06/11/01, 委任單位: 財團法人中華顧問工程司。
5. 微型質子交換膜燃料電池組(含元件)設計與製作-子計畫四: 微型質子交換膜燃料電池重組器設計與製作(2/3), 主持人, 計畫期間: 05/08/01~06/07/31, 委任單位: 國科會。

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電子散熱、冷凍空調、能源工程、節能技術

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期刊論文 (Journal Papers) :

1. Y. C. Weng, H. P. Cho, C. C. Chang, and S. L. Chen*, “Embedded Heat Pipe with Latent Heat Storage for Electronic Cooling”, Applied energy, Volume 88, Issue 5, Pages 1825-1833, 2011.
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4. Ching-Song, Jwo, Chien-Chih Chen, Ho Chang, Tun-Ping Teng, S. L. Chen *, Shin-Chin Huang, “ Simulating Catalyst Filter Airflow and Formaldehyde Photocatalysis in the Duct”, HVAC&R RESEARCH, Vol. 16, pp 497~512 , 2010.
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7. Ho Chang, Mu-Jung Kao, Kouhsiu David Huang, S. L. Chen, and Zhi-Rong Yu, “A Novel Photo-Thermoelectric Generator Integrating Dye-sensitized Solar Cells with Thermoelectric Modules”, Japanese Journal of Applied Physics Vol.49, pp.1~4, 2010.
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2. Ching-Song Jwo, Chao-Chun Chien, Hung-Pin Cho, Jiun-Yau Wang, Sih-Li Chen*, “The Measurement of Bicycle Exercising Energy Transfer” ,6th International Symposium on Precision Measurements and Instrumentation , Hangzhou, China Aug.8 – Aug.11, 2010.
3. C. K. Kung, C. C. Chang, S. L. Chen, “Vapor chamber energy storage system with Al₂O₃ and

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11. H. S. Huang, S. C. Kuo, Y. W. Chang, and S. L. Chen*, “An Experimental Investigation of Thermoelectric Water Cooler Module”, 2nd International Forum on Heat Transfer, Tokyo, Japan, Sept.17-19, 2008.
12. C. C. Chang, S. C. Kuo, C. K. Huang, and S. L. Chen*, “The Investigation of Motor Cooling

- Performance”, The International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics, Paris, France, July 4-6, 2008.
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 18. J. C. Wang and S. L. Chen*, “Thermal Performance of Two-Phase Closed Thermosyphon Cooling System”, The Third International Conference on Thermal Engineering Theory and Applications, Amman, Jordan, May 21-23, 2007.
 19. Y. W. Chang, M. T. Ke, S. L. Chen*, “Two Phase Close Loop Thermosyphon Cooling System”, 17th International Symposium on Transport Phenomena, Toyama, Japan, Sept.4-8, 2006.
 20. B. R. Chen, H. J. Chen, and S. L. Chen*, “Thermal Storage in a Two-Phase Closed Thermosyphon System”, 9th World Renewable Energy Congress, Florence, Italy, Aug.19-25, 2006.

國內會議論文 (Domestic Conference Papers) :

1. 陳柏任、張至中、郭祐甫、陳希立，“吸收液除濕與再生熱質傳之性能研究”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。
2. 李文興、梁乃文、林冠廷、陳希立，“淺層溫能於外氣空調系統應用研究(一)”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。結合淺層溫能之太陽能全外氣空調系統研究”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。
3. 陳柏任、龔仲寬、郭祐甫、陳希立，“結合淺層溫能之太陽能全外氣空調系統節能效益驗證與模擬方法研究”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。
4. 李文興、梁乃文、林冠廷、陳希立，“淺層溫能於外氣空調系統應用研究(一)”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。結合淺層溫能之太陽能全外氣空調系統最佳運轉控制研究”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。
5. 江沅晉、張至中、梁乃文、楊凱傑、陳希立，“淺層溫能於外氣空調系統應用研究(一)”中國機械工程學會第二十七屆全國學術研討會論文集,民國99年12月10、11日。
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專利 (Patents) :

1. 空調用之除濕裝置(申請中), 2010。

專書 (Books) :

1. 空調系統最佳化設計與節能技術, 陳希立、陳輝俊, 2010。
2. 工業冷凍系統與配套應用, 陳希立、陳輝俊, 2010。

國科會研究計畫 (NSC Research Projects) :

1. 變極調速馬達的設備應用技術開發-變極調速馬達應用於空調系統之研究, 計畫期間 10/06/01 ~ 10/12/31。
2. 自動調節風門之性能實驗分析與模擬驗證研究, 計畫期間 09/011/01 ~ 10/10/31, 計畫編號: 98-2622-E-002-022-CC3。
3. 能源管理最佳化之家用多功空調機研發, 計畫期間 09/010/01 ~ 10/9/30, 計畫編號: 99-2218-E-002-010-。
4. 結合淺層溫能之太陽能全外氣空調系統, 計畫期間 09/011/01 ~ 10/12/31, 計畫編號: , 計畫編號: 99-2218-E-002-010-。

5. 可彎曲薄型熱管微機電製作開發與分析研究，計畫期間 09/08/01 ~ 12/07/31，計畫編號: 099-2811-E-002-004-。
6. 中央空調系統節能效益驗證模式與最佳化運轉研究，計畫期間：09/01/01~10/12/31，計畫編號: 098-2811-E-002-073-。
7. 兩相流密閉迴路式蒸發腔體散熱模組之研究(III)，計畫期間：08/08/01~09/07/31，計畫編號: 95-2221-E-002-340-MY3。
8. 電子半導體廠節能效益驗證模擬方法之研究，計畫期間：08/01/01~08/12/31，計畫編號:97-ET-7-002-002-ET。
9. 熱電致冷晶片製水研究-利用熱電晶片凝結空氣中水蒸氣分析與應用，計畫期間：07/01/01~07/12/31，計畫編號: 96-2815-C-002-033-E。
10. 提昇產業技術及人才培育研究計畫-冰水主機與冷卻水塔群組最佳化運轉策略研究，計畫期間：07/11/01~08/10/31，計畫編號: 96-2622-E-002-024-CC3。
11. 冰水主機與冷卻水塔群組最佳化運轉策略研究，計畫期間：07/11/01~08/10/31，計畫編號: NSC96-2622-E-002-024-CC3。
12. 兩相流密閉迴路式蒸發腔體散熱模組之研究(II)，計畫期間：07/08/01~08/07/31，計畫編號: 95-2221-E-002-340-MY3。
13. TFT-LCD 廠製程排氣系統之最佳化設計與節能運轉分析，計畫期間：07/01/01~07/12/31，計畫編號: 96-ET-7-002-010-ET。
14. 太陽能驅動之 LED 燈照明系統--散熱應用及光電系統整合，計畫期間：06/11/01~07/10/31，計畫編號: 95-2815-C-002-112-E。
15. 提升產業技術及人才培育研究計畫-應用懲罰函數法於冰水主機群組最佳化開機策略之研究，計畫期間：06/11/01~08/10/31，計畫編號: 95-2622-E-002-025-CC3。
16. 應用懲罰函數法於冰水主機群組最佳化開機策略之研究，計畫期間：06/11/01~07/10/31，計畫編號: NSC95-2622-E-002-025-CC3。
17. 兩相流密閉迴路式蒸發腔體散熱模組之研究(I)，計畫期間：06/08/01~07/07/31，計畫編號: 95-2221-E-002-340-MY3。
18. 中央空調系統之運轉模擬與最佳化設計，計畫期間：06/01/01~06/12/31，計畫編號: 95-ET-7-002-010-ET。
19. 回饋模擬法應用於製程排氣系統平衡調整之研究，計畫期間：05/11/01~06/10/31，計畫編號: NSC94-2622-E-002-026-CC3。
20. 微冷卻蒸氣腔體之研究，計畫期間：05/08/01~06/07/31，委任單位：國科會，計畫編號:94-2212-E-002-050-。
21. 建築材料儲能裝置之研究，計畫期間：05/08/01~06/07/31，計畫編號：94-ET-7-002-002-ET。
22. 提升產業技術及人才培育研究計畫-回饋模擬法應用於製程排氣系統平衡調整之研究，計畫期間：05/08/01~06/07/31，計畫編號: 94-2622-E-002-026-CC3。
23. 熱管鰭片模組散熱效能研究，計畫期間：05/08/01~06/07/31，計畫編號：94-2815-C-002-042-E。

產學研究計畫

1. 淺層溫能應用於庶民空調及高效再生能源發電裝置，計畫期間：10/11/15~12/11/14，委任單位：台大嚴慶齡工業研究中心，合作廠商:巨獅創意股份有限公司。
2. 綠色產品開發與潔淨能源應用之研究(2)，計畫期間：09/10/15~10/10/14，委任單位：台大嚴慶齡工業研究中心，合作廠商:巨獅創意股份有限公司。
3. 蒸氣腔體性能量測方法建立，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:佳霖科技股份有限公司。
4. 熱管性能測試暨散熱模組動態特性，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:和碩科技股份有限公司。
5. 捷運隧道通風及排煙系統功能研究，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:中興工程顧問公司。
6. 熱電製冷晶片應用於 LED 散熱之研究，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:訊凱國際股份有限公司。
7. 蒸氣壓縮循環式電子散熱模組之研，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:千瑞國際開發股份有限公司。
8. 太陽能光電增強發電模組，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:立得基公司。
9. 綠色產品開發與潔淨能源應用之研究(1)，計畫期間：08/08/01~09/07/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:巨獅創意股份有限公司。
10. 微型壓縮泵與氣泡泵電子散熱模組之研究，計畫期間：08/08/01~09/07/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:和碩科技股份有限公司。
11. 汽車風扇葉片設計最佳化，計畫期間：08/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:裕隆日產汽車股份有限公司。
12. 96 年度產業人才投資方案－冷凍空冷能回收節能設備開發與測試，計畫期間：07/01/01~07/12/31，委任單位：台大嚴慶齡工業研究中心。
13. 冷凍空調節能技術與應用第 1 期，計畫期間：07/01/01~07/12/31，委任單位：台大嚴慶齡工業研究中心。
14. 高功率 LED 製程之研究，計畫期間：07/01/01~07/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:協禧機電股份有限公司。
15. 迴路式熱虹吸熱板性能之研究，計畫期間：07/01/01~07/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:英業達股份有限公司。
16. 大型馬達熱傳分析，計畫期間：07/01/01~08/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:中國鋼鐵股份有限公司。
17. 均溫板散熱模組之研究，計畫期間：07/01/01~07/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:超眾股份有限公司。
18. 冷凍空調之前瞻性技術與應用班，計畫期間：06/01/01~06/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:元福實業股份有限公司。
19. 可變冷媒流量空調系統研究，計畫期間：06/01/01~06/12/31，委任單位：台大嚴慶齡工業研究中心，合作廠商:元福實業股份有限公司。

馬小康

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教授

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威斯康辛大學，能源所碩士，1980

M.S. in Energy Engineering, University of Wisconsin-Milwaukee, 1980

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PH.D. in Mechanical Engineering, University of Illinois-Chicago, 1985

研究專長 (Specialty) :

燃燒工程、能源工程、燃料電池、微 Pump、空氣污染、廢棄物處理

Combustion, Energy, Fuel Cell, Micro-pump, Air Pollution Control, Waste Treatment

期刊論文 (Journal Papers) :

1. Hsiao-Kang Ma, Jyun-Sheng Wang, "Development of a novel pseudo bipolar piezoelectric proton exchange membrane fuel cell with nozzle and diffuser", *J. Power Sources*, Vol. 196, p. 3766-3772, 2011. (Elsevier: SCI, IF3.792)
2. Hsiao-Kang Ma, Shih-Han Huang, Jyun-Sheng Wang, Churng-Guang Hou; Chen-Chiang Yu; Bo-Ren Chen, "Experimental study of a novel piezoelectric proton exchange membrane fuel cell with nozzle and diffuser", *J. Power Sources*, Vol. 195, p. 1393-1400, 2010.
3. H. K. Ma, H. A. Yang, "Combustion Synthesis of Titania Nanoparticles in Premixed Methane Flame", *Journal of Alloys and Compounds*, Vol. 504, p. 115-122, 2010. (SCI, IF:2.135)
4. H. K. Ma, H. A. Yang, "A Comparative Study of TiO₂ Nanoparticles Synthesized in Premixed and Diffusion Flames", *Journal of Thermal Science*, Vol. 19, No. 6, p. 1-9, 2010. (SCI)
5. 陳柏仁、馬小康*、藍浩瑋、何為瀚, 2010.0803, "蜂巢式散熱鰭片應用于高功率 LED 散熱之研究", *太原理工學報*, ISSN1007-9432, Vol. 41, No. 5, p. 553-563, 2010. (EI)
6. 馬小康, 2010.0803, "潔淨電力運用于氫能燃料電池混合動力系統之開發", *太原理工學報*, ISSN1007-9432, Vol. 41, No. 5, p. 543-553, 2010. (EI)
7. 馬小康、王明勇、陳柏仁、陳尚瑋、潘子融、沈政寬, "以生命週期(LCA)分析氣化系統之節能效率", 應對氣候變化:能源與社會經濟協調發展, *中國環境科學出版社*, ISBN 978-5111-0181-5, p. 49-61, 2010. (EI)
8. H.K. Ma, S.H. Huang, "Development of Micro-diaphragm Flow Channel with Piezoelectric Effect in Polymer Electrolyte Fuel Cells", *Journal of Fuel Cell Science and Technology*, 6 ,

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9. H.K. Ma, B. R. Chen, J. J. Gao, C.Y. Lin, ``Development of an OAPCP-Micropump Liquid Cooling System in a Laptop``, *J. of International Communications in Heat and Mass Transfer*, 2009
10. H.R. Chiu, H.K. Ma,” The Solidification Model of Molten Droplets Impinging on a Flat Surface”, *International Journal of Particulate Science and Technology*, 27(1) issue, Feb., 2009.
11. H.K. Ma, S.H. Huang, ” Innovative Design of an Air-Breathing Proton Exchange Membrane Fuel Cell with a Piezoelectric Device”, *Journal of Fuel Cell Science and Technology*, Vol. 6, No. 3, Doi: 10.1115/1.3005581, FC-07-1116, 2009. (SCI: IF0.80)
12. H.K. Ma, B. R. Chen, J. J. Gao, C.Y. Lin, ”Development of an OAPCP-Micropump Liquid Cooling System in a Laptop”, *J. of International Communications in Heat and Mass Transfer*, Vol. 36, pp. 225-232 , 2009.
13. 馬小康、陳柏仁、王明勇、陳尚瑋、潘子融、郭峻瑋, “氣化技術之發展與前景”, 「工業污染防治」季刊(*Industrial Pollution Prevention and Control*), 第Vol. 109, 2009。
14. 馬小康、楊雄安, “氣相燃燒合成SiO₂及TiO₂奈米複合氧化物之研究”, 國科會「工程科技通訊」, 第Vol. 101, P. 250-254, 2009。
15. 馬小康、吳孝原, “台灣地區固體廢棄物面臨之問題與相關技術需求”, *化工技術(Chemical Technology)*, 化工技術第 17 卷第 6 期, 2009。
16. H.K. Ma, S.H. Huang, B.R. Chen; L.W. Cheng, ” Numerical Study of a Novel Micro-diaphragm Flow Channel with Piezoelectric Device for Proton Exchange Membrane Fuel Cells”, *J. Power Sources*, Vol. 180, No.1, p. 402-409, 2008. (Elsevier:SCI: IF3.521)
17. H.K. Ma, B. R. Hou, C.Y. Lin, J. J. Gao, ”The Improved Performance of One-Side Actuating Diaphragm Micropump for a Liquid Cooling System”, *J. of International Communications in Heat and Mass Transfer*, Vol. 35, pp. 957-966 , 2008. (SCI: IF0.708)
18. H.K. Ma, S.H. Huang, Y. C. Kuo, ” A Novel Ribbed Cathode Polar Plate Design in Piezoelectric Proton Exchange Membrane Fuel Cells (PZT-PEMFC)”, *J. Power Sources*, Vol. 185, No.2, p. 1154-1161, 2008. (Elsevier:SCI: IF3.521)
19. H.K. Ma, B. R. Hou, C.Y. Lin, J. J. Gao, M.C. Kou, ” Development and Application of A Diaphragm Micro-pump with Piezoelectric Device”, *Journal of Microsystem Technologies*, Vol. 14, No.7, pp. 1001-1007, 2008. (SCI: IF0.673)
20. M.C. Kuo, H.K. Ma, S.L. Chen, C.C. Wang, ” An Algorithm for Simulation of the Performance of Air-cooled Heat Exchanger Applications Subject to the Influence of Complex Circuitry”, *Journal of Applied Thermal Engineering*, 26, P. 1-9, 2006.(SCI)
21. 馬小康, “台灣地區以生質能作為電能之回顧與建議”, *化工技術(Chemical Technology)*, Vol. 163, No. 10, pp. 193-204, 2006。

國際會議論文 (International Conference Papers) :

1. H.K. Ma, 2011.0222, ” Evaluating Environmental Impacts of Fuel Blending in A Pilot-scale

- Entrained Flow Gasifier”, *The 8th Expert Meeting on Solid Waste Management in Asia and Pacific Islands*, Tokyo, Japan. (Invited speaker)
2. H. K. Ma, H. A. Yang, 2010.12, “Combustion synthesis of TiO₂ nanoparticles from premixed and diffusion flames”, *8th Asia-Pacific Conference on Combustion*, Hyderabad, India.
 3. H.K. Ma, 2010.11, ” A "Zero Waste" policy for establishing a sound WEEE Material-cycle Society in Taiwan”, *5th World Recycling forum WRF 2010, International Conference & Exhibition on Electronics, Battery & Car Recycling*, Hong Kong.
 4. H. K. Ma, 2010.1028, “The Role of On-line Monitoring Systems for a Steam Boiler”, *AESIEAP 18th Conference of the Electric Power Supply Industry*, Taipei, Taiwan. (**Invited Speaker**)
 5. 馬小康, 2010.0927, ” 台湾生活垃圾之零废弃排放政策”, 环境卫生与科学发展论坛, 广东省环境卫生协会年会, 廣州, 中國(**Plenary Lecture**)
 6. H.K. Ma, B.R. Chen, S.W. Chen, M.Y. Wang, C.H. Shen, H.W. Hsu, 2010.0803, ” Environmental Impact Study and Life Cycle Assessment of a Coal-Petroleum Coke Gasification Process”, Poster session, *33rd International Symposium on Combustion*, Beijing, China
 7. 陳柏仁、馬小康*、藍浩璋、何為瀚, 2010.0803, ” 蜂巢式散熱鰭片應用于高功率 LED 散熱之研究”, 海峽兩岸氣候變遷與能源可持續發展論壇, 山西長治, 中國
 8. 馬小康, 2010.0803, ” 潔淨電力運用於氫能燃料電池混合動力系統之開發”, 海峽兩岸氣候變遷與能源可持續發展論壇, 山西長治, 中國(Plenary Lecture)
 9. H.K. Ma, J. S. Wang, and Y. T. Chang, 2010.06, ” Study of a pseudo bipolar design for a piezoelectric proton exchange membrane fuel cell with nozzle and diffuser”, *Proceedings of FUELCELL2010, 8th International Conference on Fuel Cell Science, Engineering and Technology Conference*, Brooklyn, New York, USA.
 10. 馬小康, 2010.0426, “台湾生活垃圾之零廢棄排放政策”, 2010 兩湖低碳經濟發展論壇, 杭州, 中國 (Invited Speaker)
 11. 馬小康, 2010.0416, “低碳城市建設規劃之我見”, 2010 低碳發展國際論壇, 深圳, 中國 (Invited Speaker)
 12. H.K. Ma, B. R. Chen, 2010.02, ” The Development of a Valveless Piezoelectric Micropump”, *26th Semiconductor Thermal Measurement, Modeling, and Management Symposium (SEMI-THERM-26)*, Santa Clara, California, USA
 13. H.K. Ma, B. R. Chen, H.W. Lan, and C.Y. Chao, 2010.02, ” Study of a LED Device with Honeycomb Heat Sink”, *26th Semiconductor Thermal Measurement, Modeling, and Management Symposium (SEMI-THERM-26)*, Santa Clara, California, USA.
 14. 馬小康, 2009.12 “台灣廢電子電器回收及處理制度”, 第三屆中國國際電子電器回收及處理技術大會, 北京, 中國 (Invited Speaker)
 15. H.K. Ma, 2009.11, “The mechanism of WEEE recycling and treatment in Taiwan”, *2009 The 4th International Electronics Recycling Congress*, Shanghai, China
 16. 馬小康, 2009.10, ”台灣電子廢棄物之回收與處理機制”, 2009 海峽兩岸固廢管理論壇 香港理工大學會議廳 M1603. (Invited speaker)

17. 馬小康、王明勇、陳柏仁、陳尚瑋, 2009.10, ”以生命週期(LCA)分析氣化系統之節能效率”, 第三屆海峽兩岸能源經濟學術研討會, 北京, 中國
18. H.K. Ma, 2009.0925, ”Experimental Study of the Piezoelectric Proton Exchange Membrane Fuel Cells (PZT-PEMFCs) with Nozzle and Diffuser”, *Proceedings of International FUELCELL Symposium*, Yuan Ze University, Taiwan (Invited Speaker)
19. H.K. Ma, 2009.0917, ”Pay-by-Bag Trash Collection Policy” for the Municipal Solid Waste Reduction in Taiwan”, *The 6th Expert Meeting on Solid Waste Management in Asia and Pacific Islands*, Nagoya, Japan. (Invited speaker)
20. 馬小康, 2009.0904, ”台湾下一兆元能源产业—LED产业之未来展望”, 2009 中国 (成都) 新能源国际论坛, 成都, 中國 (Invited Speaker)
21. H.K. Ma, S. H. Huang, C. C. Yu, C. G. Hou, Y.T. Chang, and Ay Su, 2009.06, ”Study of Piezoelectric Proton Exchange Membrane Fuel Cells (PZT-PEMFCs) with Nozzle and Diffuser”, *Proceedings of FUELCELL2009, Seventh International Conference on Fuel Cell Science, Engineering and Technology Conference*, Newport Beach, California, USA.
22. H.K. Ma, J. S. Wang, S.H. Huang, Y.J. Huang, and Y.Z. Kuo, 2009.06, ”Numerical Study of Different Anode and Cathode Channel Design on the Performance of Piezoelectric Proton Exchange Membrane Fuel Cells (PZT-PEMFCs)”, *Proceedings of FUELCELL2009, Seventh International Conference on Fuel Cell Science, Engineering and Technology Conference*, Newport Beach, California, USA.
23. H.K. Ma, 2009.0424, ”WEEE Treatment and Disposal”, Sustainable Waste Management Policies and Practices, The HKIE Environmental Division Annual Seminar, Theatre II, Hong Kong Convention & Exhibition Centre. (Invited speaker)
24. H.K. Ma, 2009.0423, ”Numerical and Experimental Studies of a One-Side Actuating Micropump with Piezoelectric Effect”, The Hong Kong Polytechnic University. (Invited speaker)
25. H.K. Ma, B. R. Chen, 2009.03, ”Numerical and Experimental Studies of a One-Side Actuating Micropump with Piezoelectric Effect”, *25th Semiconductor Thermal Measurement, Modeling, and Management Symposium (SEMI-THERM-25)*, San Jose, California, USA.
26. H.K. Ma, B. R. Chen, H.W. Lan, K.T. Lin, and C.Y. Chao, 2009.03, ”Study of an LED Device with Vibrating Piezoelectric Fins”, *25th Semiconductor Thermal Measurement, Modeling, and Management Symposium (SEMI-THERM-25)*, San Jose, California, USA.
27. H.K. Ma, 2009.0423, ”Numerical and Experimental Studies of a One-Side Actuating Micropump with Piezoelectric Effect”, The Hong Kong Polytechnic University. (Invited speaker)
28. H.K. Ma, 2009.0424, ”WEEE Treatment and Disposal”, Sustainable Waste Management Policies and Practices, The HKIE Environmental Division Annual Seminar, Theatre II, Hong Kong Convention & Exhibition Centre. (Invited speaker)
29. H.K. Ma, S. H. Huang, C. C. Yu, C. G. Hou, Y.T. Chang, and Ay Su, 2009.06, ”Study of Piezoelectric Proton Exchange Membrane Fuel Cells (PZT-PEMFCs) with Nozzle and Diffuser”, *Proceedings of FUELCELL2009, Seventh International Conference on Fuel Cell*

Science, Engineering and Technology Conference, Newport Beach, California, USA.

30. H.K. Ma, J. S. Wang, S.H. Huang, Y.J. Huang, and Y.Z. Kuo, 2009.06,” Numerical Study of Different Anode and Cathode Channel Design on the Performance of Piezoelectric Proton Exchange Membrane Fuel Cells (PZT-PEMFCs)”, *Proceedings of FUELCELL2009, Seventh International Conference on Fuel Cell Science, Engineering and Technology Conference*, Newport Beach, California, USA.
31. H.K. Ma, B. R. Chen, J. J. Gao, C. Y. Lin and M.C. Kou, 2008.03,” Development of One-side Actuating Piezoelectric Micropump Combined with Cold Plate in a Laptop”, 24th Semiconductor Thermal Measurement, Modeling, and Management Symposium (SEMI-THERM-24), San Jose, California, USA.
32. H.K. Ma, S. H. Huang, and Y.C. Kuo, 2008.06,” Development of Micro-diaphragm Flow Channel with Piezoelectric Effect in Polymer Electrolyte Fuel Cells”, *Proceedings of FUELCELL2008, Sixth International Conference on Fuel Cell Science, Engineering and Technology Conference*, Denver, Colorado, USA.
33. H.K. Ma and Christine Chang, 2008.07,” 3Rs and Cooperation among Stakeholders in Taiwan”, The 4th Expert Meeting on Solid Waste Management in Asia and Pacific Islands, Yokohama City, Japan. (Invited speaker)
34. H.K. Ma and H.A. Yang 2008.08, “Applying Combustion Synthesis of TiO₂ Nanoparticles in the Dye-sensitized Solar Cells”, Poster Session, 32th International Combustion Symposium, Canada.
35. H.K. Ma, S. H. Huang, B. R. Chen, and Y.R. Huang 2008.11, “Study of A Fuel Supply Pump with Piezoelectric Effect for Micro Solid Oxides Fuel Cells”, ASME International Mechanical Engineering Congress and Exposition, IMECE 2008-67150, Boston, USA.
36. H.K. Ma, B. R. Chen, 2008.10,” Experimental Study on Electronics Cooling Using a Piezoelectric Micro-pumped Liquid System in a Laptop”, The 7th International Symposium on Heat Transfer (ISHT7), Beijing, China.
37. H.K. Ma and H.A. Yang, 2008.11,” Experimental Study on the Dye-sensitized Solar Cells Using Combustion Synthesis of TiO₂ Nanoparticles”, The 9th Asia-Pacific International Symposium on Combustion and Energy Utilization (9th APISCEU), Beijing, China.
38. H.K. Ma and Christine Chang, 2008.11,” The Recycling Scheme of Electronic Waste in Taiwan”, The 5th Expert Meeting on Solid Waste Management in Asia and Pacific Islands, Songdo CONVENSiA, Incheon, Korea. (Invited speaker)
39. 馬小康, 2008. 11, “台灣地區電子垃圾之回收處理機制”, 北京, 2008 海峽兩岸固體廢棄物管理論壇.
40. H.K. Ma, 2007.11,” Present Status of MSW Policy and Bottom Ash Treatment in Taiwan”, The 3rd Expert Meeting on Solid Waste Management in Asia and Pacific Islands, Okayama City, Japan. (Invited speaker)
41. 馬小康, 2007.06, ”台灣地區生活垃圾處理之減量、能源與資源回收之現況探討”, 第十一屆海峽兩岸環境保護學術研討會, 哈爾濱, 中國
42. H.K. Ma, S.H. Huang, L. W. Chan, and B. R. Hou, 2007.06,” Development of

Micro-Diaphragm Flow Channel with Piezoelectric Effect in Polymer Electrolyte Fuel Cells”, Proceedings of FUELCELL2007, The 5th International Conference on Fuel Cell Science, Engineering and Technology, New York, USA.

43. H. A. Yang and H. K. Ma, 2007.05,” Comparison of TiO₂ Nanoparticles Synthesized in Premixed and Diffusion Flames”, The 6th Asia-Pacific Conference on Combustion (ASPACC 6), Nagoya Congress Center, Nagoya, Japan.
44. H.K. Ma, B. R. Hou, C.Y. Lin, J. J. Gao, M.C. Kou 2007.04,” Development and Application of a Diaphragm Micro-pump with Piezoelectric Device”, Symposium on Design, Test, Integration and Packaging of MEMS/MOEMS, Lago Maggiore, Italy.
45. H.K. Ma, B. R. Hou, 2007.03,” Development of a Micro-Diaphragm Pump with Piezoelectric Device”, 23th Semiconductor Thermal Measurement, Modeling, and Management Symposium (SEMI-THERM-23), San Jose, California, USA.
46. 馬小康, 2006.12, “台灣地區生活垃圾處理、能源與資源化技術之探討”, 2006 年海峽兩岸生態城鄉建設發展研討會論文集, 中國浙江義烏.
47. H.K. Ma, 2006.11,”The Current Policy and Issues on Solid Waste Management in Taiwan”, The 2nd Expert Meeting on Solid Waste Management in Asia and Pacific Islands, Kitakyushu City, Japan. (Invited speaker)
48. H. K. Ma, H.K. Yang, K.T. Li, 2006.10, “Combustion Synthesis of TiO₂ Nano-particles with TTIP in a Modified Hencken Burner”, 8th Asia-Pacific International Symposium on Combustion and Energy Utilization, Sochi, Russian Federation.
49. H.K. Ma, H.E. Qian, Z.Q. Zhong, 2006.09, “Simulation of Flow Field and Optimization in Ultra High Purity Valves”, The Seventeenth International Symposium on Transport Phenomena, Toyama, Japan.
50. K.T. Li, H. K. Ma, H.K. Yang, 2006.08, “ Comparison of TiO₂ Nanoparticles Synthesized in CH₄/O₂/N₂ Premixed and Diffusion Flames”, Poster Session, 31st International Symposium on Combustion, University of Heidelberg, Germany
51. H.K. Ma, and S.H. Huang, 2006.06,” Simulation of Water Transport Phenomena in Proton Exchange Membrane Fuel Cells (PEMFCs), Proceedings of FUELCELL2006, The 4th International Conference on Fuel Cell Science, Engineering and Technology, Irvine, CA, USA.
52. 馬小康, 2006.05, “台灣地區垃圾焚化發電之回顧”, 海峽兩岸第 4 屆熱電聯 產/氣電共生學術交流會論文集, 中國廈門.

國內會議論文 (Domestic Conference Papers) :

1. 沈韋成、馬小康、楊雄安, 2010. 03, “水管式燃煤鍋爐之效率標準訂定”, 中華民國第 20 屆燃燒科技應用研討會, 崑山科技大學。
2. Tzu-Jung Pan, Hsiao-Kang Ma, Hsiung-An Yang, 2010. 03, “The Prediction of LiFePO₄ Nanoparticle Size in a High Temperature Surrounding”, 中華民國第 20 屆燃燒科技應用研討會, 崑山科技大學。
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10. 楊雄安, 馬小康, 2006. 03, "在甲烷擴散火焰添加有機化合物 TTIP 燃燒合成 TiO₂ 微粒之研究", 中華民國第 16 屆燃燒科技應用研討會, 基隆, 國立海洋大學。

專利 (Patents) :

1. 馬小康, "燃料電池結構改良" 中華民國發明專利, 申請日 2009/11/23, 專利申請案號: 09813983798。
2. 馬小康, 壓電式微薄膜 PEMFC 燃料電池, 中華民國發明專利, 申請日 2008/1/16, 專利申請案號: 097101646。
3. 馬小康, "薄膜幫浦極具有薄膜幫浦之裝置" 中華民國發明專利, 公開日 2008/8/16, 專利公開編號:200833950。
4. 馬小康, "水冷頭結構" 中華民國發明專利, 公開日 2008/10/01, 專利公開編號:200839495。
5. 馬小康, "水冷散熱系統" 中華民國發明專利, 公開日 2008/12/01, 專利公開編號:200847901。
6. 馬小康, 薄膜泵及具有薄膜泵的裝置, 中國專利, 200710079971.X, 申請日:2007/03/01
7. 馬小康, 一種水冷頭結構, 中國專利, 200710098310.1, 申請日:2007/04/19
8. 馬小康, 水冷散熱系統, 中國專利, 200710105238.0, 申請日: 2007/05/24
9. Hsiao-Kang Ma, Chang-Hung Peng, Bo-Ren Hou, Ming-Chien Kuo, USA Patent-20080283224, WATER-COOLING HEAT-DISSIPATING SYSTEM, 11-20-2008
10. Hsiao-Kang Ma, Chang-Hung Peng, Bo-Ren Hou, Ming-Chien Kuo, USA Patent-20080283225, WATER-COOLING HEAT-DISSIPATING SYSTEM, 11-20-2008
11. Hsiao-Kang Ma, Chang-Hung Peng, Bo-Ren Hou, USA Patent-20080236793 WATER BLOCK 10-02-2008

Honor Positions :

- (1) The Combustion Institute: <http://www.combustioninstitute.org/>
2009ASPACC 亞太國際燃燒會議主辦人
President-Chinese Taipei Section 中華民國燃燒學會理事長
- (2) Semiconductor Thermal Measurement, Modeling and Management Symposium (SEMI-THERM): <http://WWW.SEMI-THERM.ORG/>
Asia Liaison, Board member
- (3) International Electronics Recycling Congress (IERC): <http://www.icm.ch/>
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- (4) Experts Meeting on Solid Waste Management in Asia and Pacific Islands(SWAPI):
SWAPI_SolidWasteManagementExpertsInAsia@yahoo.com
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- (5) J. of Material Cycles and Waste Management, Editorial Board
- (6) J. of Thermal Science, Editorial Board
- (7) Asia-Pacific International Symposium on Combustion and Energy Utilization (APISCEU):
Board member
- (8) 2007 海峽兩岸固廢管理論壇: 第一屆 Organizer

得獎紀錄 (Honors) :

1. 學生潘子融等組隊代表台大工學院，以“可攜式燃料電池 LED 燈具之開發”參加北京科技大學”2010 海峽兩岸節能減排競賽”，獲得一等獎。
2. 學生楊雄安等組隊 BactricTech，以“專業高畫質數位攝錄影機專用電池”參加 2009 年“第十屆台灣工業銀行 WEWIN 創業大賽”，獲得佳作。
3. 學生黃詩涵等組隊 OPTER 以“燃料電池變流進氣系統”參加”2008 年 TIC100 冬令營創新創業競賽”，獲得第四名。
4. 研究生楊雄安獲得 2008 年中華民國燃燒學會第 18 屆燃燒科技應用研討會論文佳作獎。
5. 學生黃詩涵等組隊 OPTER 以“燃料電池變流進氣系統”參加”2008 年 TIC100 創新創業競賽”，獲得決賽第一名。
6. 率研究生侯博仁等以“勁流精密-壓電式微薄膜幫浦”參加”第 8 屆 WeWin 臺灣工業銀行創業大賽”，並進入最後 10 隊決賽，獲得佳作獎(2007/05)。
7. 研究生許嘉政獲得 2007 年中華民國燃燒學會第 17 屆燃燒科技應用研討會論文獎。
8. 研究生侯博仁等以“薄膜幫浦技術”獲財團法人研華文教基金會”第 9 屆 TiC 100 創新事業競賽冬令營”(2007/02/10-2007/02/11)樹苗獎。

研究計畫 (Research Projects) :

1. 馬小康，2010，『無閥壓電式質子交換膜燃料電池堆系統之研究』，主持人，委託單位：行政院國家科學委員會計畫編號：NSC99-2221-E-002-126-MY2，2010 年 08 月~2012 年

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2. 馬小康，2009，『定置型燃料電池模組之燃料利用與廢能回收系統研究』，主持人，委託單位：行政院國家科學委員會計畫編號：NSC99-2622-M-002-029-CC3，2010年11月~2011年10月。
3. 馬小康，『生命週期評估應用於永續能源與綠色科技發展決策機制之研究--淨煤發電技術之生命週期盤查與環境衝擊分析』，主持人，委託單位：行政院國家科學委員會計畫編號：NSC98-2621-M-002-037-MY2，2009年08月~2011年07月。
4. 馬小康，生命週期評估應用於永續能源與綠色科技發展決策機制之研究-淨煤發電技術之生命週期盤查與環境衝擊分析(I)(97-2621-M-002-016-)，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
5. 馬小康，以壓電片運用至質子交換膜燃料電池之研究(96-2221-E-002-074-MY2)，主持人，計畫期間：07/08/01~09/07/31，委任單位：國科會。
6. 馬小康，50瓦微型固態氧化物燃料電池之燃料供應系統(96-2622-E-002-008-CC3)，主持人，計畫期間：07/05/01~08/04/30，委任單位：國科會。
7. 馬小康，散熱式薄膜泵設計與效能分析(96-S-A16)，主持人，計畫期間：06/12/01~07/11/30，委任單位：訊凱國際股份有限公司。
8. 馬小康，氣相燃燒合成SiO₂及TiO₂奈米複合材料之研究(95-2221-E-002-337-)，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
9. 馬小康，底渣中非金屬篩選效率之提昇(95-S-A45) 主持人，計畫期間：06/05/01~07/02/28，委任單位：國賓大地環保事業股份有限公司。
10. 馬小康，薄膜式泵結合散熱流道之效能分析(95-S-A27)，主持人，計畫期間：06/02/01~06/11/30，委任單位：訊凱國際股份有限公司。
11. 馬小康，焚化底渣中再利用之質量平衡研究(94-S-A80)，主持人，計畫期間：05/07/01~06/03/31，委任單位：亞能開發新業投資有限公司。

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MEMS, Nanotechnology, Biochips, Thermal and Fluid Science, Sensors, Instrument

期刊論文 (Journal Papers) :

1. Chen, Hung-Hsia, Anbarasan, R., Kuo, Long-Sheng, Chen, Ping-Hei*, “A novel report on Eosin Y functionalized MWCNT as an initiator for the ring opening polymerization of ϵ -Caprolactone,” *Materials Chemistry and Physics*. (SCI)
2. Kuo, Long-Sheng, Chou, Wen-Pin and Chen, Ping-Hei*, 2011, “Numerical study of effects of slip boundaries on 2D Rayleigh-Benard convection using lattice Boltzmann method”, *Int. J. Heat Mass Transfer*, Vol. 54, pp. 1340-1343. (SCI)
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7. Hsu, Chin-Chi, Kuo, Long-Sheng, and Chen, Ping-Hei*, 2011, “Classification of Surface

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8. Yang, Y. L., Hsu, C. J., Chang, T. L., Kuo, L. S., Chen, Ping-Hei*, 2010, “Study on Wetting Properties of Periodical Nanopatterns by a Combinative Technique of Photolithography and Laser Lithography”, *Applied Surface Science*, Vol. 256, March, pp. 3683-3687. (SCI)
 9. Tsung-Han Tsai, Long-Sheng Kuo, Ping-Hei Chen*, Da-Sheng Lee and Chin-Ting Yang, 2010, “Applications of Ferro-Nanofluid on a Micro-Transformer”, *Sensors*, Vol. 10, pp. 8161-8172. (SCI)
 10. Chen, Hung-Hsia, Anbarasan, R., Kuo, Long-Sheng, Tsai, Meng-Yu, Chen, Ping-Hei*, Chiang, Kuei-Feng, 2010, “Synthesis, Characterizations and hydrophobicity of micro/nano scaled helptadecafluoro nonanoic Acid Decorated Copper nano particle”, *Nano Micro Letters*, Vol. 2, No. 2, pp. 101-105.
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20. Kuo, Long-Sheng, and Chen, Ping-Hei*, 2009, “Effects of Slip Boundary Conditions on Rayleigh-Benard Convection,” *J. of Mechanics*, Vol. 25, pp. 205-212. (SCI) (Runner-up of 2010 Journal Best Paper Award)
21. Chen, P.-H.*, Lee, Y. W., and Chang, T. L., 2009, “Predicting Thermal Instability in a Closed Loop Pulsating Heat Pipe System,” *Applied Thermal Engineering*, Vol. 29, pp. 1566-1576. (SCI) doi:10.1016/j.applthermaleng.2008.07.007
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25. Chien, J. H., Yang, C. H., Chen, P. H.*, Yang, C. R., Lin, C. S., and Wang H., 2008, “DNA Detection Using a Radio Frequency Biosensor with Gold Nanoparticles,” *Frontier in Bioscience*, Vol. 13, pp. 4756-4764. (SCI) (106/263) DOI: 10.2741/3037(cited number : 1)
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29. Chen, Ping H., Chang, Shyy W.*, Chiang, Kuei F., and Ji, Li, 2008, “High Power Electronic Component: Review,” *Recent Patents on Engineering*, Vol. 2, pp. 174-188. (cited number : 1)
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- into Mainstream over A Concave Surface,” *Journal of Fluid Science and Technology*, Vol. 2, No. 2, Sep., pp. 311-321.
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 33. Chang, C.-W., Cheng, Y.-T. Tsai, C.-Y., Chien, J.-H., Wang, P.-Y, and Chen, P.-H.*, 2007, “Periodic Flow Patterns of the Magnetic Fluid in Microchannel,” *Journal of Magnetism and Magnetic Materials*, Vol. 310, pp. 2844-2846. (SCI Journal) (48/189) (number cited: 1)
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 35. Cheng, Yi-Ting, Tsai, Chien-Ying, and Chen, Ping-Hei*, 2007, “Development of an Integrated CMOS DNA Detection Biochip,” *Sensors and Actuators B: Chemical*. Vol. 120, pp. 758-765. (SCI Journal) doi:10.1016/j.snb.2006.03.045 (cited number:9)
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44. Kuo, J.-S., Chiu, K.-T., Hsu, S.-W., Chen, P.-H. *, Liao, Y.-S., Yang, C.-R., 2006, "A novel Technique for Fabrication of Herringbone Grooves in Dynamic Thrust Bearing Combining UV-LIGA with Electro-Discharge-Machining," *Microsystem Technologies*. Vol. 12, pp. 529-536. (SCI Journal) (number cited: 2) May.

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1. Chen, Hung-Hsia, Anbarasan, R., Kuo, Long-Sheng, Chen, Ping-Hei *, 2010, "Synthesis and Characterizations of Fluorescent and Eco-friendly Poly(ϵ -caprolactone)," International Conference on Natural Polymers (ICNP-2010), M.G University, Kottayam, Kerala, India.
2. Chen, Hung-Hsia, Anbarasan, R., Kuo, Long-Sheng, Chen, Ping-Hei *, 2010, "Synthesis and characterization of Eosin Y functionalized MWCNT," IEEE Nanotechnology Materials and Devices Conference (IEEE NMDC-2010), M.S. University, Monterey, California, USA.
3. Liu, L. D., Lin, C. S., Chen, P. H., "Artificial lotus structure with hierarchical silica particles in transparent self-clean surface," *The 217th Electrochemical Society Meeting*, April 25 - 30, 2010, Vancouver, Canada.
4. Hsu, C. C., and Chen P. H., 2010, "Fabrication of semi-transparent super-hydrophobic surface based on silica hierarchical structures", Joint International Symposia on 3rd Micro & Nanotechnology and Micro/nanoscale Energy Conversion & Transport-2010, Seoul, Korea, MNT2010-004.
5. Tsai, Tsung-Han, Liou, Dar-sun, Chang, Chih-Wei, Chen, Ping-Hei, 2009, "Mixing Phenomena of Ferrofluid and Diesel in Microchannels with Magnetic Field on the Side Wall," The Proceedings of the 7th Pacific Symposium on Flow Visualization and Image Processing, Kaohsiung, Taiwan, Paper No. 22A-1.
6. Yang, F.-L. Lee, D.S. Lee, and Chen, Ping-Hei, 2009, "Taiwan Accreditation Program For RFID Engineers", Proceedings of APEEC 2009, The ASME Asia-Pacific Engineering Education Congress, 2009
7. Tsai, Tsung-Han, Chen, Ping-Hei, liu, Dar-Sun, Yang, Chin-Ting, 2009, "Enhancement of Mixing Performance of Water Solutions in a Micro-mixer with Immiscible Ferrofluid," **2009 4th IEEE International Conference on Nano/Micro Engineered and Molecular Systems**, pp. 69-74.
8. Tsai, Tsung-Han, Kuo, Long-Sheng, Chen, Ping-Hei, and Yang, Chin-Ting, 2009, "Thermal Conductivity of Nanofluid with Magnetic Nanoparticles," *PIERS Online*, Vol. 5, No. 3, 2009, pp: 231-234.
9. Chen, Ping-Hei, liu, Dar-Sun, Tsai, Tsung-Han, Kuo, Long-Sheng, Yang, Chin-Ting, 2008, "Application of nanofluids in microfluidic devices," *Proceedings of the 6th International Conference on Nanochannel, Microchannel, and Minichannels*, **PTS A AND B, pp. 1669-1675**

(Keynote paper) (SCI,EI Conference Paper)

10. Maio, Z. M., Chen, Ping-Hei, and Chang, B. H., 2007, "Numerical Predictions of a flow field in a Hydrodynamic Journal Bearing with Herringbone Grooves," The 2008 Asia Symposium Computational Heat Transfer and Fluid Flow, Xian, China.
11. Chien, Jui-Hung, Chen, Ping-Hei, Chang, Chih-Hsiang, 2007, "A Novel Biochip Chip Using Radio-frequency Technology," Proceeding of 21st Symposium of The Protein Society, Boston, Massachusetts, USA, Paper No. 134.
12. Chen, Ping-Hei, 2007, "Electrical Detection of Biomolecules Using Nanoparticles," ECI Conference on "Nanoscience and Nanotechnology for Biological/Biomedical/Chemical Sensing", 3-8 June 2007, Hong Kong, Paper No. 168.
13. Chen, Ping-Hei, Yang, Cheng-Hao, Tsai, Chien-Ying, Chang, Tien-Li, Hsu, Wei-Cheng, Chen, Ta-Chih, 2007, "Young's Modulus of High Aspect Ratio Si₃N₄ Nano-thickness Membrane", *2007 7th IEEE Conference on Nanotechnology*, Vol. 1-3, pp. 1071-1074.
14. Chien, J. H., Chang, C. H., Hsieh, Y. F., Lee, D.S., Kuo, L. S., Yang, C. H., Yang, C. R., Chou, W. P., and Chen, P. H., 2007, "A Dual-Mode Radio Frequency DNA Sensor", *2007 2nd IEEE International Conference on Nano/Micro Engineered and Molecular Systems, Vol., 1-3*, pp. 250-254. (SCI,EI Conference Paper)
15. Chiang, T.C., Chang, C.W., Kuo, L.S., and Chen, P. H., 2007, "Experimental investigation of loop heat pipe with nano-ferrofluid," *Proceedings of the International Conference on Integration and Commercialization of Micro and Nanosystems 2007*, p 813-818. (EI Conference Paper)
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19. Cheng, Yi-Ting, Tsai, Chien-Ying, and Chen, Ping-Hei, 2006, "A CMOS Biochip for Electrical Detection of DNA with an Embedded Current Amplifier Circuit," *2006 1st IEEE International Conference on Nano/Micro Engineered and Molecular Systems, Vol., 1-3* pp. 1-5. (SCI,EI Conference Paper, number cited: 1)
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B Virus and Hepatitis C Virus Using Real-Time PCR Lab-on-a-chip,” *2006 1st IEEE International Conference on Nano/Micro Engineered and Molecular Systems, Vol., 1-3* pp. 274-277. (SCI,EI Conference Paper)

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1. Long-Sheng Kuo and Ping-Hei Chen, 2009, “Numerical Study of Effects of Slip Boundaries on 2D Rayleigh-B'enard Convection using LBM”, The 33rd National Conference on Theoretical and Applied Mechanics, November 13-14, 2009, National United University, Page No. A1-153
2. 劉達生, 楊進丁, 郭龍生, 苗志銘, 陳炳輝, 2009, “新型樂高模組化微流裝置設計與應用”, 中國機械工程學會第二十六屆學術研討會, 台南, 台灣, E04-003.
3. Wei-Ting Huang, Cheng-Hao Yang, Pei-Shan Lee and Ping-Hei Chen, 2008, "Study of Micro/Nano Structure Effects on Hydrophobic Surfaces with Hight Transparency," Proceedings of the 25th CSME National Conference on Mechanical Engineering, Changhua, Taiwan, E02-22
4. Yung-Lang Yang, Tien-Li Chang, Ta-Hsin Chou, Chih-Chieh Su, Ping-Hei Chen, 2008, “Fabrication of Periodic Nanostructures Using Controlled Laser Interference Design,” Proceedings of the 25th CSME National Conference on Mechanical Engineering, Changhua, Taiwan, E02-25.
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6. 張智翔, 劉達生, 郭龍生, 陳炳輝, 2007, “利用奈米磁性流體提升混合效能之半主動式微型混合器”, 中國機械工程學會第二十四屆學術研討會, 桃園, 台灣, E2-0015 .
7. Dar-Sun Liou, Tien-Li Chang, Ping-Hei Chen, 2007, “Rapid Mixing in Y-Type Microchannel Using Magnetic Nanofluids” , 中國機械工程學會第二十四屆學術研討會, 桃園, 台灣, E1-0030.
8. Dar-Sun Liou, Tien-Li Cheng, Ping-Hei Chen, 2007, “Biocompatible Magnetic Nanofluids in Biological Microfluidic Mixing Process”, 長庚大學第十二屆生化工程研討會, 林口, 台灣, P-I-15.
9. Tien-Li Chang, Chih-Hsiang Chang, Chih-Chen Sun, Chun-Chi Chen, Chien-Ying Tsai, Yi-Fan Hsieh, Chun-Hung Lin, Ping-Hei Chen, 2006, “An Ultrasensitive Bar-Code DNA Amplifying DNA Sensing System for DNA Detection with Self-Assembly Gold Nanoparticle and Nanogap Electrode,” 13th Symposium on Nano Device Technology (SNDT 2006), Hsinchu, Taiwan, No.T2-03.
10. Tien-Li Chang, Chia-Je He, Chin-Yun Tsai, Chien-Ying Tsai, Chun-Chi Chen, Da-Sheng Lee, Chun-Hung Lin, Ping-Hei Chen, 2006, “Electrical Detection of Protein Sensing System Using Nanogap Electrodes and Multilayer Gold Nanoparticles Labels,” 13th Symposium on Nano Device Technology (SNDT 2006), Hsinchu, Taiwan, No.T2-02.

專利 (Patents) :

1. 柯富祥, 蔡建瑩, 陳俊淇, 陳炳輝, 2006, “室溫操作之庫倫阻斷裝置及其製造方法” 中華民國發明 I273237, 發明公告/公開號:200619614 號, (2007/02/01 公告)
2. 陳炳輝, 蔡建瑩, 蔡宜樺, 2006, “以奈米粒子檢測 DNA 之方法”, 中華民國, 發明第 I250213 號。(2006/03/01 公告)
3. 陳炳輝, 李達生, 楊証皓, 2009, “醫療用液面監測系統”, 中華民國, 公告/公開號: 200950843 號。(2009/12/18 公告)
4. 李達生, 陳炳輝, 2009, “主軸馬達”, 中華民國, 公告/公開號: 200950282 號。(2009/12/01 公告)

得獎紀錄 (Honors) :

1. 2006 年擔任 IEEE-NEMS 2006 的 Invited Speaker
2. 2006 年擔任 2nd ISMNT 的 Invited Speaker
3. 2006 中國工程師學會傑出工程教授。
4. 2008 年擔任 ASME ISNMM08 的 Keynote Speaker
5. 2007 年國科會傑出獎。
6. 2008-2010 年台大特聘教授
7. 2008 年 Board Member, The Open Nanomedicine Journal, 2008-
8. 2009 年 Fellow, ASME, 2009-
9. 2009 年 Member, Editorial Board, *International Journal of Microscale and Nanoscale Thermal & Fluid Transport Phenomena*, 2009
10. 2009 年 Delegation Leader, AUSTRALIA TAIWAN STRATEGIC WORKSHOP, 2009
11. 2009 年: Chairman, Local Advisory Committee, The 4th Asian Refrigeration and Air-Conditioning.
12. 2010 年: 『力學期刊論文獎』第 2 名

研究計畫 (Research Projects) :

1. 即時定量毛細管熱對流PCR平台之研發, 主持人, 計劃期間: 99/08/01-102/07/31, 國科會。
2. 綠能模組化微流元件研發應用, 主持人, 計劃期間: 99/08/01-102/07/31, 國科會。
3. 高疏水特性之銅表面改質, 主持人, 計劃期間: 99/03/01-99/08/31, 奇鎡電子。
4. 攜帶型現場核酸檢測器—『熱對流聚合酶連鎖反應』與『專一性偵測技術』之整合與開發, 子計畫主持人, 計劃期間: 98/12/15-99/11/14, 國科會。
5. 空調設備通用節能控制設備開發與RFID技術實現自主式用電管理, 總計畫主持人, 計劃期間: 9812/01-99/11/30, 國科會。
6. RFID教育暨研發實驗資源中心計畫(III), 主持人, 計劃期間: 98/04/01-99/03/31, 教育部。

7. RFID教育暨研發實驗資源中心計畫(II)，協同主持人，計劃期間：97/04/01-98/03/31，教育部。
8. KAUST KAUST GRP Award Solar Powered Building，子計畫主持人，計劃期間：96/06/01-99/05/31，KAUST。
8. 熱流暨能源學門研究發展及推動小組計畫，主持人，計劃期間：96/12/01-99/12/31，國科會。
9. 一種新型熱對流PCR機台與其試劑之開發，共同主持人，計劃期間：96/09/01-97/08/31，基亞生物科技股份有限公司。
Development of a Novel Convective PCR and its Reagent, Co-PI; 96/09/01-97/08/31, Medigen Biotechnology Corp.
10. 射頻生物分子感測系統之研究與開發(1/3)，主持人，計劃期間：96/08/01-97/7/31，國科會。
Development of a RFID Biochip for Detecting Biomolecules(I), PI; 96/08/01-97/7/31, NSC
11. DNA檢測之微全分析系統之研發-子計畫一：DNA訊號放大與檢測晶片之研發(1/3)，主持人，計劃期間：96/08/01-97/7/31，國科會。
Development of a Biochip of DNA amplification and Detection, PI; 96/08/01-97/7/31, NSC
12. 白光發光二極體應用於室內照明之研究與開發，主持人，計劃期間：96/07/01-97/06/30，奇鋳股份有限公司。
Application of Novel White LED to Indoor Lighting, PI; AVC Inc., 07/2007-06/2008
13. 前瞻性太陽能應用研發 (III)，研究員，計劃期間：96/02/08-96/12/31，能源局。
14. 高靈敏度DNA檢測系統之研究與開發(2/2)，主持人，計劃期間：95/08/01-96/7/31，國科會。
A High-Sensitivity Biochip for DNA Detection with Gold and Magnetic Nanoparticles, (II), PI; National Science Council, 08/2006-07/2007
15. 利用微流道篩選奈米顆粒之研究與技術開發(3/3)，主持人，計劃期間：95/08/01-96/7/31，國科會。
Development of Microfluidic Chips for Sieving Nanoparticles (I), PI; National Science Council, 08/2004-07/2007
16. 液體動壓軸承風扇開發計畫之動壓軸承內部三維流場模擬分析及偏轉位移量測，主持人，計劃期間：95/07/01-96/06/30，奇鋳股份有限公司。
Development of a Hydrodynamic Journal Bearing for a CPU Cooling Fan, PI; AVC Inc., 07/2006-06/2007
17. 國立台灣大學機械工程學系華碩電腦實驗室-CPU水冷系統之開發，共同主持人，計劃期間：94/11/01-95/10/31，華碩電腦。
Research Lab Sponsored by ASUS, Co-PI; ASUS Inc., 11/2005-10/2006
18. 晶片載具型即時偵測同步定量聚合酶連鎖反應器開發，總主持人，計劃期間：95/03/01-97/08/31，國科會。
Development of Real-Time PCR with Lab-on-a-Chip, PI; National Science Council, 03/2006-08/2008

19. 95年「航空技術」學門發展及推動規劃計畫，主持人，計劃期間：95/01/01-95/12/31，國科會。
Planning and Promotion of Aeronautical and Aerospace Researches, PI; 2006, 95/1/01-95/12/31, NSC

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臺灣大學，機械工程學士，1973

B.S. in Mechanical Engineering,
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M.S. in Aerospace Engineering, Georgia
Institute of Technology, 1977

西北大學，機械所博士，1983

Ph. D. in Mechanical Engineering,
Northwestern University, 1983

研究專長 (Specialty) :

燃燒工程、環境工程、能源工程、熱傳、流體力學、航空工程

Combustion Engineering, Environment Engineering, Energy Engineering, Heat Transfer, Fluid Engineering, Aerospace Engineering

期刊論文 (Journal Papers) :

1. C.H. Wang, K.L. Pan, D.Y. Cheng, and J.Y. Yang, "The Collision and Burning of High-C Alkanes and Low-C Alcohols + Benzene Droplets," *Journal of Combustion Science and Technology*, Vol.182, pp.165-185 (2010). (SCI, IF=0.984, 15/67=22%)
2. T.J. Hsieh, C.H. Wang and J.Y. Yang, "Simulation of Multiple Shock-Shock Interference Using Implicit Anti-Diffusive WENO Schemes," *International Journal for Numerical Methods in Fluids*, Vol.62, pp.138-165 (2010). (SCI, IF=0.780, 48/109=44%)
3. K.L. Pan, J.W. Li, C.P. Chen, and C.H. Wang, "On Droplet Combustion of Bio-Diesel Fuel Mixed with Diesel-Alkanes in Microgravity Condition," *Combustion and Flame*, Vol.156, pp. 1926-1936 (2009). (SCI, IF=2.184, 4/67=6%)
4. K.L. Pan, K.C. Tseng, and C.H. Wang, "Breakup of a Droplet at High Velocity Impacting a Solid Surface," *Experiments in Fluids*, Issue, DOI 10.1007/s00348-009-0697-3 (2009). (SCI, IF=1.062, 15/104=14.4%)
5. J.Y. Yang, T.J. Hsieh, and C.H. Wang, "Implicit Weno Schemes with Anti-Diffusive Flux for the Compressible Viscous Flow Computations," *AIAA Journal*, Vol.47-6, pp.1435-1450 (2009). (SCI, IF=0.988, 4/24=16.7%)
6. T.J. Hsieh, C. H. Wang, and J.Y. Yang, "Numerical Experiments with Several Variant WENO Schemes for the Compressible Viscous Flow Computations," *Journal of Chinese Society of Mechanical Engineers*, Vol.30-3, pp.209-219 (2009).
7. K.C. Fan, J.Y. Chen, C.H. Wang, and W.C. Pan, "Precision in-Situ Volume Measurement of

- Micro Droplet,” *Journal of Optics A: Pure and Applied Optics*, Vol.11, pp.8-14 (2009). (SCI, IF=1.752, 16/64=25%)
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 9. K.C. Fan, J.Y. Chen, C.H. Wang, and W.C. Pan, “Development of Drop-On-Demand Droplet Generator for One-Drop-Filling Technology,” *Sensors and Actuators A-Physics*, Vol.147, pp.649-655 (2008). (SCI, IF=1.434, 44/206=21%)
 10. C.H. Wang, K.L. Pan, C.Z. Lin, H.C. Wen, and J.Y. Yang, “Effects of Fuel Volatility on the Burning Characteristics of Collision-Merged Water/n-Alkane Droplets,” *Experimental Thermal and Fluid Science*, Vol.32, pp.1049-1058 (2008). (SCI, IF= 0.774, 39/107=36%)
 11. J.Y. Yang, T.J. Hsieh, and C.H. Wang, “Numerical Experiments with Several Variant WENO Schemes for the Euler Equations,” *the International Journal for Numerical Methods in Fluids*, Vol.58, pp.1017-1039 (2008). (SCI, IF=0.780, 48/109=44%)
 12. C.H. Wang, K.L. Pan, S.Y. Fu, W.C. Huang, and J.Y. Yang, "An Experimental Investigation on the Coalescent Behaviors of Collision Droplets," *Journal of Mechanics*, Vol.23, pp.415-422 (2007). (SCI, IF=0.531, 84/109=77%)
 13. C. H. Wang, K. C. Ko, K. L. Pan and J. Y. Yang, “An Experimental Study on the Premixed in a Rotating Tube,” *Journal of Aeronautic, Astronautics and Aviation, Series B 38-1*, pp.55-62 (2006). (EI)

國際會議論文 (International Conference Papers) :

1. C.H. Wang, G.J. Ueng, K.L. Pan, W.L. LIU, J.Y. Yang, “Forming Stability and Burning Characteristics of Emulsified Water/Diesel and Water+Methanol /Diesel Droplets”, 33rd International Symposium on Combustion, August 1-6, 2010, Beijing, China.
2. K.L. Pan, L.J. Kung, W.H. Huang, J.Y. Yang, C.H. Wang, “The Coalescence and Burning Behaviors of Collision-Merged Water/Diesel, Methanol/Diesel, and Water+Methanol/Diesel Droplets”, the 6th Asia-Pacific Conference for Aerospace Science and Technology (APCAST), December. 12-18, 2009, Hungsan, An-Hue, China.
3. K.L. Pan, J.W. Lee, C.P. C, C.H. Wang, “Binary Fuel of Diesel-Alkane Droplet Combustion in Microgravity,” the 7th Asia-Pacific Conference on Combustion, May 24-27, 2009, Taipei, Taiwan.
4. K.L. Pan, C.H. Wang, D.Y. Cheng, J.Y. Yang, “The Collision and Burning of High-C Alkanes and Low-C Alcohols + Benzene Droplets,” the 9th Asia-Pacific International Symposium on Combustion and Energy Utilization (APISCEU), November 2-6, 2008, Beijing, China.
5. K.L. Pan, L.J. Kung, W.H. Huang, J.Y. Yang, C.H. Wang, “The Burning Behaviors of Collision-Merged Water/Diesel, Methanol/Diesel, and Water+ Methanol/Diesel Droplets,” 32nd International Symposium on Combustion, August 3-8, 2008, Montreal, Canada.
6. J. Y. Yang, T. J. Hsieh, and C. H. Wang, “Numerical Experiments with Variant WENO Methods with Applications,” the International Conference on Spectral and High Order Methods (ICOSAHOM07), June 18-22, 2007, Beijing, China.

7. J. Y. Yang, T. J. Hsieh, and C. H. Wang, “Accurate Computation of Microscale Energy Transfer in Submicron Thin Film using Boltzmann Transport Equation,” the 5th International Conference on Nonlinear Mechanics (ICNM-V),” June 11-14, 2007, Shanghai.
8. K. C. Fan, J. Y. Chen, C. H. Wang, and W. C. Pan, “Development of a Droplet Generator Actuated by Piezo-electric Buzzer,” Mexico, 2006.
9. C. H. Wang, C. Z. Lin, H. C. Wen, and K. L. Pan, “The Burning Characteristics of Collision-Merged Alkane/Water Droplets,” EITC Conference, Dallas, 2006.

國內會議論文 (Domestic Conference Papers) :

1. 余傳濬, 王興華, “純水層流液柱噴流於斜對撞後所形成之液頁流場之實驗與理論研究”, 24th National Conference on Mechanical Engineering, CSME, Taiwan, 2007.
2. 蘇陳泓學, 王興華, “生質柴油、水和醇類直接乳化穩定性及燃燒現象研究,” 24th National Conference on Mechanical Engineering, CSME, Taiwan, 2007.
3. 蔡承豐, 王興華, “雙組份生質柴油於高溫環境下之燃燒現象觀察與研究”, 24th National Conference on Mechanical Engineering, CSME, Taiwan, 2007.
4. 余傳濬, 王興華, “斜對撞方式之純水層流液柱之動量與尺寸對於液頁型態、幾何之實驗研究,” 17th National Conference on Combustion, Taiwan, 2007.
5. 金佑勳, 王興華, “多組份柴油液滴燃燒與微爆現象之研究,” 16th National Conference on Combustion, Taiwan, 2006.

專利 (Patents) :

1. 黏性液滴滴注器, 范光照, 王興華, 陳智遠, 中華民國專利証號 M 315353, 2007.

專書 (Books) :

1. 王興華, "碰撞液滴結合及燃燒行為的探討," NSC94-2212-E-002-045- (2006).

研究計畫 (Research Projects) :

1. 液態油料之噴霧燃燒, 主持人, 計畫期間: 10/08/01~12/07/31, 委任單位: 國科會。
“Spray Combustion of Liquid Fuels”
2. 能源科技發展策略與政策之整合研究, 共同主持人, 計畫期間: 09/06/01~11/05/31, 委任單位: 國科會。
3. 能源國家型計畫 - 能源科技基礎研究與產業技術之發展趨勢及台灣能源科技之定位, 共同主持人, 計畫期間: 09/11/01~10/12/31, 委任單位: 國科會。
4. 液態雙基自燃推進燃料燃燒特性之研究, 主持人, 計畫期間: 08/08/01~10/12/31, 委任單位: 國科會。
“The Burning Characteristics of Hypogolic Fuels”

5. 生質油料燃燒特性及替代可行性研究，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
“The Burning Characteristics and the Replaceability of Biomass Fuel”
6. 生質油料燃燒特性之研究，主持人，計畫期間：09/01/01~09/12/31，委任單位：國科會。
“The Burning Characteristics of Biomass Fuels”
7. 柴油/水/酒精乳化液在燃氣輪機上可行性研究，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
“The Feasibility Study of Diesel/water/alcohol Emulsions in Gas Turbines - II”
8. 整合型液晶滴入製程設備基礎製程及相關精密量測研究(III)，協同主持人，計畫期間：08/01/01~08/12/31，委任單位：中山科學研究院。
“Development of a Droplet Generator and Precision in *Situ* Droplet Volume Measurement System-III”
9. 柴油/水/酒精乳化液在燃氣輪機上可行性研究，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
“The Feasibility Study of Diesel/water/alcohol Emulsions in Gas Turbines - I”
10. 整合型液晶滴入製程設備基礎製程及相關精密量測研究(II)，協同主持人，計畫期間：07/01/01~07/12/31，委任單位：中山科學研究院。
“Development of a Droplet Generator and Precision in *Situ* Droplet Volume Measurement System-II”
11. 水與柴油,醇與柴油,及(水+醇)/柴油液滴碰撞液滴結合及燃燒行為的探討，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。
“The Burning Characteristics of Colliding-merged Water/diesel, Alcohol/diesel, and (Water+alcohol)/diesel Droplets”
12. 整合型液晶滴入製程設備基礎製程及相關精密量測研究(I)，協同主持人，計畫期間：06/01/01~06/12/31，委任單位：中山科學研究院。
“Development of a Droplet Generator and Precision in *Situ* Droplet Volume Measurement System-I”
13. 碰撞液滴結合及燃燒行為的探討，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。
“The Coalescence and Burning Characteristics of Colliding-merged”

陳瑤明

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成功大學，機械工程學士，1974

B.S. in Mechanical Engineering,
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德國漢諾威工業大學，化工所國授工程師 1976~1979

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德國慕尼黑工業大學，機械所博士，
1985

Dr-Ing., Department of Mechanical
Engineering, Technical University of
Munich, Germany, 1985

研究專長 (Specialty) :

潔淨能源、電子冷卻、二相流、光學量測

Clean Energy, Electronic Cooling, Two Phase Flow, Optical Measurement

期刊論文 (Journal Papers) :

1. Fang-Chou Lin, Bing-Han Liu, Chi-Ting Huang, Yau-Ming Chen, “Evaporative Heat Transfer Model of a Loop Heat Pipe with Bidisperse Wick Structure”, International Journal of Heat and Mass Transfer, 2010 (submitted)
2. Chien-Chih Yeh, Chun-Nan Chen and Yau-Ming Chen, “Heat transfer analysis of a loop heat pipe with biporous wicks”, International Journal of Heat and Mass Transfer, vol.52 , no.19 ,pp.4426 -4434 , 09, 2009.
3. C. C. Yah, B. H. Liu, Y. M. Chen, “A study of loop heat pipe with biporous wick,” Heat Mass Transfer, Vol.44, pp.1537-1547, 2008.
4. Y.S. Tsai, Y.M. Chang, Y.J. Chang, and Y.M. Chen, “Phase-Resolved PIV Measurements of the Flow between a Pair of Corotating Disks in a Cylindrical Enclosure,” Journal of Fluids and Structures, Vol. 23, No. 2, pp. 191-206, 2007.
5. S.C. Wu, Y.S. Tsai, Y.M. Chang, and Y.M. Chen, “Typical Flow between Enclosed Corotating Disks and its Dependence on Reynolds Number,” Journal of the Chinese Institute of Engineers, Transactions of the Chinese Institute of Engineers, Vol. 29, No. 5, September, 2006, pp. 841-850.

國際會議論文 (International Conference Papers) :

1. S. C. Wu, B. H. Hsieh, C. C. Yeh, Y. M. Chen, ``Investigation of the Polymer Wick Structure Applied to Loop Heat Pipe``, The 4th International Microsystems, Packaging, Assembly and Circuits Technology Conference, 1 , 344 -347 , 11, 2009.
2. S. C. Wu, J. C. Peng, S. R. Lai, C. C. Yeh, Y. M. Chen, ``Investigation of the Effect of Heat Leak in Loop Heat Pipes with Flat Evaporator``, The 4th International Microsystems, Packaging, Assembly and Circuits Technology Conference, 1 , 348 -351 , 11, 2009.
3. S. C. Wu, S. H. Chen, K. H. Wei, C. C. Yeh, Y. M. Chen, ``Manufacture and Performance Test of the Sintered Miniature Loop Heat Pipe``, The 4th International Microsystems, Packaging, Assembly and Circuits Technology Conference, 1 , 352 -355 , 11, 2009
4. F. C. Lin, C. C. Yeh, S. C. Wu, Y. M. Chen, ``Mathematical Model of Heat and Mass Transfer in a Wick Structure of a Loop heat pipe``, The 4th International Microsystems, Packaging, Assembly and Circuits Technology Conference, 1 , 356 -359 , 11, 2009
5. S. C. Wu, Y. M. Chen, ``Flow visualization and the parametric effects in a pair of corotating disks``, 2009 Conference on Aeronautical and Mechanical Engineering, 1 , 17 -26 , 10, 2009.

國內會議論文 (Domestic Conference Papers) :

1. 劉秉翰, 周珀丞, 鄭元豪, 陳瑤明, ``孔徑分佈於多孔性結構於微流道熱傳增強研究``, 中國機械工程學會第27屆全國學術研討會, 2010
2. 林芳州, 阮俊嘉, 黃三祐, 陳瑤明, ``雙孔徑毛細結構應用於迴路式熱管``, 中國機械工程學會第27屆全國學術研討會, 2010
3. 劉秉翰, 劉光祖, 周珀丞, 陳瑤明, ``多孔性結構微流道之二相熱傳增強研究``, 中國機械工程學會第26屆全國學術研討會, A01 , 75 -0 , 11, 2009
4. 阮俊嘉, 林芳州, 吳聲鏞, 陳瑤明, ``雙孔徑毛細結構表面於池沸騰之熱傳增強研究``, 中國機械工程學會第26屆全國學術研討會, A01 , 98 -0 , 11, 2009
5. 葉建志, 黃祺庭, 林芳州, 陳瑤明, ``迴路式熱管內毛細結構的相變化熱傳分析``, 中國機械工程學會 第二十五屆全國學術研討會, 2008.
6. 劉秉翰, 黃駿宇, 劉光祖, 陳瑤明, ``具多孔性結構微流道蒸發器之熱傳增強研究``, 中國機械工程學會 第二十五屆全國學術研討會, 2008.
7. 劉秉翰(B.H. Liu), 施毓倫(Y.L. Shih), 鍾仰德(Y.T. Chung), 陳瑤明(Y.M. Chen), ``奈米流體於池沸騰熱傳增強研究``, 輸送現象及其應用研討會, 2008.
8. 葉建志, 吳聖俊, 陳俊男, 陳瑤明, ``雙孔徑毛細結構應用於迴路式熱管之研究``, 第31屆中華民國力學學會年會暨全國力學會議, 2007
9. 黃祺庭、姚大中、葉建志、陳瑤明, ``迴路式熱管穩態模型之建立與參數分析``中國機械工程學會第二十四屆全國學術研討會, 2007
10. 吳聲緯, 葉勁廷, 吳聖俊, 陳瑤明, ``多孔性毛細結構表面於池沸騰熱傳增強研究``, 中國機械工程學會第二十四屆全國學術研討會論文集, 2007

11. 鍾仰德，邱義善，劉秉翰，陳瑤明，"微流道蒸發器熱傳性能增強之研究"，輸送現象及其應用研討會, 2007
12. 葉建志、劉秉翰、姚大中、陳瑤明,"雙孔徑毛細結構應用於迴路式熱管之研究,"輸送現象及其應用研討會論文集, 2006

專利 (Patents) :

1. 新型專利 瓣狀噴射壓縮器 142228 陳瑤明

研究計畫 (Research Projects) :

1. 微流道冷凝熱傳增強研, Condensation heat transfer enhancement in microchannels 計畫期間：10/08/01~11/07/31，委任單位：國科會。
2. 微流道冷凝熱傳增強研, Condensation heat transfer enhancement in microchannels 計畫期間：11/08/01~12/07/31，委任單位：國科會。
3. 微流道冷凝熱傳增強研, Condensation heat transfer enhancement in microchannels 計畫期間：12/08/01~13/07/31，委任單位：國科會。
4. 具雙孔徑孔洞表面之微流道蒸發器研發，計畫期間：09/08/01~10/07/31，委任單位：國科會。

Development of Microchannel Evaporator with Biporous Surface

5. 具雙孔徑孔洞表面之微流道蒸發器研發，計畫期間：08/08/01~09/07/31，委任單位：國科會。

Development of Microchannel Evaporator with Biporous Surface

6. 具雙孔徑孔洞表面之微流道蒸發器研發，計畫期間：07/08/01~08/07/31，委任單位：國科會。

Development of Microchannel Evaporator with Biporous Surface

7. 高效率微流道蒸發器之研發，計畫期間：06/08/01~07/07/31，委任單位：國科會。

Novel Design in Microchannel Evaporator Heat Sink

8. 具高分子毛細結構迴路式熱管之研發，計畫期間：05/08/01~06/07/31，委任單位：國科會。

A Study on the Loop Heat Pipe with Polymer Wick Structure

伍次寅

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臺灣大學，機械工程學士，1980

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M.S. in Mechanical Engineering, Cornell
University, 1985

康乃爾大學，機械工程博士，1991

Ph.D. in Mechanical Engineering,
Cornell University, 1991

研究專長 (Specialty) :

流體力學、動態系統、非線性振盪、時間序列分析

Fluid Mechanics, Dynamical Systems, Nonlinear Oscillations, Time-Series Analysis

期刊論文 (Journal Papers) :

1. Wu, T., Chang, L.-J., Wang, S.-Y., Su, Z.-Y., Wang, Y.-T. (2009) "Nonlinear Analysis of the Estrous-cycle Time Series in Mice," J. Korean Phys. Soc., Vol. 55, No. 4, pp. 1357-1362. (SCI)
2. Su, Z.-Y., Wu, T., Wang, S.-Y. (2009) "Local Scaling and Multifractal Spectrum Analyses of DNA Sequences — GenBank Data Analysis," Chaos, Solitons & Fractals, Vol. 40, pp. 1750-1765. (SCI)
3. Su, Z.-Y., Wu, T., Yang, P.-H., Wang Y.-T. (2008) "Dynamical Analysis of Heartbeat Rate Signals of Epileptics Using Multidimensional Phase Space Reconstruction Approach," Physica A, Vol.387, pp. 2293-2305. (SCI)
4. Su, Z.-Y., Wu, T., Wang, Y.-T., Huang, H.-Y. (2008) "An Investigation into the Linear and Nonlinear Correlation of Two Music Walk Sequences," Physica D, Vol.237, pp.1815-1824. (SCI)
5. Su, Z.-Y., Wang, C.-C., Wu, T., Wang, Y.-T., Tang, F.-C. (2008) "Instantaneous Frequency-Time Analysis of Physiology Signals: The Application of Pregnant Women's Radial Artery Pulse Signals," Physica A, Vol.387, pp.485-494. (SCI)
6. Lee, S.-H. and Wu, T. (2007) "Drag Force on a Sphere Moving in Low-Reynolds-Number Pipe Flows," J. Mech., Vol.23, pp.423-432. (SCI)
7. Su, Z.-Y. and Wu, T. (2007) "Music Walk, Fractal Geometry in Music," Physica A, Vol. 380, pp. 418-428. (SCI)

8. Su, Z.-Y. and Wu, T. (2006) "Multifractal Analyses of Music Sequences," Physica D, Vol. 221, no. 2, pp. 188-194. (SCI)

國內會議論文 (Domestic Conference Papers) :

1. 馮建忠，蘇致遠，伍次寅，王傳禎，王淑音(2005) "使用虛擬壓縮法數值模擬脈衝流於非等截徑彈性管中之流場，" 第十二屆全國計算流體力學學術研討會，Aug. 2005，高雄，台灣。
2. 蘇致遠，王傳禎，伍次寅，王淑音(2005) "使用碎形分析老鼠之迷宮行走行為序列，" 中國機械工程學會第二十二屆全國學術研討會，Nov. 25-26， 2005，國立中央大學，中壢，台灣。
3. 鄭翰鴻，蘇致遠，伍次寅，王傳禎，王淑音(2005) "癲癇患者心跳生理訊號之非線性動力學分析，" 中華民國力學學會第二十九屆全國力學會議， Dec. 16-17，2005， 國立清華大學，新竹市，台灣。

得獎紀錄 (Honors) :

1. 教學優良獎 2010
2. 教學傑出獎 2005

研究計畫 (Research Projects) :

1. 音樂序列之多重碎形特性分析，計畫期間：04/01/01~04/12/31，委任單位：財團法人宗倬章先生教育基金會。
(Multifractal Analysis of Music Sequences)
2. 控制管流水錘效應之最佳閘門關閉行程研究，計畫期間：03/08/01~04/07/31，委任單位：國科會。
(Optimal Valve Stroking for Waterhammer Control in Pipe Flows)

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研究專長 (Specialty) :

紊流理論、計算流體力學、熱電科學

Turbulence Theory, Computational Thermal Fluid Science, Thermoelectric Science

期刊論文 (Journal Papers) :

1. Mei-Jiau Huang, Tien-Yao Chang, Heng-Chieh Chien, Wei-Che Sun, and Yao Da-Jen*, 2010, "The Thickness Difference Method for Measuring the Thermal Conductivity of Thick Films," Journal of Microelectromechanics 19, p895-902.
2. Tai-Ming Chang, Chien-Chou Weng, Mei-Jiau Huang*, 2010, "A Non-Equilibrium Molecular Dynamics Study of In-Plane Thermal Conductivity of Silicon Thin Films," Journal of Electronic Materials 39, 1616-1620.
3. Mei-Jiau Huang*, Tung-Chun Tsai, Liang-Chun Liu, 2010, "A Study of Phonon Transport in Si/Ge superlattice thin films in use of a fast Monte-Carlo Solver," Journal of Electronic Materials 39, 1875-1879, on-line published, DOI: 10.1007/s11664-009-1066-y.
4. Liang-Chun Liu and Mei-Jiau Huang*, 2010, "Thermal conductivity modeling of micro- and nanoporous silicon," Int. J. Therm. Sci. 49, p1547-1554.
5. Mei-Jiau Huang*, Chieh-Chou Won, Tai-Ming Chang, "An Investigation of The Phonon Properties of Silicon Nanowire," 2010, Int. J. Therm. Sci. 49, 1095-1102, DOI information: 10.1016/j.ijthermalsci. 2010.02.002 .
6. Chia-Tsung Hsieh, Mei-Jiau Huang*, Shih-Tuen Lee, and Chao-Hua Wang, 2010, "A Numerical Study of Skid Marks of Slabs in a Walking-Beam Type Slab Reheating Furnace," Numerical Heat Transfer A 57, 1-17.
7. Tai-Ming Chang, Chieh-Chou Won, Mei-Jiau Huang*, Chun-Kai Liu and Chih-Kuang Yu, 2009, "The Temperature-Quantum-Correction Effect on the MD-Calculated Thermal

- Conductivity of Silicon Thin Films,” *Comp. Model. Eng. Sci.* 50, 47-65.
8. Mei-Jiau Huang*, Dong-Jiun Tsai, Liang-Chun Liu, Ming-shan Jeng, and Chang-Chung Yang, 2009, “A fast Monte-Carlo Solver for Phonon Transport in Nanostructured Semiconductors,” *Comp. Model. Eng. Sci.* 42, 107-129.
 9. Liang-Chun Liu, Ronggui Yang, and Mei-Jiau Huang*, 2009, “Curvature Effect on the Phonon Thermal Conductivity of Dielectric Nanowires,” *J. Appl. Phys.* 105, 104313. June 8, 2009 issue of *Virtual Journal of Nanoscale Science & Technology*.
 10. Mei-Jiau Huang*, Huan-Xun Su, and Li-Chieh Chen, 2009, “A Fast Resurrected Core-Spreading Vortex Method with No-slip Boundary Conditions,” *Journal of Computational Physics* 228, 1916–1931.
 11. Chun-Kai Liu, Chih-Kuang Yu, Heng-Chieh Chien, Chung-Yen Hsu, Ming-Ji Dai, Guang-Li Luo, Mei-Jiau Huang*, 2008, “Thermal conductivity of Si/SiGe superlattice film,” *Journal of Applied Physics* 104, 104301.
 12. Mei-Jiau Huang*, Chia-Tsung Hsieh, Shih-Tuen Lee, and Chao-Hua Wang, 2008, “A Coupled Numerical Study of Slab Temperature and Gas Temperature in the Walking-Beam Type Slab Reheating Furnace,” *Numerical Heat Transfer* 54, 625 - 646.
 13. Heng-Chieh Chien, Da-Jeng Yao*, Mei-Jiau Huang, and Tien-Yao Chang, 2008, “Thermal conductivity measurement and interface thermal resistance estimation using SiO₂ thin film,” *Review of Scientific Instruments* 79, 054902.
 14. Mei-Jiau Huang*, Tai-Ming Chang, Chun-Kai Liu, and Chih-Kung Yu, 2008, “A Theoretical Study of the Specific Heat and Debye Temperature of Low-Dimensional Materials,” *International Journal of Heat and Mass Transfer*, 51, 4470–4479.
 15. Chia-Tsung Hsieh, Mei-Jiau Huang*, Shih-Tuen Lee, Chao-Hua Wang, 2008, “Numerical Modeling of a Walking-Beam-Type Slab Reheating Furnace,” *Numerical Heat Transfer A* 53, 966-981.
 16. Mei-Jiau Huang, Po-Kuei Chou, and Ming-Chyuan Lin, 2008, “An Investigation of the Thermal Stresses Induced in a Thin-Film Thermoelectric Cooler,” *Journal of Thermal Stresses*, 31, 438–454.
 17. Mei-Jiau Huang, Tai-Ming Chang, Wen-Yen Chong, 2007, “A New Lattice Thermal Conductivity Model of a Thin Film Semiconductor,” *International Journal of Heat and Mass Transfer* 50, 67-74.
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 19. Mei-Jiau Huang, Wen-Yen Chong, and Tai-Ming Chang, 2006, “The Lattice Thermal Conductivity of a Semiconductor Nanowire,” *J. Applied Physics* 99, 114318.
 20. Mei-Jiau Huang, Po-Kuei Chou, and Ming-Chyuan Lin, 2006, “Thermal and Thermal Stress Analysis of a Thin-Film Thermoelectric Cooler Under the Influence of the Thomson Effect,” *Sensors and Actuators A* 126, pp.122-128.

國際會議論文 (International Conference Papers) :

1. Liang-Chun Liu and Mei-Jiau Huang, 2010/5, The role of characteristic length and pore geometry in decreasing the thermal conductivity of porous silicon: A renovated thermal conductivity model, 29th International Conference on Thermoelectrics, May 30~June 3, 2010, Shanghai, China.
2. Tai-Ming Chang and Mei-Jiau Huang, 2010/5, The Effects of Quantum Dots and Wetting Layers on the Lattice Thermal Conductivity, 22nd International Conference on Parallel Computational Fluid Dynamics, May 17-21, 2010, Kaohsiung, Taiwan.
3. Li-Chieh Chen and Mei-Jiau Huang, 2010/5, Parallel Algorithm of a Fast Vortex Method, 22nd International Conference on Parallel Computational Fluid Dynamics, May 17-21, 2010, Kaohsiung, Taiwan.
4. Wei-che Sun, Heng-Chieh Chien, Mei-Jiau Huang, Tien-Yao Chang, and Yao Da-Jen , A novel method for measuring thick film thermal conductivity, the fifth IEEE International Conference of Nano/Micro Engineered and Molecular Systems, Xiamen, China, January 20-23, 2010.
5. Tai-Ming Chang, Chieu-Chou Weng, Mei-Jiau Huang, 2009/07, A Non-Equilibrium Molecular Dynamics Study of In-Plane Thermal Conductivity of Silicon Thin Films, presented at ICT-ECT2009, Freiburg, German, July 2009.
6. Mei-Jiau Huang, Tung-Chun Tsai, Liang-Chun Liu, 2009/07, A Study of Phonon Transport in Si/Ge superlattice thin films in use of a fast Monte-Carlo Solver, presented at ICT-ECT2009, Freiburg, German, July 2009.
7. Liang-Chun Liu, Ronggui Yang, and Mei-Jiau Huang, 2008/08, Curvature effect on the thermal conductivity of nanowires, ASME Summer Heat Transfer Conference, August 10-14, 2008, Jacksonville, Florida, USA.
8. Chia-Tsung Hsieh, Mei-Jiau Huang, Shih-Tuen Lee, and Chao-Hua Wang, 2008/06, A Couple Numerical Study of Slab Temperature and Gas Temperature in the Walking-Beam Type Slab Reheating Furnace, presented at the 6th International Conference on COMPUTATIONAL FLUID DYNAMICS in the Oil & Gas, Metallurgical and Process Industries, Trondheim, Norway, 10-12 June 2008 .
9. Tai-Ming Chang and Mei-Jiau Huang, 2008/06, A NEMD Study of Surface Roughness of Silicon Thin Films, presented at the 2nd Integration & Commercialization of Micro & Nanosystems International Conference, June 3-5, 2008, Kowloon, Hong Kong.
10. Mei-Jiau Huang, Dong-Jiun Tsai, and Liang-Chun Liu, 2008/06, A DSMC study of the Si/Ge interface thermal resistance, presented at the 2nd Integration & Commercialization of Micro & Nanosystems International Conference, June 3-5, 2008, Kowloon, Hong Kong.
11. Chun-Kai Liu, Chih-Kuang Yu, Heng-Chieh Chien, Chung-Yen Hsu, Ming-Ji Dai, Guang-Li Luo, and Mei-Jiau Huang, 2008/01, Thermal conductivity of Si/SiGe superlattice film, presented at Micro/Nanoscale Heat Transfer International Conference, January 6-9, 2008, Tainan, Taiwan.

12. Mei-Jiau Huang and Tai-Ming Chang, 2007, “A Theoretical Study of the Specific Heat and Debye Temperature of Low-Dimensional Materials,” presented at the 26th International Conference on Thermoelectrics, June 3-7, Jeju Island, S. Korea.
13. Mei-Jiau Huang, 2006, “A Comparison between Asymmetric and Symmetric Vortex Merger,” presented at the 4th WSEAS International Conference on fluid mechanics and aerodynamics, Aug.21-23, Greece.
14. Ming-Chyuan Lin, Meng-Kao Yeh, Jie-Ren Jheng, Chaoen Wang, and Mei-Jiau Huang, 2006, “Measurement on Mechanical Properties of Metallic Materials at Cryogenic Temperature by Microwave Technology,” presented at International Cryogenic Materials Conference, July 17–21, in Praha, Czech Republic.
15. Mei-Jiau Huang, Wen-Yen Chong, and Tai-Ming Chang, 2006, “The Lattice Thermal Conductivity of a Semiconductor Nanowire,” presented at 2nd International Symposium of Micro and NanoTechnology, March 29-31, 2006 in Hsinchu , Taiwan.

國內會議論文 (Domestic Conference Papers) :

1. C.J. Huang and Mei-Jiau Huang, 2010/7, An improvement on the resurrected core-spreading vortex method, 第十七屆全國計算流體力學研討會，大溪，July 29~31, 2010.
2. Ting-Yu Kang and Mei-Jiau Huang, 2010/7, The size effect on the spreading thermal resistance, 第十七屆全國計算流體力學研討會，大溪，July 29~31, 2010.
3. Liang-Chun Liu and Mei-Jiau Huang, 2009/7, The Effect of the Pore Geometry on the Thermal Conductivity of Porous Silicon at Nanoscale, presented at 第十六屆全國計算流體力學研討會，宜蘭，July 30~Aug.1, 2009.
4. 康庭瑜、蔡東峻、黃美嬌, 2009/7, 矽-鍍奈米線複合材料熱傳現象之模擬研究, presented at 第十六屆全國計算流體力學研討會，宜蘭，July 30~Aug.1, 2009.
5. 翁健洲、張泰鳴、黃美嬌, 2009/7, 矽薄膜及矽奈米線之熱傳性質研究, presented at 第十六屆全國計算流體力學研討會，宜蘭，July 30~Aug.1, 2009.
6. 蔡東峻、黃美嬌, 2009/7, 超晶格薄膜熱傳現象之蒙地卡羅法模擬研究, presented at 第十六屆全國計算流體力學研討會，宜蘭，July 30~Aug.1, 2009.
7. 謝曙陽、黃美嬌, 2008/08, 二維 beta 平面紊流特性之研究, 第十五屆全國計算流體力學研討會，高雄，Aug. 7-9, 2008.
8. 蔡東峻、黃美嬌, 2008/08, 矽/鍍超晶格薄膜熱傳導係數 DSMC 法模擬研究, 第十五屆全國計算流體力學研討會，高雄，Aug. 7-9, 2008.
9. 翁健洲、張泰鳴、黃美嬌, 2008/08, 以非平衡分子動力學研究矽薄膜平面方向熱傳導係數與表面粗糙度的關係, 第十五屆全國計算流體力學研討會，高雄，Aug. 7-9, 2008.
10. 謝嘉聰、黃美嬌、李石頓、王朝華, 2008/08, 動樑式扁鋼胚加熱爐之鋼胚冷痕探討, 第十五屆全國計算流體力學研討會，高雄，Aug. 7-9, 2008.
11. 陳立杰、黃美嬌, 2007, “群對點快速面積擴散渦漩法之效率與準確性分析,” presented at 第十四屆全國計算流體力學研討會，溪頭，Aug. 16-18.
12. Huan-Syun Su and Mei-Jiau Huang, 2007, “Development of a Core-Spreading Vortex Method

with No-Slip Boundary Condition,” presented at 第十四屆全國計算流體力學研討會，溪頭，Aug. 16-18.

13. Bo-Han Wu and Mei-Jiau Huang, 2007, “The Merging Dynamics of Two-Dimensional Symmetric Vortex Pair,” 2007/08, presented at 第十四屆全國計算流體力學研討會，溪頭，Aug. 16-18.
14. 謝嘉聰、黃美嬌、李石頓、王朝華, 2007, “扁鋼胚在加熱爐內之熱傳分析,” presented at 第十四屆全國計算流體力學研討會，溪頭，Aug. 16-18.
15. 謝嘉聰、黃美嬌、李石頓、王朝華, “加熱爐扁鋼胚熱流場模擬分析,” 2007, presented at 中華民國燃燒學會第十七屆學術研討會, March 31, 台大應力所.
16. 謝嘉聰、黃美嬌、李石頓、王朝華, “扁鋼胚加熱爐熱流場模擬,” 2006, presented at 第十三屆全國計算流體力學研討會, 台北翡翠灣, Aug. 17-19.
17. 陳立杰、黃美嬌, 2006, “Box-to-Point-Based Fast Core-Spreading Vortex Method,” 第十三屆全國計算流體力學研討會，台北翡翠灣，Aug. 17-19.
18. Mei-Jiau Huang, 2006, “A Comparison among Two-Dimensional Vortex Methods,” 第十三屆全國計算流體力學研討會，台北翡翠灣，Aug. 17-19.

得獎紀錄 (Honors) :

1. 2007 年臺灣大學教學傑出獎
NTU Outstanding Teaching Award, 2007
2. 2006 年第十三屆全國計算流體力學研討會大會海報佳作獎
Excellent Poster Paper Award, 13th Computational Fluid Dynamics Conference, Taiwan, 2006
3. 2006 年臺灣大學教學優良獎
NTU Excellent Teaching Award, 2006

研究計畫 (Research Projects) :

1. 具奈米結構熱電材料熱傳導分子動力學模擬研究，主持人，計畫期間：08/08/01~11/07/31，委任單位：國科會。
Investigation of Conduction Heat Transfer of Nano-structured Thermoelectric Materials via Molecular Dynamic Simulations, PI; Project period: 08/08/01~11/07/31, Organization: NSC.
2. 矽鍺超晶格材料晶格熱傳導現象分子動力學模擬研究，主持人，計畫期間：09/01/01~09/12/31，委任單位：工業技術研究院光電所。
A MD Study of the Cross-plane Lattice Thermal Conductivity of Si/Ge Superlattice Thin Films, PI; Project period: 09/01/01~09/12/31, Organization: EOL@ITRI.
3. 複合熱電材料理論模擬之研究，主持人，計畫期間：08/03/01~09/12/31，委任單位：工業技術研究院能環所。
A simulation study of nanocomposite thermoelectric materials, PI; Project period: 08/03/01~08/12/31, Organization: EERL@ITRI.
4. 矽鍺超晶格及量子點超晶格熱電材料分子動力學模擬研究，主持人，計畫期間：

08/01/01~08/12/31，委任單位：工業技術研究院光電所。

A Study of Si/Ge Superlattice and Si/Ge Quantum-Dot Superlattice via Molecular Dynamic Simulation, PI; Project period: 08/01/01~08/12/31, Organization: EOL@ITRI.

5. 熱電材料導電系數與賽貝克系數之評估，主持人，計畫期間：07/01/01~07/12/31，委任單位：工業技術研究院電子工業研究所。

A Study of the Electrical Conductivity and the Seebeck Coefficient of Thermoelectric Materials, PI; Project period: 07/01/01~07/12/31, Organization: EOL@ITRI.

6. 扁鋼胚再加熱爐內熱傳解析(II)，主持人，計畫期間：07/4/01~08/3/31，委任單位：中國鋼鐵股份有限公司。

An Investigation of the Heat Transfer Problem in the Slab Reheating Furnace (II), PI; Project period: 07/04/01~08/3/31, Organization: China Steel Corporation.

7. 快速面積擴散渦漩法之研發，主持人，計畫期間：06/08/01~08/07/31，委任單位：國科會。

A Development of a Fast Core-Spreading Vortex Method, PI; Project period: 06/08/01~08/3/31, Organization: NSC.

8. 具無滑移邊界條件處理能力之面積擴散渦漩法之研發，主持人，計畫期間：06/08/01~08/07/31，委任單位：國科會。

Development of a Core-Spreading Vortex Method with No-Slip Boundary Condition, PI; Project period: 05/08/01~06/7/31, Organization: NSC.

9. 扁鋼胚再加熱爐內熱傳解析，主持人，計畫期間：05/11/01~06/10/31，委任單位：中國鋼鐵股份有限公司。

An Investigation of the Heat Transfer Problem in the Slab Reheating Furnace, PI; Project period: 05/11/01~06/10/31, Organization: China Steel Corporation.

10. 超晶格材料熱性能分析，主持人，計畫期間：06/01/01~06/12/31，委任單位：工業技術研究院電子工業研究所。

Analysis of the Thermal Performance of Superlattice Material, PI; Project period: 06/01/01~06/12/31, Organization: EOL@ITRI.

楊鏡堂

Jing-Tang Yang

教授

Professor

國立成功大學, 造船工程學士, 1974

B.S. in Naval Architecture,
National Cheng Kung University, 1974

國立成功大學, 機械工程碩士, 1978

M.S. in Mechanical Engineering,
National Cheng Kung University, 1978

威斯康辛大學, 機械工程博士, 1983

Ph.D. in Mechanical Engineering,
University of Wisconsin-Madison, 1983

研究專長 (Specialty) :

能源與燃燒、微奈尺度生化流體系統、仿生物理與仿生工程、噴射推進

Energy and Combustion, Microfluidics and Biofluidics, Biophysics and Biomimetic Engineering, Jet Propulsion

期刊論文 (Journal Papers) :

1. W. F. Fang, M. H. Hsu, Y. Z. Chen, and **J. T. Yang**,* "Characterization of Microfluidic Mixing and Reaction in Microchannels *via* Analyzing Cross-sectional Patterns," *Biomicrofluidics* (in revision) [SCI, 5-year impact factor = 2.90, Physics, Fluids & Plasmas: 5/28 (17.9%)].
2. Y. H. Lai, M. H. Hsu, and **J. T. Yang**,* 2010, "Enhanced Mixing of Droplets during Coalescence on a Surface with a Wettability Gradient," *Lab on a Chip*, Vol. 10, pp. 3149-3156 [SCI, 5-year impact factor 6.88, Biochemical Research Methods: 5/65 (7.7%)].
3. M. H. Hsu, W. F. Fang, Y. H. Lai, **J. T. Yang**,* T. L. Tsai, and D. B. Shieh, 2010, "Enhanced Mobile Hybridization of Decorated Gold Nanoparticles with Oligonucleotide in Microchannel Devices," *Lab on a Chip*, Vol. 10, pp. 2583-2587 [SCI, 5-year impact factor 6.88, Biochemical Research Methods: 5/65 (7.7%)].
4. Y. H. Lai, **J. T. Yang**,* and D. B. Shieh, 2010, "A Microchip Fabricated with a Vapor-diffusion Self-assembled-monolayer Method to Transport Droplets across Superhydrophobic to Hydrophilic Surfaces," *Lab on a Chip*, Vol. 10, pp. 499-504 [SCI, 5-year impact factor 6.88, Biochemical Research Methods: 5/65 (7.7%)]. (No. of citation: 4)
5. **J. T. Yang**,* Y. H. Lai, W. F. Fang, and M. H. Hsu, 2010, "Simultaneous Measurement of Concentrations and Velocities of Submicron Species Using Multi-color Imaging and Micro-PIV," *Biomicrofluidics*, Vol. 4, pp. 014109-014121 [SCI, 5-year impact factor = 2.90, Physics, Fluids & Plasmas: 5/28 (17.9%)]. **Top 20 most downloaded articles, 2010/06** (No. of citation: 1)
6. Y. F. Huang,* Y. C. Lin, and **J. T. Yang**, 2010, "An Innovative Indicator of Carbon-Dioxide Emission for Developing Countries: A Study of Taiwan," *Energy Policy*, Vol. 38, pp.

3257–3262 [SCI, 5-year impact factor = 2.59, Energy and Fuel: 18/70 (25.7%)].

7. J. A. Yeh,* C. W. Tsai, and **J. T. Yang**, 2010, "Planar Liquid Confinement for Optical Centering of Dielectric Liquid Lenses," *IEEE Photonic Technology Letters*, Vol. 21, Issue 19, pp. 1396-1398 [SCI, 5-year impact factor = 1.78; Electrical and Electronic Engineering: 56/245 (22.9%), Optics: 17/70 (24.0%)]. (No. of citation: 3)
8. W. F. Fang and **J. T. Yang**,* 2009, "A Novel Microreactor with 3D Rotating Flow to Boost Fluid Reaction and Mixing of Viscous Fluids," *Sensors and Actuators B- Chemical*, Vol. 140, pp. 629-642 [SCI, IF = 3.08, Instruments and Instrumentation: 5/56 (8.9%)]. (No. of citation: 5)
9. Z. H. Yang, C. Y. Chiu, **J. T. Yang**,* and J. A. Yeh, 2009, "Investigation and Application of an Ultrahydrophobic Hybrid-Structured Surface with Anti-Sticking Character," *Journal of Micromechanics and Microengineering*, Vol. 19, pp. 085022-085033 [SCI, IF = 2.00, Mechanics: 13/123 (10.6%)]. Selected for inclusion in *IOP Select [chosen by the criteria of (a) substantial advances or significant breakthroughs, (b) a high degree of novelty, (c) significant impact for future research] also selected into the JMM Highlights of 2009 [a showcase of some of the top contributions published in 2009]*. (No. of citation: 2)
10. K. Y. Tung, C. C. Lee, and **J. T. Yang**,* 2009, "Mixing and Hydrodynamic Analysis of a Droplet in a Planar Serpentine Micromixer," *Microfluidics and Nanofluidics*, Vol. 7, pp. 545-557 [SCI, IF = 3.29, Instruments and Instrumentation: 3/56 (5.4%)]. (No. of citation: 4)
11. G. L. Tsai, Y. C. Lin, H. W. Wang, Y. F. Lin, Y. C. Su, and **J. T. Yang**,* 2009, "Cooling Transients in a Sudden-Expansion Channel with Varied Rates of Wall Transpiration," *International Journal of Heat and Mass Transfer*, Vol. 52, pp. 5990-5999 [SCI, IF = 1.95, Mechanical Engineering: 8/115 (7.0%)].
12. **J. T. Yang**,* F. C. Hsiao, and Y. C. Lin, 2009, "Transient Flame Spread during Convective Ignition of Solid Fuel in a Sudden-Expansion Combustor," *Combustion and Flame*, Vol. 156, pp. 1917–1925 [SCI IF = 2.92, Multidisciplinary Engineering: 3/79 (3.8%)].
13. F. C. Hsiao, Y. H. Lai, and **J. T. Yang**,* 2009, "Vortical Structure of Reacting Flow in a Sudden-Expansion Combustor with Solid Fuel," *Journal of Propulsion and Power*, Vol. 25, pp. 1145-1148 [SCI, IF = 0.88, Aerospace Engineering: 6/27 (22.2%)].
14. K. L. Pan, J. C. Lee, W. C. Juan, and **J. T. Yang**,* 2009, "Low-Frequency Oscillation of a Non-Premixed Flame of a Bluff-Body Burner," *Combustion Science and Technology*, Vol. 181, Issue 10, pp. 1217-1230 [SCI, IF = 1.14, Multidisciplinary Engineering: 24/79 (30.4%)].
15. S. C. Ting and **J. T. Yang**,* 2009, "An Innovative Technique for Simultaneous Measurement of Three-Dimensional Kinematics and Induced Flow of a Swimming Fish," *Journal of Mechanics*, Vol. 7, pp. 545-557 [SCI, IF = 0.61, Mechanics: 98/123 (80.0%)].
16. S. C. Ting and **J. T. Yang**,* 2009, "Extracting Energetically Dominant Features in a Complicated Fish Wake using Singular Value Decomposition," *Physics of Fluids*, Vol. 21, 041901-18 [SCI, IF = 1.64, Mechanics: 25/123 (20.3%)].
17. G. L. Tsai, Y. C. Lin, W. J. Ma, H. W. Wang, and **J. T. Yang**,* 2009, "Transitional Flow Patterns after a Backstep with Wall Mass Injection through a Porous Base," *International Journal of Heat and Mass Transfer*, Vol. 52, pp. 1058-1069 [SCI, IF = 1.95, Mechanical Engineering: : 8/115 (7.0%)]. (No. of citation: 2)
18. S. C. Ting and **J. T. Yang**,* 2008, "Pitching Stabilization via Caudal Fin-wave Propagation in a Forward-sinking Parrot Cichlid (*Cichlasoma citrinellum* × *Cichlasoma synspilum*)," *Journal of Experimental Biology*, Vol. 211, pp. 3147-3159 [IF = 2.98, Biology: 17/71 (23.9%)]. (No. of citation: 3)

19. **J. T. Yang**,* C. H. Yang, C. Y. Chen, and D. J. Yao, 2008, "Conversion of Surface Energy and Manipulation of a Single Droplet across Micropatterned Surfaces," *Langmuir*, Vol. 24, pp. 9889-9897 [IF = 4.10, Physical Chemistry: 23/113 (20.4%)]. (No. of citation: 7, cited once by an article of *Nature*)
20. K. Y. Tung and **J. T. Yang**,* 2008, "Analysis of a Chaotic Micromixer by Novel Methods of Particle Tracking and FRET," *Microfluidics and Nanofluidics*, Vol. 5, Issue 6, pp. 749-759 [SCI IF = 3.31, Instruments and Instrumentation: 4/56 (7.1%)]. (No. of citation: 3)
21. **J. T. Yang**,* W. F. Fang, and K. Y. Tung, 2008, "Fluids Mixing in Devices with Connected-Groove Channels," *Journal of Chemical Engineering Science*, Vol. 63, Issue 7, pp. 1871-1881 [SCI IF = 1.88, Chemical Engineering: 24/116 (20.7%)]. (No. of citation: 8)
22. **J. T. Yang**,* K. J. Huang, K. Y. Tung, I. C. Hu, and P. C. Lyu, 2007, "A Chaotic Micromixer Modulated by Constructive Vortices Agitation," *Journal of Micromechanics and Microengineering*, Vol. 17, pp. 2084-2092 [SCI IF = 1.93, Mechanical Engineering: 10/112 (8.9%)]. (No. of citation: 8)
23. **J. T. Yang**,* C. Chen, I. C. Hu, and P. C. Lyu, 2007, "Design of a Self-Flapping Microfluidic Oscillator and Diagnosis with Fluorescence Methods," *IEEE/ASME Journal of Microelectromechanical Systems*, Vol. 16, No. 4, pp. 826-835 [SCI IF = 1.96, Mechanical Engineering: 5/107 (4.7%)]. **2008 National Invention Award- Silver Medal** (No. of citation: 5)
24. K. W. Lin and **J. T. Yang**,* 2007, "Chaotic Mixing of Fluids in a Planar Serpentine Channel," *International Journal of Heat and Mass Transfer*, Vol. 50, pp. 1269-1277 [SCI IF = 1.50, Mechanical Engineering: 7/107 (6.5%)]. (No. of citation: 5)
25. L. Wang and **J. T. Yang**,* 2007, "An Overlapping Crisscross Micromixer," *Journal of Chemical Engineering Science*, Vol. 62, pp. 711-720 [SCI IF = 1.78, Chemical Engineering: 17/114 (14.9%)]. (No. of citation: 11)
26. **J. T. Yang**,* C. K. Chen, K. J. Tsai, W. Z. Lin, and H. J. Sheen, 2007, "A Novel Oscillator with Step-Shaped Reattachment Walls," *Journal of Sensors and Actuators-A: Physical*, Vol. 135, pp. 476-483 [SCI IF = 1.35, Electrical and Electronic Engineering: 55/210 (26.2%), Instruments & Instrumentation: 17/55 (30.6%)]. (No. of citation: 4)
27. L. Wang and **J. T. Yang**,* 2006, "An Overlapping Crisscross Micromixer Using Chaotic Mixing Principles," *Journal of Micromechanics and Microengineering*, Vol. 16, No. 12, pp. 2684-2691 [SCI IF = 2.32, Mechanical Engineering: 6/109 (5.5%)]. (**selected into the 2006 highlights—the most representative 25 in 2006**) (No. of citation: 12)
{The quoted comment: "The articles selected received the highest praise from the international referees, ...Comprising 25 articles, the collection provides a taste of the content published in the journal."}
28. **J. T. Yang*** and K. W. Lin, 2006, "Mixing and Separation of Two-Phase Flow in a Micro Planar Serpentine Channel," *Journal of Micromechanics and Microengineering*, Vol. 16, No. 11, pp. 2439-2448 [SCI IF = 2.32, Mechanical Engineering: 6/109 (5.5%)]. (No. of citation: 10)
29. **J. T. Yang**,* J. H. Chen, K. J. Huang, and J. A. Yeh, 2006, "Droplet Manipulation over a Hydrophobic Surface with Roughened Patterns," *IEEE/ASME Journal of Microelectromechanical Systems*, Vol. 15, June, pp. 697-707 [SCI IF = 3.01, Mechanical Engineering: 3/104 (2.9%) & Electrical and Electronic Engineering: 6/208 (2.9%)]. **2007 National Innovation Award on Biotechnology** (No. of citation: 15, cited once by an article of *Annual Review of Fluid Mechanics*)
30. C. K. Chen, L. Wang, **J. T. Yang**,* and L. T. Chen, 2006, "Experimental and Computational Analysis of Periodic Flow Structure in Oscillatory Gas Flow Meters," *Journal of Mechanics*, Vol.

22, June, pp. 137-144 [SCI IF = 0.53, Mechanics: 84/109 (77%)]. **The Best Paper Award of the year 2006.** (No. of citation: 4)

31. **J. T. Yang,*** K. J. Huang, and Y. C. Lin, 2005, "Geometric Effects on Fluid Mixing in Passive Grooved Micromixers," *Lab on a Chip*, Vol. 5, pp. 1140-1147 [SCI IF = 5.27, Multidisciplinary Chemistry: 7/125 (5.6%)]. (No. of citation: 47)

國際會議論文 (International Conference Papers) :

1. M. H. Hsu, W. F. Fang, Y. H. Lai, **J. T. Yang,*** T. L. Tsai, and D. B. Shieh, 2010, "Mobile Conjugation of Gold Nanoparticles Decorated with Oligonucleotide in Microchannel Devices," *the 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences* (μ TAS-2010), Martiniplaza in Groningen, The Netherlands, 3-7 October.
2. Y. T. Chen, W. F. Fang and **J. T. Yang,*** 2010, "Chaotic Analysis and FRET Reaction of a Split-And-Recombine Microreactor," *the 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences* (μ TAS-2010), Martiniplaza in Groningen, The Netherlands, October 3-7.
3. Y. H. Chang, S. C. Ting, and **J. T. Yang,*** 2010, "Experimental study of the wing-rotation mechanism using a mechanical flapper operating at high Reynolds numbers ($10^4 \sim 10^5$)," *The 63rd Annual Meeting of the Division of Fluid Dynamics (DFD) American Physics Society*, Long Beach, CA, USA, November 21-23.
4. J. Y. Su, S. C. Ting, and **J. T. Yang,*** 2010, "Aerodynamic Tricks for Pitching Oscillation and Visual Stabilization in a Hovering Bird," *The 63rd Annual Meeting of the Division of Fluid Dynamics (DFD) American Physics Society*, Long Beach, CA, USA, November 21-23.
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24. **J. T. Yang**,* T. H. Yang, W. F. Fang, C. Y. Chiu, “Conversion of Surface Energy and Manipulation of a Single Droplet across Micro-patterned Surfaces (可控親疏水介面晶片設計與微液珠表面自由能量轉換之分析),” 兩岸清華能源研討會, August 5-6, National Tsing Hua University, Hsinchu, Taiwan (**invited speech**).
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2. J. Y. Su and **J. T. Yang**,* 2010, “Locomotive strategy of low-speed turns and vision-stabilization mechanism in a bird (*Zosterops japonicus*) (小型鳥類低速轉彎之力學策略與視覺穩定機理),” *the 34th National Conference on Theoretical and Applied Mechanics*, Yunlin University of Science and Technology, Taiwan, November 19-20. (學生論文競賽固力與材料組第一名)
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8. Z. H. Yang and **J. T. Yang**,* 2009, “Investigation of a Hybrid-structured Surface with Anti-sticking Character Using the Self-assembly Method,” *The 33rd National Conference on Theoretical and Applied Mechanics*, Miaoli, November 13-14, 2009.
9. C. C. Liu and **J. T. Yang**,* 2009, “Lift Provision Governed by Leading-edge Vortices in Asymmetrical Hovering Flight of *Zosterops japonicus*,” *The 33rd National Conference on Theoretical and Applied Mechanics*, Miaoli, November 13-14. (The best paper award in students’ paper contest)
10. J. Y. Yang, Z. H. Yang, Y. H. Lai, and **J. T. Yang**,* 2009, “Experimental Study of Mixing Mechanism of Microdroplets on the Transport Chip,” *The 26th National Conference on Mechanical Engineering*, Tainan, November 20-21.

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12. M. T. Lu, Y. H. Lai, **J. T. Yang**,* H. M. Tsai, and C. I. Li, 2009, "Analysis and Design of Novel Reactors for Hydrogen Generation," *The 26th National Conference on Mechanical Engineering*, Tainan, November 20-21.
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14. M. C. Chang, F. C. Hsiao, Y. H. Lai, and **J. T. Yang**,* 2009, "Passive Control of the Recirculating Flow by a Slotted Liner in a Sudden-Expansion Chamber," *The 2009 AASRC/CCAS Joint Conference*, Hsinchu, Taiwan, December 12.
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2. 紀興旺、林慧潔、吳思鋒、葉婉如、葉哲良，N 世代寶典：進入奈米世界武功秘笈【物理篇】，楊鏡堂與葉孟考主編，中北區奈米科技 K-12 教育發展中心出版，97 年 12 月發行於新竹.
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1. 國科會企劃處委辦計畫: 能源科技發展策略之整合研究, , 主持人, 計畫期間: 2010/06/01~2012/05/31.
2. 航太學門整合型總計畫-生物運動機制探索暨仿生系統設計, 主持人, 計畫期間: 2010/08/01~2011/07/31, 委任單位: 國科會

3. 航太學門整合型總計畫—子計畫一：生物運動力學與仿生機構設計，主持人，計畫期間：2010/08/01~2011/07/31，委任單位：國科會
4. 熱流學門整合型總計畫—低濃度 DNA 快速檢測之微全分析系統研究，主持人，計畫期間：2010/08/01~2011/07/31，委任單位：國科會
5. 熱流學門整合型計畫—子計畫一：低濃度 DNA 快速檢測之微全分析系統研究，主持人，計畫期間：2010/08/01~2011/07/31，主持人，委任單位：國科會
6. 能源科技計畫：三環燃燒器搭配非單一當量比之貧油燃燒研究，主持人，計畫期間：2010/01/01~2010/12/31，委任單位：國科會與能源局
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10. 能源科技計畫：多環燃燒器中多重火焰交互作用於節能減碳之研究，主持人，計畫期間：2009/01/01~2009/12/31，委任單位：國科會與能源局
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16. 能源科專委託專題計畫：產氫觸媒反應流床設計，主持人，計畫期間：2008/01/01~2009/12/31，委任單位：中科院
17. 國科會委辦計畫：能源計畫辦公室推動計畫，主持人，計畫期間：2008/06/01~2009/05/31，委任單位：國科會企劃處.
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19. 熱流學門整合總計畫—DNA 檢測之微全分析系統研發，主持人，計畫期間：2007/08/01~2010/07/31，委任單位：國科會
20. 航太學門整合研究總計畫—竹筴魚類推進力學研究與仿生機械研發，主持人，計畫期間：2007/08/01~2010/07/31，委任單位：國科會
21. 變倍率液體透鏡之技術開發，共同主持人，計畫期間：2007/06/01~2009/09/30，委任單位：

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23. 皮升級蛋白質與胺基酸微全分析系統－總計畫，主持人，計畫期間：
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Fluid Physics, Combustion and Energy, Computational Fluid Dynamics, Propulsion

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2. K. L. Pan, “Characteristics of ascending cylindrical flame,” *The 33rd International Symposium on Combustion*, Beijing, China (August 1 – 6, 2010).
3. K. L. Pan and M. W. Liao, “Numerical simulation of binary droplet collision using CFD software tools,” *TechConnect World Conference and Expo 2010*, Anaheim, California, USA (June 21 – 25, 2010).
4. K. L. Pan and G. C. Yin, “Parallel strategies of front-tracking method for simulation of multiphase flows,” *22nd International Conference on Parallel Computational Fluid Dynamics 2010 (Parallel CFD 2010)*, Kaohsiung, Taiwan, ROC (May 17 – 21, 2010).
5. K. L. Pan and C. Y. Hung, “Effects of Liquid and Surface Properties on Droplet-Film Collision,” *The 48th AIAA Aerospace Sciences Meeting & Exhibit* (EI), Orlando, USA, Paper Number AIAA-2010-100 (January 4 – 7, 2010).
6. K. L. Pan, “The merging dynamics of binary heterogeneous droplets,” *Conference on Computational Physics 2009*, Kaohsiung, Taiwan (December 15 – 19, 2009).
7. K. L. Pan, L. J. Kung, W. H. Huang, J. Y. Yang, and C. H. Wang, “The burning behaviors of collision-merged water/diesel, methanol/diesel, and water+methanol/ diesel droplets,” *The Sixth Asia-Pacific Conference on Aerospace Technology and Science* (6th APCATS), Huangshan, China (November 15 – 19, 2009).
8. K. L. Pan, J. W. Li, C. P. Chen, and C. H. Wang, “Binary fuel of diesels-alkane droplet combustion in microgravity,” *The Seventh Asia-Pacific Conference on Combustion* (7th ASPACC), Taipei, Taiwan, R. O. C. (May 24 – 27, 2009).
9. K. L. Pan and P. C. Chou, “On the high-impact collision between two droplets,” *The 47th AIAA Aerospace Sciences Meeting & Exhibit* (EI), Orlando, USA, Paper Number AIAA-2009-915 (January 5 – 8, 2009).
10. K. L. Pan, C. H. Wang, D. Y. Cheng, and J. Y. Yang, “The colliding and burning of high-C alkanes and low-C alcohols + benzene droplets,” *The Ninth Asia-Pacific International Symposium on Combustion and Energy Utilization* (9th APISCEU), Beijing (November 2-6, 2008).

11. K. L. Pan and P. C. Chou, "Binary droplet collision at high impact," *The 22nd International Congress of Theoretical and Applied Mechanics (ICTAM 2008)*, Adelaide, Australia (August 24-30, 2008).
12. K. L. Pan, C. C. Li, W. C. Juan, and J. T. Yang, "Low frequency oscillation of a nonpremixed flame on a bluff-body burner," *The 32nd International Symposium on Combustion*, Montreal, Canada (August 3-8, 2008).
13. K. L. Pan, "Front-tracking simulation for outward propagation of spherical flames," *The 45th AIAA Aerospace Sciences Meeting & Exhibit (EI)*, Reno, USA, Paper Number AIAA-2007-380 (January 8-11, 2007).
14. K. L. Pan, "Flame propagation with hydrodynamic and body-force instabilities," *APS March Meeting*, 2006, abstract #G8.010.

國內會議論文 (Domestic Conference Papers) :

1. K. L. Pan, "On the colliding merging of heterogeneous droplets," *2009 Computational Fluid Dynamics Conference in Taiwan 第十六屆全國計算流體力學學術研討會*, I-Lan (July 30 – Aug 1, 2009)
2. K. L. Pan, P. C. Chou, K. R. Cheng, and C. H. Wang, "Collision dynamics of high-speed droplets," *The 17th Symposium on Combustion, R. O. C.*, 中華民國燃燒學會第十七屆學術研討會, Taipei (March 31st, 2007).

專利 (Patens) :

1. 潘國隆、方爾凱，中華民國專利 『環保高效能穩焰裝置』，證書號數：M392926 公告日：99年11月21日
K. L. Pan and E. K. Fang, "Premixing-assisted combustion device," Taiwan Utility Patent No. M392926 (Filed on May 31, 2010; Issued on Nov. 21, 2010; Expired on May 30, 2020).

研究計畫 (Research Projects) :

1. 生質柴油與不同碳氫油料的混合物於微重力場之燃燒研究，主持人，計畫期間：10/08/01~11/07/31，委任單位：國科會。
Droplet combustion of biodiesel fuel mixed with diesel/alkanes/alcohols in microgravity condition, PI; period: 10/08/01~11/07/31, NSC.
2. 添加界面活性劑與不同液體之液滴與液面的碰撞研究，主持人，計畫期間：09/08/01~11/07/31，委任單位：國科會。

Collision dynamics of droplets with surfactants and variety of liquids, PI; period: 09/08/01~11/07/31, NSC.

3. 高速液滴碰撞，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
Dynamics of high-speed droplet collision, PI; period: 08/08/01~09/7/31, NSC.
4. 液滴碰撞：實驗及數值研究，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
Experimental and Numerical Studies on the Dynamics of Droplet Collision, PI; period: 07/08/01~08/7/31, NSC.
5. 前瞻性與產學合作研究計畫/工學院/火焰傳播與氫燃燒，主持人，計畫期間：07/06/01~08/12/31，委任單位：邁向頂尖大學計劃。
Flame Propagation and Hydrogen Combustion, PI; period: 07/06/01~08/12/31, Program for frontier and innovative research, NTU.
6. 液滴碰撞：實驗及數值研究，主持人，計畫期間：06/08/01~07/10/31，委任單位：國科會。
Experimental and Numerical Studies on the Dynamics of Droplet Collision, PI; period: 06/08/01~07/10/31, NSC.
7. 渦流場中之火焰傳播:流動不穩定與重力效應，主持人，計畫期間：06/01/01~06/12/31，委任單位：宗倬章先生教育基金會。
Flame Propagation with Hydrodynamic and Body-Force Instabilities in Vortical Flows, PI; period: 06/01/01~06/12/31.
8. 液滴碰撞之動力學，主持人，計畫期間：05/08/01~06/08/31，委任單位：國科會。
Dynamics of Droplet Collision, PI; period: 05/08/01~06/08/31, NSC.
9. 晶格波茲曼方法之多相流模擬:液滴碰撞，主持人，計畫期間：04/10/01~05/07/31，委任單位：國科會。
Lattice Boltzmann Method for Droplet Collision, PI; period: 04/10/01~05/07/31, NSC.

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助理教授

Assistant Professor

台灣大學, 機械工程學士, 2000

B.S. in Mechanical Engineering,
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M.S. in Mechanical Engineering,
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加州理工學院, 機械工程博士, 2006

Ph.D. in Mechanical Engineering,
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研究專長 (Specialty) :

固液二相流變學、環境流體力學、多尺度流體物理、傳輸現相

Rheology of Solid-Liquid Flows, Geophysical Flows Modeling, Multi-Scale Flow Physics, Transport Phenomena, and Related Engineering Flow Problems

期刊論文 (Journal Papers) :

1. F.-L. Yang and M.L. Hunt “Extension of Elastohydrodynamic model to predict the coefficient of restitution when a solid sphere collides on a wall in a viscous fluid beyond the low Reynolds flow condition,” submitted to Journal of Fluid Mechanics, (in review, 2011)
2. C. T. Wu, F.-L. Yang, D. L. Young, “Generalized two-dimensional Lagally theorem with free vortices,” submitted to Journal of Fluid Mechanics, (in review, 2011)
3. F.-L. Yang, W.T. Chang, Y.D. Huang, S. H. Hsieh, and C. S. Chen (2010) “A new contact model for discrete element simulation of dry or immersed granular avalanches,” submitted to Proceedings of the Royal Society A, (in review, 2011)
4. F.-L. Yang, Y.L. Tsao, and L.H. Huang “Liquid effects on the granular flows in a rotating drum with image analysis,” submitted to Physical Review E, (in review, 2010)
5. F.-L. Yang, C. H. Chen, D. L. Young “A novel mesh regeneration algorithm for 2D FEM simulations of flows with moving boundary,” submitted to Journal of Computational Physics (accepted, 2011)
6. F.-L. Yang “A formula for the wall-amplified added mass coefficient for a solid sphere in normal approach to a wall and the application on such motion at low Reynolds number,” Physics of Fluids, 22 123303 (2010)
7. F.-L. Yang & M. L. Hunt “A mixed contact model for an immersed collision between two solid surfaces,” Phil. Trans. R. Soc. A 366, 2205-2218 (2008)

8. Chang, W.T., Hsieh, S.H., Yang, F.L., and Chen, C.S. "Discrete Element Simulation of Collision-rich Dynamics of Wet Granular Flows Down An Inclined Channel," *Journal of Tsinghua University - Science and Technology*, 13(S1) (2008)
9. F.-L. Yang & M. L. Hunt, "Dynamics of Particle-Particle Collisions in a Viscous Liquid," *Physics of Fluids* 18, 121506, (2006)

國內會議論文 (Domestic Conference Papers) :

1. F.-L. Yang and L.H. Huang, "Liquid effects on the velocity profile of granular flows in a rotating drum and flow categorization," *Proceedings of the 7th International Conference on Multiphase Flow (ICMF 2010)*, May3-June 04, 2010, Tampa, Florida, USA
2. F.-L. Yang and Y.D. Huang, "Dynamics of granular avalanche via image analysis," *The 7th Pacific Symposium on Flow Visualization and Image Processing*, Nov. 16-19, 2009, Kaohsiung, Taiwan
3. F.-L. Yang and Y.L. Tsao, "Effects of interstitial liquid on the dynamics of a granular mixture in rotating drum via particle tracking," *The 7th Pacific Symposium on Flow Visualization and Image Processing*, Nov. 16-19, 2009, Kaohsiung, Taiwan
4. W.T. Chang, S.H. Hsieh, F.-L. Yang, and C.S. Chen "Fidelity of A DEM Simulation on the Initiation and Transient Discharge of A Dry Granular Bulk," *Proceedings, the 21st KKCNN Symposium on Civil Engineering (21st KKCNN)*, October 27-28, 2008, Singapore, Singapore

國際會議論文 (International Conference Presentations / Posters) :

1. F.-L. Yang, Y.T. Huang, W.T. Chang, H.S. Hsieh and C. S. Chen "DEM simulation of an immersed granular flow—using using a liquid modified contact model," *Poster, International Conference of Multiphase Flow*, May 30-June04, 2010, Tampa, Florida, USA
2. F.-L. Yang, W.T. Chang, C.S. Chen, S.H. Hsieh, and Y.D. Huang, "Liquid effect on a granular avalanche: experiments and discrete element simulation using a liquid-modified contact mode," *Oral presentation, Nov. 22-24, 2009, Minneapolis, Minnesota, USA*
3. J.T. Wu, F.-L. Yang, and D. Young, "Interaction of multiple solid objects and vortices in a two-dimensional potential flow," *Oral presentation, Nov. 22-24, 2009, Minneapolis, Minnesota, USA*
4. Y.D. Huang and F.-L. Yang, "Liquid effects on the dynamics of granular avalanche," *Oral presentation, Nov. 22-24, 2009, Minneapolis, Minnesota, USA*

國內會議論文 (Domestic Conference Papers) :

- 1 F.-L. Yang, W.T. Chang, S.H. Hsieh, and C.S. Chen, "A liquid-modified contact model for discrete-element simulation of avalanche of saturated granulates," *Forum on Computational Mechanics of Discontinua (不連續介質計算力學論壇)* Jan. 29, 2010
- 2 Y.P. Liao, C.S. Chen, F.-L. Yang, and S.H. Hsieh "Simulation of Multi-particle Dynamic Motion

in Viscous Fluid,” Forum on Computational Mechanics of Discontinua (不連續介質計算力學論壇) Jan. 29, 2010

3. F.-L. Yang, D. S. Lee, P. H. Chen, ”Taiwan Accreditation Program For RFID Engineers”, Proceedings of APEEC 2009, 11, 2009

研究計畫 (Research Projects) :

1. 液體中移動邊界動態耦合影響距離之研究，主持人，計畫期間：08/08/01~11/07/31，委任單位：國科會。
2. 優勢重點領域拔尖計畫/工學院/雙固體顆粒固液二相流的宏觀動態行為實驗及理論模型推導，主持人，計畫期間：08/08/01~09/07/31，委任單位：邁向頂尖大學計畫，教育部。
(Macroscopic behavior of an unsteady solid-liquid flow with two particle species—experiment and theory)
3. 固體顆粒動態分佈對固液二相流行為影響之研究，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
(The effects of particle segregation on solid-liquid two-phase flow rheology)
The Effects of Particle Segregation on Solid-Liquid Two-Phase Flow Rheology
4. 熱管發電系統二相流效率分析，主持人，計畫期間：07/05/01~07/12/31，委任單位：工研院。
(Analysis of the Power Re-generation Efficiency of a Heat-Pipe)

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助理教授

Assistant Professor

國立臺灣大學，機械工程學系學士，
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B.S. in Mechanical Engineering,
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M.S. in Mechanical Engineering,
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美國麻省理工學院，機械工程學系博
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Ph.D. in Mechanical Engineering,
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研究專長 (Specialty) :

電動力現象、電動水力學、極化(偶極)微米級流體

Electrokinetics, Electrohydrodynamics, Micro-polar fluids

期刊論文 (Journal Papers) :

1. Hsin-Fu Huang, Markus Zahn, and Elisabeth Lemaire, Negative electro- rheological responses of micro-polar fluids in the finite spin viscosity small spin velocity limit. I. Couette flow geometries, submitted to the Journal of Electrostatics, (2010).
2. Hsin-Fu Huang, Markus Zahn, and Elisabeth Lemaire, Continuum modeling of micro-particle electroration in Couette and Poiseuille flows—the zero spin viscosity limit, Journal of Electrostatics, Vol. 68, pp.345-359, (2010).
3. Yi-Hao Pai, Jyh-Harn Ke, Hsin-Fu Huang, Chih-Ming Lee, Jyh-Myng Zen, and Fuh-Sheng Shieu, CF₄ plasma treatment for preparing gas diffusion layers in membrane electrode assemblies, Journal of Power Sources, Vol. 161, pp.275-281, (2006).
4. Yi-Hao Pai, Hsin-Fu Huang, Yu-Chen Chang, Chih-Cheng Chou, and Fuh-Sheng Shieu, Electron-Beam Reduction Method for Preparing Electrocatalytic Particles in Membrane Electrode Assemblies (MEA), Journal of Power Sources, Vol. 159, pp.878-884, (2006).

5. Hsin-Fu Huang and Chun-Liang Lai, Enhancement of Mass Transport and Separation of Species by Oscillatory Electroosmotic Flows, Proceedings of the Royal Society A, Vol. 462(2071), pp.2017-2038, (2006).

國際會議論文 (International Conference Papers) :

1. Hsin-Fu Huang, Markus Zahn, Elisabeth Lemaire, and Mark I. Shliomis, Continuum modeling of micro-particle electrorotation in Couette and Poiseuille flows—the zero spin viscosity limit, 2009 Electrostatics Joint Conference (IEJ/ESA/IEA/IEEE-IAS/SFE), June 16-18, 2009, Boston University, Boston, MA, USA, (2009).

得獎紀錄 (Honors) :

9. 教育部/經建會/國科會 菁英專案擴增留學計畫 (Taiwan Merit Scholarships, 菁英計畫) 留學獎學金受獎人, 受獎計畫編號: TMS-094-2-A-029, 2006年8月~2010年7月。

研究計畫 (Research Projects) :

12. 黃信富, 微型全分析系統中非牛頓流體擴散滲透流之理論模擬與分析, 主持人, 委託單位: 行政院國家科學委員會, 計畫編號: NSC99-2218-E-002-037, 2010年11月~2011年10月。

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臺灣大學，機械工程學士,1972

B.S. in Mechanical Engineering,
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M.S. in Chemical Engineering, Case
Western Reserve University, 1976

Odessa State Academy of Refrigeration,
烏克蘭，能源與制冷技術，國家榮譽
博士, 2001

Odessa State Academy of Refrigeration,
Ukraine, 2001

研究專長 (Specialty) :

能源科技(EC) 、機械熱流(E2)、控制(EM)

Energy technology, Thermal and Fluid, System and Control

期刊論文 (Journal Papers) :

1. B. J. Huang, J. H. Wu, H. Y. Hsu, and J. H. Wang. Development of Hybrid Solar-assisted Cooling/Heating System. *Energy Conversion and Management* 51, pp.1643–1650, 2010.
2. B.J. Huang, M.S. Wu, P.C. Hsu, J.W. Chen, K.Y. Chen. Development of high- performance solar LED lighting system. *Energy Conversion and Management* 51, pp.1669–1675, 2010.
[TOP25 Hottest Articles (Number 20, 2010/April-June)]
3. Fu-Cheng Wang, Chun-Wen Tang, and Bin-Juine Huang. Multivariable Robust Control for a Red–Green–Blue LED Lighting System. *IEEE TRANSACTIONS ON POWER ELECTRONICS* 25 (2), 417-428 (2010).
4. B.J. Huang, P.C. Hsu, M.S. Wu, P.Y. Ho. System dynamic model and charging control of lead-acid battery for stand-alone solar PV system. *Solar Energy* 84, pp. 822–830, 2010.
5. B.J. Huang, C.W. Yen, J.H. Wu, J.H. Liu, H.Y. Hsu, V.O. Petrenko, J.M. Chang, C.W. Lu. Optimal control and performance test of solar-assisted cooling system. *Applied Thermal Engineering* 30, pp.2243-2252 (2010).
6. B.J. Huang, P.E. Yang, Y.P. Lin, B.Y. Lin, H. J. Chen, R. C. Lai, J. S. Cheng. Solar cell junction temperature measurement of PV module. *Solar Energy* 85(2), pp.388-392(2011).

7. B.J. Huang, C.W. Yen, J.H. Liu, J. H. Wu, H.Y. Hsu, V.O. Petrenko, J.M. Chang, and C.W. Lu. Performance test of solar-assisted ejector cooling system. Submitted to *Int J Refrigeration*, 2010.
8. V.O. Petrenko, B.J. Huang, V.O. Ierin. Design-theoretical study of cascade CO₂ sub-critical mechanical compression/butane ejector cooling cycle. Accepted for publication in *Int J Refrigeration*, 2010.
9. B.J. Huang, J.H. Wang, J.H. Wu, P.E. Yang. “A fast response heat pump water heater using thermostat made from shape memory alloy”. *Applied Thermal Engineering* 29, pp.56–63 (2009)
10. Bin-Juine Huang, Chun-Wen Tang, Min-Sheng Wu. “System dynamics model of high-power LED luminaire”. *Applied Thermal Engineering* 29, pp.609–616(2009). [**TOP25 Hottest Articles (Number 16), 2008/Oct-Dec**]
11. Jin Hua Wang, J. H. Wu, S. S. Hu, and B. J. Huang. “Performance of ejector cooling system with thermal pumping effect using R141b and R365mfc”. *Applied Thermal Engineering* 29, 1904–1912 (2009).
12. M.S. Wu, H.H. Huang, B.J. Huang, C.W. Tang, C.W. Cheng. Economic feasibility of solar-powered LED roadway lighting. *Renewable Energy* 34, 1934-1938(2009).
13. B.J.Huang and H.H.Huang. System dynamics model and startup behavior of loop heat pipe. *Applied Thermal Engineering* 29, pp.2999-3005(2009).
14. Bin-Juine Huang, Chun-Wen Tang Thermal–electrical–luminous model of multi-chip polychromatic LED luminaire. *Applied Thermal Engineering* 29, pp.3366-3373(2009).
15. Huang BJ, Wu MS, Hsu PC, “A PWM constant average current driving technique for solar LED lighting systems”. *Journal of The Chinese Society Of Mechanical Engineers* 30(6), 455-465, 2009.
16. Jin Hua Wang, J. H. Wu, S. S. Hu, and B. J. Huang, “Performance of ejector cooling system with thermal pumping effect using R141b and R365mfc,” accepted for publication in *Applied Thermal Engineering* (2008).
17. Bin-Juine Huang, Chun-Wen Tang, Min-Sheng Wu. “System dynamics model of high-power LED luminaire,” accepted for publication in *Applied Thermal Engineering* (2008).
18. B.J.Huang, H.H.Huang, C.W.Chen, and M.S.Wu, “Development of high-power LED lighting luminaries using loop heat pipe”. *J. Light & Vis. Env.*, Vol.32, No.2, pp.148-155(2008).
19. B.J. Huang, J.H. Wang, J.H. Wu, P.E. Yang. “A fast response heat pump water heater using thermostat made from shape memory alloy”. Accepted for publication in *Applied Thermal Engineering* (2008).
20. B.J.Huang, P.E.Yang, C.Y.Chen, R.H.Yen, J.H.Wu, and H.Wang. “Development of an integral-type solar water heater using loop heat pipe”. *ISESCO Science and Technology Vision*, Vol.4, No.5, pp.75-79 (2008).
21. B.J.Huang and P.C. Hsu, “Study of System Dynamics Model and Control of a High-Power LED Lighting Luminaire,” *Energy* 32, 2187–2198(2007). SCI
22. B.J.Huang, Y.C.Liao, and T.C.Kuo, “Study of a New Environmental Chamber Design,” *Applied Thermal Engineering* 27(11-12), 1967-1977(2007). SCI

23. B.J.Huang and C.P.Lee: “Performance Evaluation Method of Solar-Assisted Heat Pump Water Heater,” *Applied Thermal Engineering* 27, pp.568-575(2007). SCI
24. B.J. Huang and F.S.Sun: “Feasibility Study of 1-Axis Three-Position Tracking Solar PV with Low Concentration Ratio Reflector,” *Energy Conversion and Management*, Vol.48, pp.1273-1280(2007). SCI
25. B.J.Huang, F.S.Sun and R.W.Ho: “Near-Maximum-Power-Point-Operation (nMPPO) Design of Photovoltaic Power Generation System,” *Solar Energy* 80(8),1003-1020(2006).SCI
26. B.J. Huang, S.S. Hu, S.H. Lee, “Development of an Ejector Cooling System with Thermal Pumping Effect,”*International Journal of Refrigeration* 29,pp.476–484 (2006). SCI

國際會議論文 (International Conference Papers) :

1. BJ Huang, YJ Ton, YC Lin, JF Yeh. Building-integrated solar collector. *2010 NTU/KAUST/AUC Workshop on Solar Building Technology*, National Taiwan University, Taipei, Taiwan. April 28, 2010.
2. BJ Huang, TL Chong, CJ Wu, PE Yang. High-efficiency solar-distillation technology. *2010 NTU/KAUST/AUC Workshop on Solar Building Technology*, National Taiwan University, Taipei, Taiwan. April 28, 2010.
3. BJ Huang, PC Hsu, JW Lin, MS Wu. Active-cooling LED lighting. *2010 NTU/KAUST/AUC Workshop on Solar Building Technology*, National Taiwan University, Taipei, Taiwan. April 28, 2010.
4. BJ Huang, RH Yen, TF Hou, KR Lin, YH Chuang, SW Chang, TL Lin, JH Liu, YC Lin, PC Hsu, LT Wu, CT Liu, JF Yeh, IH Yeh, JH Lin. Zero-Energy House. *2010 NTU/KAUST/AUC Workshop on Solar Building Technology*, National Taiwan University, Taipei, Taiwan. April 28, 2010.
5. Petrenko V.O., Huang B.J., Shestopalov K.O., Ierin V.O., Volovyk O.S. Theoretical Study and Design of Small-scale Cascade CO₂ Sub-critical Mechanical Compression / Ammonia Ejector Refrigerating Unit, *The 5th Asian Conference on Refrigeration and Air-conditioning*, June 7–9, 2010, Tokyo, JAPAN.
6. B. J. Huang, P. C. Hsu, M. S. Wu, K.Y. Chen: “A high-performance stand-alone solar PV power system for LED lighting”. *The 35th IEEE Photovoltaic Specialists Conference*. June 20-25, 2010, Honolulu, Hawaii, USA.
7. BJ Huang, JH Wu, RH Liu, JW Yen, HY Hsu, and JM Chang: Field test of solar-assisted cooling system. *International Conference on Solar Heating, Cooling and Buildings “EuroSun2010”*, Sept 28-Oct 1, 2010, Graz, Austria.
8. V.O.Petrenko, K.O.Shestopalov, O.S.Volovyk, V.O.Ierin, B.J.Huang: Design and modeling of innovative solar ejector air conditioners and chillers operating with low-boiling working fluids, *International Conference on Solar Heating, Cooling and Buildings “EuroSun2010”*, 28 September – 1 October, 2010, Graz, Austria.
9. V.O.Petrenko, B.J.Huang, K.O.Shestopalov, V.O.Ierin: “Theoretical study and design of solar ejector conditioner utilizing thermally actuated feed pump”, 4th Asian Conference on Refrigeration and Air-conditioning, May 21–22, 2009, Taipei, TAIWAN.

10. BJ Huang, JH Wu, JH Wang, and H.Y. Hsu: “Development of hybrid solar assisted cooling /heating system”. *Global Conference on Renewables and Energy Efficiency for DEsert Regions*, March 31-April 2, 2009. Amman, Jordan.
11. BJ Huang, M. Wu, P. Hsu, J. Chen and K.Y. Chen: “Development of high performance solar LED lighting system”. *Global Conference on Renewables and Energy Efficiency for DEsert Regions*, March 31-April 2, 2009. Amman, Jordan.
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3. 黃秉鈞、吳民聖、林伯錚:「獨立型移動式太陽能冰箱」，中華民國新型專利 200722693 (2007)。
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得獎紀錄 (Honors)：

1. 國科會傑出研究獎(2010)
2. 沙烏地阿拉伯國王科技大學全球研發中心獎(KAUST GRP Award) (2008-2012)

研究計畫(Research Projects)：

1. 迴路熱管之穩定性分析研究，主持人，計畫期間：08/08/01~11/07/31，委任單位：國科會。
2. 前瞻性太陽能應用技術研發(4/4)，主持人，計畫期間：08/01/24~08/12/31，委任單位：經濟部能源局。
3. 高亮度 LED 照明光色控制技術研究(2)，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
Lighting Control of High-Power LED (2), Project period:07/08/01~08/07/31, Organization: National Science Council.
4. 前瞻性太陽能應用技術研發(3/4) ，主持人，計畫期間：07/01/01~07/12/31，委任單位：經濟部能源局。
5. 壓縮機性能測試分析與應用示範，主持人，計劃期間:07/03/01~08/02/29，委任單位: 東元電機。
Test and Demonstration of Can Compressor, PI; Project period: 07/03/01~08/02/29, Organization: TECO Co.
6. 高亮度 LED 彩色照明技術開發，主持人，計劃期間:07/01/01~07/12/31，委任單位: 恆傑光電。
Development of LED Color Lighting, PI; Project period: 07/01/01~07/12/31, Organization: L&C Co.
7. 高亮度 LED 照明光色控制技術研究(1)，主持人，計劃期間:06/08/01~07/07/31，委任單位: 國科會。
Lighting Control of High-Power LED(1), PI; Project period: 06/08/01~07/07/31, Organization: National Science Council.
8. 前瞻性太陽能應用技術研發(2/4)，主持人，計劃期間:06/01/01~06/12/31，委任單位: 經濟部能源局。
Advanced Solar Energy Study (2/4), PI; Project period: 06/01/01~06/12/31, Organization: Energy Bureau.
9. 高亮度 LED 輔助照明燈具開發，主持人，計劃期間:06/01/01~06/12/31，委任單位: 恆傑光電。
High-power LED Lighting Design, PI; Project period: 06/01/01~06/12/31, Organization: L&C Co..

10. 熱泵熱水器設計與產品推廣教育(五), 主持人, 計劃期間:06/01/01~06/12/31, 委任單位: 善騰太陽能公司。
Heat Pump Design and Product Education (5), PI; Project period: 06/01/01~06/12/31, Organization: SunTech Co..
11. 新能源科技研發, 主持人, 計劃期間:06/01/01~08/12/31, 委任單位: 江陵機電。
Study of New Energy Systems, PI; Project period: 06/01/01~08/12/31, Organization: KongLin Co..
12. 高亮度 LED 之動態特性研究, 主持人, 計劃期間:05/08/01~06/07/31, 委任單位: 國科會。
System Dynamics of High-Power LED, PI; Project period: 05/08/01~06/07/31, Organization: National Science Council..
13. 高亮度 LED 照明技術之研發(二), 主持人, 計劃期間:05/07/01~06/06/30, 委任單位: 陽傑科技。
Study of High-Power LED (2), PI; Project period: 05/07/01~06/06/30, Organization: ATD, Inc..
14. 模組式太陽能熱水器設計分析研究, 主持人, 計劃期間:05/07/01~06/06/30, 委任單位: 江陵機電。
Design of Module Solar Water Heater, PI; Project period: 05/07/01~06/06/30, Organization: KongLin Co..

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Robotics, Automation System, Precision System Control, Prosthetic Hands, RFID Systems

期刊論文 (Journal Papers) :

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專利 (Patents) :

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16. 驅動系統，中華民國專利（發明），申請中。
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得獎紀錄 (Honors) :

1. 國科會傑出特約研究獎, 2009.04.28.
2. 2008 IEEE International Competition for Intelligent Robot Software, Seoul, Korea, First Place, August 10~12, 2008.
3. 2007 IEEE International Competition for Intelligent Robot Software, Seoul, Korea, Silver Award 第二名, August 8~11, 2007.

4. 台灣大學終身特聘教授，2006.8.
5. 年度最佳期刊論文獎，2006 年中國工業工程學會。
6. 最佳會議論文獎，2006 年全國工業工程研討會。
7. 國科會特約研究獎(2005-2008)
8. 98 學年度「宗倬章先生講座」得獎人
9. 2009 年上銀機械手臂競賽第一名
10. 2009 年 National Instruments 圖形化系統設計應用競賽-第八屆徵文比賽，論文競賽（第一名）
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研究計畫 (Research Projects) :

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5. 黃漢邦(主持), 自動化學門研究發展推動小組(3/3), 國科會, 編號 NSC 94-2217-E-002-001-94C1083, 執行日期 94/12/01~95/07/31。
Planning Committee of Automation Division (3/3)
6. 黃漢邦(主持), 影像顯示科技人才培育計畫-機械系資本門 95M1095-1,教育部, 編號 95M1095-1, 執行日期 95/01/01~95/12/31。
Training Center for Image Display Technologies- Capital of Mechanic
7. 黃漢邦(主持), 影像顯示科技人才培育計畫-北東區區域人才培育中心 95M1095, 教育部, 編號 95M1095, 執行日期 95/01/01~95/12/31
North and East Training Center for Image Display Technologies
8. 黃漢邦(主持),影像顯示科技種子師資培育 J0017, 教育部, 執行日期 95/01/01~95/12/31。
Center of Teacher Education for Image Display Technologies
9. 黃漢邦(主持), 影像顯示科技人才培育計畫-種子師資培育計畫進階班 95M1095A, 教育部, 編號 95M1095A, 執行日期 95/01/01~95/12/31。
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10. 黃漢邦(主持),96-99 年 RFID 科技與應用人才培育先導型計畫先期規劃 95M1022, 教育部, 執行日期 95/02/01~95/05/31。

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19. 黃漢邦(主持),97 年度[仿生人形機器人之發展]子計畫四：具雙機器手臂之半身擬人形機器人之發展與整合:(1/3),經濟部,編號 95-EC-17-A04-S1-054-95B52035,執行日期 97/09/01~98/08/31。
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3. 二維同步系統，精密機械發展中心，技轉金額：300,000 元，2009 年 6 月。
4. 清掃機器人清掃法則，和碩公司，技轉金額：100,000 元，2009 年 8 月。
5. 電源管理系統，承德科技，技轉金額：700,000 元，2010 年 2 月。
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研究專長 (Specialty) :

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專書 (Books) :

1. 工程發展與社會變遷, 陽毅平, 張文亮等, 國立臺灣大學通識課程教學參考資料叢書。

得獎紀錄 (Honors) :

1. 2008 年以「輪椅馬達驅動結構」榮獲「財團法人徐有庠先生紀念基金會」生技醫藥類『第六屆有庠科技獎』暨『第三屆有庠科技發明獎』。(2008.7.3)
2. 與碩士學生楊士進共同榮獲第四屆上銀科技機械碩士論文工具機特別獎。(2008.3.29)榮獲行政院、立法院、暨國家生技醫療產業策進會 2007 第五屆「國家新創獎」:獲獎作品 - 學術研究組「手輪馬達電動輪椅」。(2007.12.20)
3. 指導碩士學生楊士進榮獲第四屆上銀科技機械碩士論文工具機特別獎, 97.3.29。
4. 指導碩士學生范勝凱榮獲第三屆上銀科技機械碩士論文獎, 96.3.31。

研究計畫 (Research Projects) :

1. 電動輪車車輪馬達離型製作與技術移轉, 主持人, 計畫期間: 07/05/01~08/04/30, 委任單位: 國科會。
Product Development of Foldable Electric Wheelchair Driven by Rim Motors
2. 創新手輪馬達電動輪椅混合動力系統整合研究與開發-總計畫: 創新手輪馬達電動輪椅混合動力系統整合研究與開發, 主持人, 計畫期間: 08/08/01~09/07/31, 委任單位: 國科會。
Modularization and integration of the propulsion system of an innovative electric powered wheelchair with rim Motors
3. 無凸輪軸引擎電磁式汽門機構之系統研發與實驗平台建置, 主持人, 計畫期間: 06/08/01~08/07/31, 委任單位: 國科會。
Advanced Technology on System Design and Experimental Platform Setup for Electromechanical Valvetrain in Camless Engine
4. 太陽能燃料電池混合動力直接驅動車之研發與展示-子計畫三: 太陽能燃料電池混合動力車多相車輪馬達動力系統性能提升技術研發(3/3), 主持人, 計畫期間: 06/08/01~08/07/31, 委任單位: 國科會。
Design, Control and Management of Propulsion System of Advanced Hybrid Vehicles with Solar & Fuel Cell Power
5. 輕型電動機車車輪馬達離型製作與技術移轉, 主持人, 計畫期間: 05/11/01~06/10/31, 委任單位: 國科會。

Fabrication and Technology Transfer of Wheel Moter for Light Weight Electric Motorcycle

6. 輕型電動機車車輪馬達離型製作與技術移轉，主持人，計畫期間：05/11/01~06/10/31，委任單位：特潔系統分析(股)公司。

Fabrication and Technology Transfer of Wheel Moter for Light Weight Electric Motorcycle

7. 太陽能燃料電池混合動力直接驅動車之研發與展示-子計畫三：太陽能燃料電池混合動力車多相車輪馬達動力系統性能提升技術研發(2/3)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

Design, Control and Management of Propulsion System of Advanced Hybrid Vehicles with Solar & Fuel Cell Power

顏家鈺

Jia-Yush Yen

教授

Professor

清華大學，動力機械學士，1980

B.S. in Power Mechanical Engineering,
National Tsinghua University, 1980

明尼蘇達大學，機械工程碩士，1983

M.S. in Mechanical Engineering,
University of Minnesota, 1983

加州大學柏克萊分校，機械工程博士，
1988

Ph.D. in Mechanical Engineering,
University of California, Berkeley, 1988

研究專長 (Specialty) :

奈米操控、嵌入式系統、精密伺服

Nano-Manipulation, Embedded Systems, Precision Servo

期刊論文 (Journal Papers) :

1. Shu-Hung Liu, Tse-Shih Huang, **Jia-Yush Yen**, "Tracking control of shape-memory-alloy actuators based on self-sensing feedback and inverse hysteresis compensation," *Sensors*, **10**, pages:112-127, 2010. (NSC 95-2221-E-002-302-MY3) (SCI, 1.87, 12/22, 11/56)
2. Shu-Hung Liu, Tse-Shih Huang, **Jia-Yush Yen**, "Comparison of sensor fusion methods for an SMA-based hexapod biomimetic robot," *Robotics and Autonomous Systems*, (To appear) (NSC 94-2213-E-002-021) (SCI, 1.214, 28/53, 8/14)
3. Ching-En Tseng, **Jia-Yush Yen**, Ming-Wei Chang, Wei-Chien Chang, Chih-Kung Lee, "A Modified Frequency Partitioned Spectral Estimation for the Wireless Health Advanced Monitoring Bio-diagnosis System," *IEEE Transactions on Systems Man & Cybernetics, Part A*, (Accepted) (NSC92-2218-E-002-048) (SCI, 1.350, 30/85, 8/17)
4. Ching-En Tseng, Ching-Yu Peng, Ming-Wei Chang, **Jia-Yush Yen**, Chih-Kung Lee, Tse-Shih Huang, "Novel Approach to Fuzzy-Wavelet ECG Signal Analysis for a Mobile Device," *Journal of Medical Systems*, DOI 10.1007/s10916-008-9217-x, 2009 (NSC92-2218-E-002-048) (SCI, 0.674, 18/20)
5. Wang, FC; Tsao, YC; **Yen, JY**, "The Application of Disturbance Response Decoupling to the Vibration Control of an Electron Beam Lithography System," *JAPANESE JOURNAL OF APPLIED PHYSICS*, **48**(6), Article Number: 06FB04, 2009 (NSC 97-2622-E-002-012-CC1) (SCI, 1.309, 49/95)
6. Chen, Yung-Pin, Chen, Cheng-Hung, Chang, Jer-Haur, Chiu, Hsin-Chieh, Chen, Guan-Yu, Chiang, Chieh-Hsiu, Chen, Lien-Sheng, Tseng, Ching-Tung, Lee, Chih-Hsien, **Yen, Jia-Yush**,

- Wang, Lon A., "Stitching periodic submicron fringes by utilizing step-and-align interference lithography," *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B*, **27**(6), Pages: 2951-2957, 2009 (MOEA 98-EC-17-A-05-S2-0129) (SCI, 1.445, 77/229, 30/52, 44/95)
7. Yao-Ting Mao, Kai-Chen Kuo, Ching-En Tseng, Jian-Yin Huang, Yi-Chih Lai, **Jia-Yush Yen**, Chih-Kung Lee, and Wei-Li Chuang, "Research on three dimensional machining effects using atomic force microscope," *Review of Scientific Instruments*, **80**, 065105, 2009. (NSC97-2622-E-002-012-CC1) (SCI, 1.783, 16/56, 36/95)
 8. Wei-Li Chuang, Cheng-Hung Chen, **Jia-Yush Yen**, Yuan-Liang Hsu, "Using MPCA of spectra model for fault detection in a hot strip mill," *Journal of Materials Processing Technology*, **209**(8), 21 April 2009, pp.4162-4168 (NSC95-2221-E-002-435-MY3) (SCI, 1.143, 10/38)
 9. Jia-Yush Yen, Yea-Chin Yeh, Yung-Hao Peng, Jyh-Fa Lee, "Application of the continuous no-reset switching iterative learning control on a novel optical scanning system," *Mechatronics*, **19**(1), February 2009, Pages 65-75 (NSC93-2623-7-002-006) (SCI, 1.434, 19/105)
 10. Wu, Chih-Ching, Chen, Wen-Shiang, Ho, Ming-Chih, Huang, Kai-Wen, Chen, Chiung-Nien, **Yen, Jia-Yush**, Lee, Po-Huang, "Minimizing abdominal wall damage during high-intensity focused ultrasound ablation by inducing artificial ascites," *Journal of Acoustical Society of America*, **124**(1), 674-679, 2008 (SCI, 1.717, 7/26) (NSC92-2218-E-002-048)
 11. Liu, Shu-Hung, Lai, Yi-Chih, **Yen, Jia-Yush**, "Parameter identification when designing a solid-modeling-based grinding-machine controller," *International Journal of Machine Tools & Manufacture*, **48**(7-8), June 2008, pp.851-857. (SCI, 1.576, 13/105) (NSC94-2213-E-002-017)
 12. Chuang, WL; Chen, CH; **Yen, JY**, Hsu, YL, "Downcoiler surface fault prediction for a hot strip steel mill," *Proceedings of the Institution of Mechanical Engineers Part I-Journal of Systems and Control Engineering*, **222**(8), 771-786, 2008 (SCI, 0.322, 49/53) (NSC94-2213-E-002-017)
 13. Fu-Cheng Wang, Hsuan-Tsung Chen, Yee-Pien Yang, **Jia-Yush Yen**, "Multivariable robust control of a proton exchange membrane fuel cell system," *Journal of Power Sources*, **177**(2), March 2008, Pages 393-403 (SCI, 3.477, 4/67) (NSC95-2221-E-002-435-MY3)
 14. Mandy Liu, Pei-Fen Chang, Andrew M. Wo, **Jia-Yush Yen**, Yeong-Bin Yang and Che-Ho Wei, "Quality Assurance of Engineering Education through Accreditation of Programs in Taiwan" *International Journal of Engineering Education*, **24**(5), pp. 854–863, 2008 (SCI, 0.552, 43/68)
 15. Yi-Chih Lai; Ye-Ling Lee; **Jia-Yush Yen**, "Design and Servo Control of a Single-Deck Planar Maglev Stage," *Magnetics, IEEE Transactions on*, **43**(6), June 2007 pp:2600 – 2602, (SCI, 1.129, 110/229) (NSC91-2213-E-002-022)
 16. Chung-Wen Hung; Cheng-Tsung Lin; Chih-Wen Liu; **Jia-Yush Yen**, "A Variable-Sampling Controller for Brushless DC Motor Drives With Low-Resolution Position Sensors," *Industrial Electronics, IEEE Transactions on*, **54**(5), Oct. 2007 Page(s):2846 – 2852, Digital Object Identifier 10.1109/TIE.2007.901303 (SCI, 5.468, 2/229) (NSC92-2213-E-002-052)
 17. Yea-Chin Yeh, **Jia-Yush Yen**, Jyh-Fa Lee, Wei-Chien Tu, "The Application of the No-reset Iterative Learning Control on a Novel Optical Scanning System," *Journal of CSME*, **27**(5), pp.593-598, 2006. (EI)
 18. Chih-Ching Wu, Yao-Shen Tung, Hao-Li Liu, Wen-Shiang Chen, Win-Li Lin, **Jia-Yush Yen**,

“In-vitro and In-vivo Investigation of Contrast-agent Enhanced Ultrasound Thermal Ablation,” *Ultrasound in medicine & biology*, **32**, no. 5, pp. 110, (May, 2006) (SCI) (2.395, 3/26) (NSC92-2218-E-002-048)

19. Yi-Chih Lai, **Jia-Yush Yen**, “Design of a novel 6-DOF planar maglev system,” *Journal of Magnetism and Magnetic Materials*, 304, 2006, e386-e390. (SCI, 1.283, 83/191) (NSC91-2213-E-002-022)
20. Ruey-Jeng Lee, Kuan-Chien Chou, Shu-Hung Liu, **Jia-Yush Yen**, “Solid modeling based servo system design for a high speed micro grinding machine,” *International Journal of Machine Tools and Manufacture*, **46**(2), February 2006, pp. 208-217 (SCI, 1.576, 13/105) (NSC90-2213-E-002-055)

國際會議論文 (International Conference Papers) :

1. Yea-Chin Yeh, Jia-Yush Yen, Chih-Kai Shiao, “A Study on Sliding Mode Control with Hysteresis Compensation Model for a Piezo-positioning Stage Used in E-beam Lithography System,” Proceedings of 2007 CACS International Automatic Control Conference, Taiwan, Nov. 9-11, 2007.
2. Shu-Hung Liu, Jia-Yush Yen, Tito Lu Tang Chen, “A Novel Actuation Mechanism Design for the Snake Robot,” Proceedings of 2007 CACS International Automatic Control Conference, Taiwan, Nov. 9-11, 2007.
3. Tito Lu Tang Chen, Shu-Hung Liu, Jia-Yush Yen, “A Bio-mimetic Snake-like Robot: Sensor Based Gait Control,” IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO), Taiwan, 2008.
4. Tito Lu Tang Chen, Shu-Hung Liu, Sz Lung Chen, Jia-Yush Yen, “A Bio-mimetic Snake-like Robot: Sensor Based Gait Control,” Proceedings of 2008 CACS International Automatic Control Conference, Taiwan, Nov. 21-23, 2008.
5. Fu-Tsun Kuo, Jia-Yush Yen, Yea-Chin Yeh, Po-Jyun Lee, Yu-Cian Chang, “A Precise Multi-Axis Piezo-positioning Stage Control,” Proceedings of 2008 CACS International Automatic Control Conference, Taiwan, Nov. 21-23, 2008.
6. Cheng-Hung Chen, Jia-Yush Yen, Lien-Sheng Chen and S. H. Chang, “Stitching Technology Using Hybrid Actuators in Nano-Impring,” ASME DETC Conference, USA, Aug. 3-6, 2008.
7. Jia-Yush Yen, Cheng-Hung Chen, Lien-Sheng Chen, Kuen-Yu Tsai, Shuo-Hung Chang, “Hybrid Servo Design for Large Area Nano Pattern Stitching,” International Conference on Advanced Intelligent Mechatronics, Singapore, Jul. 14-17, 2009.
8. Lien-Sheng Chen, Jia-Yush Yen, Yea-Chin Yeh, Yu-Cian Chang, Pablo Chiu, “High Accuracy Positioning Stage for an E-Beam Lithography System,” Proceedings of 2009 CACS International Automatic Control Conference, Taiwan, Nov. 27-29, 2009.
9. Tito Lu Tang Chen, Sz-Lung Chen, Shu-Hung Liu, Jia-Yush Yen, “Design, Fabrication and Unconventional Serpenoid Motion Control of a Biomimetic Snake-like Robot,” Proceedings of 2009 CACS International Automatic Control Conference, Taiwan, Nov. 27-29, 2009.

10. Y. Lai, K. Kuo, C. Wu, J. Yen and C. Chou, "Design of Multi-Function PWM Inverter Applied to Analysis of Core Loss under Non-Sinusoidal Waveforms," *Proceedings of the IEEE International Magnetics Conference*, 2009.
11. Cheng-Hung Chen, Jia-Yush Yen, Lien-Sheng Chen, Shuo-Hung Chang, "STITCHING TECHNOLOGY USING HYBRID ACTUATORS IN NANO IMPRINT," *Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE*, 2008 August 3-6, 2008, Brooklyn, New York, USA DETC2008-49260
12. Tito Lu Tang Chen, Shu-Hung Liu, Jia-Yush Yen, "A Bio-mimetic Snake-like Robot: Sensor Based Gait Control," *IEEE International Conference on Advanced Robotics and its Social Impacts*, Aug. 23-25, Taipei, Taiwan, 2008.
13. Shu-Hung Liu, Tse-Shih Huang and Jia-Yush Yen, "Sensor Fusion in a SMA-based Hexapod Bio-mimetic Robot," *IEEE International Conference on Advanced Robotics and its Social Impacts*, Aug. 23-25, Taipei, Taiwan, 2008.
14. Yen, JY, M. Liu, J. Fan, C. Liu, "Recent development on Engineering Design Education in Taiwan," *Invited Talk*, NABEEA General Assembly and JABEE Symposium on Engineering Education, Sep. 3-4, Sapporo, Japan, 2008.
15. Fu-Cheng Wang, Hsuan-Tsung Chen, Jia-Yush Yen, "Multivariable LQG Control of a Proton Exchange Membrane Fuel Cell System," *Proceedings of the 17th World Congress*, The International Federation of Automatic Control, Seoul, Korea, July 6-11, 2008, P10995.
16. Shu-Hung Liu, Yi-Ting Chen, Jia-Yush Yen, "Sensor fusion in a Six-legged Bio-mimicking Robot," *Proceedings of the 17th World Congress*, The International Federation of Automatic Control, Seoul, Korea, July 6-11, 2008, P15624.
17. Yen, Jia-Yush, Lee, Ye-Ling, Lai, Yi-Chih, "A single deck 2D magnet levitation platform," *2007 IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, AIM, Zurich, Swiss, 9/4 ~ 8, 2007, p 4412538
18. Y.L. Lee and J.Y. Yen, "Design and Servo Control of a Single-Deck Planar Maglev Stage," *10th Joint MMM-INTERMAG Conference*, January 7-11, 2007, Baltimore, USA.
19. Su-Hong Liu, Jia-Yush Yen, "Sensor fusion in a Six-legged Bio-mimicking Robot," *Proceedings of IFAC Mechatronics 2006- 4th IFAC Symposium on Mechatronic Systems*, Heidelberg, Germany, 9/12~16, 2006
Also, attended TC4.2 Technical Committee for Mechatronics TC Meeting (Now in charge of IFAC TC4.2 website)
20. C. E. Tseng, J. Y. Yen, and W. C. Chang, "A Sub-band Spectral Analysis for Electrocardiography," *2006 IEEE International Conference on System, Man and Cybernetics*, Oct. 8~10, Grand Hotel, Taipei, Taiwan, 2006.
21. Y.C. Lai, Y.L. Lee and J.Y. Yen, "Design and Implementation of a Novel Triangular Planar Maglev System," *INTERMAG 2006 Conference*, May 8-12, 2006 San Diego, US.
22. Shu-Hung Liu, Jia-Yush Yen, "A HEXAPOD ROBOT BASED ON SHAPE MEMORY ALLOY ACTUATORS," *4th IFAC-Symposium on Mechatronic Systems*, September 12-14,

- 2006, Heidelberg, Germany, Proceedings of MECHATRONICS 2006 – 4th IFAC-Symposium on Mechatronic Systems, pp689-693, Heidelberg, Germany, 2006
23. Chih-Ching Wu, Yao-Shen Tung, Hao-Li Liu, Wen-Shiang Chen, Win-Li Lin, Jia-Yush Yen, “In-vitro and In-vivo Investigation of Contrast-agent Enhanced Ultrasound Thermal Ablation,” *11th Congress of the World Federation for Ultrasound in Medicine and Biology*, 2006.5.28~2006.6.1, Seoul, Korea, 2006, *Ultrasound in medicine & biology*, 32, no. 5, (2006): 110
 24. Yea-Chin Yeh, Chun-Hung Liu, Kuen-Yu Tsai, Jia-Yush Yen, Yu-Chen Kung, Arthur Tay, Jyh-Fa Lee, “IDENTIFICATIONS OF THE PZT ACTUATED NOVEL OPTICAL SCANNING SYSTEM /FEEDBACK CONTROL OF PIEZO-BASED NANOPOSITIONING SYSTEMS FOR SEMICONDUCTOR MANUFACTURING,” *IFAC workshop on Advanced Process Control for Semiconductor Manufacturing*, Dec. 04-05, 2006, Furuma Hotel, Singapore, Proceedings of IFAC
 25. Yea-Chin Yeh, Jia-Yush Yen, Jyh-Fa Lee, Wei-Chien Tu, “The Application of the No-reset Iterative Learning Control on a Novel Optical Scanning System,” *International Symposium on Precision Mechanical Measurements*, August 2-6, 2006 Urumqi, Xinjiang , China.
 26. Wei-Li Chuang, Jia-Yush Yen, “Study Three D.O.F. Vehicle Dynamics and Lane Keeping Control Problems,” *Proceedings of AVEC 2006 The 8th International Symposium on Advanced Vehicle Control*, August 20-24, 2006 Taipei, Taiwan, AVEC060090.

專利 (Patents) :

1. 步進排列式干涉微影方法與系統。臺灣，申請中。顏家鈺、張所銘、陳正宏、陳聯聖。台灣大學。
2. 用於電磁特性量測之環型試片裝置。台灣、中國，申請中。李炳坤、顏家鈺、郭開誠、賴益志、吳政儒。台灣大學／中鋼。
3. 非正弦波電磁特性之多功能量測架構。台灣、中國，申請中。李炳坤、顏家鈺、郭開誠、賴益志、吳政儒。台灣大學／中鋼。
4. Electromagnetic winding assembly cross-reference to related application.美國，申請中。李炳坤、顏家鈺、郭開誠、賴益志、吳政儒。台灣大學／中鋼。
5. Multi-Function PWM Inverter Applied to Analysis of Core Loss under Non-Sinusoidal Waveforms.美國，申請中。李炳坤、顏家鈺、郭開誠、賴益志、吳政儒。台灣大學／中鋼。
6. 具備聚焦功能的軌道型太陽能追蹤系統。美國，申請中。顏家鈺、陳炫綜、葉沛盈、林念真。台灣大學。
7. 陣列式高效率聚焦型太陽能追蹤系統。美國，申請中。顏家鈺、陳炫綜、林念真、汪彥瀚。台灣大學。
8. 健康監控裝置及人體電訊號處理方法。中華民國，申請中。顏家鈺、顏凡哲、曾慶恩、黃俊儒。
9. 高速大角度光學掃描機構。中華民國，申請中。顏家鈺、葉雅琴、郭志暉、李志法。中

科院。

得獎紀錄 (Honors) :

1. ASME Fellow, (2009 ~)
2. IFAC Technical Committee 4.2 - Mechatronics Committee Member, (2006 ~)
3. Editorial Board - Open Journal of Mechanical Engineering, (2007 ~)
4. Outstanding Paper Award, International Automatic Control Conference 2009, Chinese Automatic Control Society (2009/11)
5. Washington Accord Monitoring Review Team - Engineers Australia, (2009/8)
6. 國立臺灣大學特聘教授, (2007 ~ 2009)。
7. 台北捷運內湖線初勘委員, (2009/5/7)。
8. 高雄市捷運橘線履勘委員, (2008/9/8~9)。
9. 國科會傑出研究獎, (2004 ~ 2006)。
10. 生物醫學工程科技研討會, 學生壁報競賽特優獎, (2008)。
11. 礦冶論文獎, 中國礦冶工程學會, (2008)。
12. 台北木柵貓空纜車履勘委員, (2007/6/14)。
13. 交通部台灣高速鐵路履勘委員, (2006/8)。

研究計畫 (Research Projects) :

1. 自動化學門研究發展及推動小組規劃計畫(98-2217-E-002-010-MY3), 國科會。2009/12/01 ~ 2012/12/31
2. 奈米定位平面運動平台之研製(1/3)(98-2622-E-002-029-CC2), 國科會。2009/12/01 ~ 2010/11/30
3. 具自動對焦功能之次世代生物相容人工眼(2/3)(98-2218-E-002-013-), 國科會。2009/11/01 ~ 2010/10/31
4. 以波帶片陣列為基礎之極紫外光直寫微影系統之研發—子計畫三:直寫式極紫外光微影系統快門製作與系統整合(98-2221-E-002-165-MY3), 國科會。2009/08/01 ~ 2012/07/31
5. 以波帶片陣列為基礎之極紫外光直寫微影系統之研發—總計畫:以波帶片陣列為基礎之極紫外光直寫微影系統之研發(98-2221-E-002-164-MY3), 國科會。2009/08/01 ~ 2012/07/31
6. 由呼吸導致週期性位移肝腫瘤之超音波熱劑量控制方法研發—總計畫:由呼吸導致週期性位移肝腫瘤之超音波熱劑量控制方法研發(98-2221-E-002-180-MY3), 國科會。2009/08/01 ~ 2012/07/31
7. 即時性可拋式軟性有機電激表面電漿子生物感測元件(3/3)(98-2218-E-002-003-), 國科會。2009/08/01 ~ 2010/07/31
8. 基於微機電系統技術之高產能多電子束平行寫入微影系統及製程技術之研發(2/2)(98-2622-E-002-003-CC1), 國科會。2009/08/01 ~ 2010/07/31
9. 紅外線變焦鏡組研製(98-2623-E-002-019-D), 國科會。2009/01/01 ~ 2009/12/31
10. 機電能源領域 2006 日、韓先進機器人技術參訪計畫(95-2217-E-002-006-), 國科會。

2006/10/01 ~ 2006/11/30

11. 台大奈米科技中心－尖端電子顯微技術與奈米分析服務計畫(1/3)(95-2120-M-002-016-)，國科會。2006/08/01 ~ 2008/07/31
12. 永續智慧人本住家(1/3)(95-2627-E-002-002-)，國科會。2006/08/01 ~ 2007/12/31
13. 多電子束平行掃描微影系統設計－子計畫四：電子束微影多自由度托架設計(95-2221-E-002-309-MY3)，國科會。2006/08/01 ~ 2009/07/31
14. 多電子束平行掃描微影系統設計－總計畫：多電子束平行掃描微影系統設計(95-2221-E-002-435-MY3)，國科會。2006/08/01 ~ 2009/11/30
15. 蛇形仿生運動機制及前瞻載具驅動系統之研究－總計畫：蛇形仿生運動機制及前瞻載具驅動系統之研究(95-2221-E-002-301-MY3)，國科會。2006/08/01 ~ 2009/10/31
16. 蛇形仿生運動機制於前瞻載具驅動系統之研究－子計畫一：蛇行運動體之動態分析與人工肌肉致動器研發(95-2221-E-002-302-MY3)，國科會。2006/08/01 ~ 2009/07/31

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教授

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臺灣大學，機械工程學士，1982

B.S. in Mechanical Engineering,
National Taiwan University, 1982

美國加州大學柏克萊分校，機械工程碩士，1986

M.S. in Mechanical Engineering,
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美國加州大學柏克萊分校，機械系博士，1988

Ph.D. in Mechanical Engineering,
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研究專長 (Specialty) :

線性時變系統控制、雙線性系統控制、適應控制、滑動模態控制、強韌觀測器設計

Linear Time Varying System Control, Bilinear System Control, Adaptive Control, Sliding Mode Control, Robust Observer Design

期刊論文 (Journal Papers) :

1. M. L. Tseng, and M. S. Chen, 2010, "Chattering reduction of sliding mode control by low-pass filtering the control signal," Asian Journal of Control, vol. 12, no. 3, pp. 392-398.
2. M. S. Chen, and C. C. Chen, 2010, "Unknown input observer for linear non-minimum phase systems," Journal of the Franklin Institute, vol. 347, issue 2, pp. 577-588.
3. C. H. Chung, and M. S. Chen, 2010, "A new stabilizing control for a class of nonlinear systems," Journal of the Chinese Society of Mechanical Engineers, vol. 31, no. 4, pp. 341-346.
4. C. H. Chung, and M. S. Chen, 2010, "An adaptive disturbance/state observer for linear systems subject to periodic disturbances," Journal of the Chinese Society of Mechanical Engineers, vol. 31, no. 1, pp. 13-20.
5. Y. L. Yeh, and M. S. Chen, 2010, "Frequency domain analysis of noise-induced control chattering in sliding mode control", International Journal of Robust and Nonlinear Control, accepted.
6. M. S. Chen, Jyun-Sian Li, Po-Ching Wu, "A matrix gradient algorithm for identification of parameterized time-varying parameters", Asian Journal of Control, vol. 11, no.1, pp. 59-65, 2009
7. M. S. Chen, and Chi-Che Chen, "Output feedback control of bilinear systems via abilinear LTR observer," IEEE Trans. Automatic Control, vol. 53, no. 2, pp. 617-621, 2008.

8. M. S. Chen, Chi-Che Chen, 2007, "Robust Nonlinear Observer for Lipschitz Nonlinear Systems Subject to Disturbances," IEEE Trans. Automatic Control, vol. 52, no. 12, pp. 2365-2369, 2007. (SCI)
9. M. S. Chen, C. H. Chen, F. Y. Yang, June 2007, "An LTR-Observer-Based Dynamic Sliding Mode Control for Chattering Reduction," Automatica, vol. 43, no. 6, pp. 1111-1116. (SCI)

國際會議論文 (International Conference Papers) :

1. Chih-Shien Chung, Min-Shin Chen, "A new adaptive approach to the repetitive control design", the CACS International Automatic Control Conference, 12, 2008
2. Min-Lian Tseng, Min-Shin Chen, "A new on-line interpolation scheme based on a controlled D/A converter", the CACS International Automatic Control Conference, 12, 2008
3. C. C. Chen, and M. S. Chen, 2007, "Control Chattering Reduction Via Dynamic Sliding Mode Control," Proceedings of the CACS International Automatic Control Conference, Taichung, Taiwan, pp. 13-16.

得獎紀錄 (Honors) :

1. 2009 台大校園教學傑出獎
2. 2007 台大工學院教學優良獎
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研究計畫 (Research Projects) :

1. 新型的未知輸入觀測器設計，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。
2. 雙線性系統的觀測器及控制器設計(I)，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。
3. 非線性狀態估測器的設計，主持人，計畫期間：06/08/01~07/08/31，委任單位：中國鋼鐵股份有限公司。
4. 利用 LTR 觀測器的動態滑動控制，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

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臺灣大學, 機械工程學士, 1990	B.S. in Mechanical Engineering, National Taiwan University, 1990
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研究專長 (Specialty) :

自動控制、強韌控制、燃料電池系統控制、慣質研究、系統減震、懸吊控制、生醫工程、機電系統

Automatic Control, Robust Control, Fuel Cell System Control, Inerter Research, System Vibration Control, Suspension Control, Biomedical Engineering, Mechatronic Systems

期刊論文 (Journal Papers) :

1. Fu-Cheng Wang^{*}, Min-Feng Hong, and Tz-Chien Lin, 2011, January, *Design and Test of a Hydraulic Inerter*, **Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science**, Vol.225, no.1, pp.66-72. (SCI, I.F.=0.416, ranked 81/105 in Engineering, Mechanical)
2. Fu-Cheng Wang^{*} and Chin-Chun Ko, 2010, October, *Multivariable Robust PID Control for a PEMFC System*, **International Journal of Hydrogen Energy**, Vol. 35, no.19, pp. 10437-10445. (SCI, I.F.=3.945, ranked 11/180 in Environmental Sciences)
3. Fu-Cheng Wang^{*}, Liu-Hus Lin, and Ming-Cheng Chou, 2010, September, *Multivariable Robust Control for a 500W Self-Humidified PEMFC System*, accepted, to appear in **European Journal of Control**, (SCI, I.F.=0.703, ranked 39/59 in Automation & Control Systems)
4. Fu-Cheng Wang^{*}, Min-Feng Hong, and Cheng-Wei Chen, 2010, August, *Building Suspensions with Inerters*, **Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science**, Vol.224, no.8, pp.1605-1616. (SCI, I.F.=0.416,

ranked 81/105 in Engineering, Mechanical)

5. Fu-Cheng Wang^{*}, Min-Feng Hong, and Jia-Yush Yen, 2010, June, *Robust Control Design for Vibration Isolation of an Electron Beam Projection Lithography System*, **Japanese Journal of Applied Physics**, Vol. 49, no. 6, 06GE04-1-7. (SCI, I.F.=1.138, ranked 57/105 in Physics, Applied)
6. Fu-Cheng Wang^{*} and Min-Kai Liao, 2010, May, *The Lateral Stability of Train Suspension Systems Employing Inerters*, **Vehicle System Dynamics**, Vol.48, no.5, pp.619–643. (SCI, I.F.=0.659, ranked 61/105 in Engineering, Mechanical)
7. Fu-Cheng Wang^{*} and Hsiang-An Chan, 2010, March, *Vehicle Suspensions with a Mechatronic Network Strut*, accepted, to appear in **Vehicle System Dynamics**. (SCI, I.F.=0.659, ranked 61/105 in Engineering, Mechanical)
8. Fu-Cheng Wang^{*}, Chun-Wen Tang, and Bin-Juine Huang, 2010, February, *Multivariable Robust Control for a Red-Green-Blue Light-emitting Diode Lighting System*, **IEEE Transactions on Power Electronics**, Vol.25, no. 2, pp.417-428. (SCI, I.F.=2.929, ranked 15/245 in Engineering, Electrical & Electronics)
9. Jeff T. H. Tsai^{*}, Chih-Ming Ho, Fu-Cheng Wang, and Chi-Te Liang, 2009, December, *High contrast light valve driven by electrocapillary of liquid gallium*, **Applied Physics Letters**, 95, 251110. (SCI, I.F.=3.554, ranked 14/105 in Physics, Applied)
10. Fu-Cheng Wang^{*}, Min-Kai Liao, Bo-Huai Liao, Wei-Jiun Su and Hsiang-An Chan, 2009, July, *The performance improvements of train suspension systems with mechanical networks employing inerters*, **Vehicle System Dynamics**, Vol.47, no.7, pp.805–830. (SCI, I.F.=0.659, ranked 61/105 in Engineering, Mechanical)
11. Fu-Cheng Wang^{*}, Yu-Chia Tsao and Jia-Yush Yen, 2009, June, *The Application of Disturbance Response Decoupling to the Vibration Control of an Electron Beam Lithography System*, **Japanese Journal of Applied Physics**, Vol. 48, no. 6, 06FB04-1-5. (SCI, I.F.=1.138, ranked 57/105 in Physics, Applied)
12. Fu-Cheng Wang^{*}, Chung-Huang Yu and Tai-Yu Chou, 2009, June, *Design and Implementation of Robust Controllers for a Gait Trainer*, **Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine**, Vol. 223, no. 6, pp. 687-696. (SCI, I.F.=0.951, ranked 46/59 in Engineering, Biomedical)
13. Fu-Cheng Wang^{*} and Hsuan-Tsung Chen, 2009, March, *Design and implementation of fixed-order robust controllers for a proton exchange membrane fuel cell system*, **International Journal of Hydrogen Energy**, Vol. 34, no.6, pp. 2705–2717. (SCI, I.F.=3.945, ranked 11/180 in Environmental Sciences)
14. Michael Z. Q. Chen^{*}, Christos Papageorgiou, Frank Scheibe, Fu-Cheng Wang and Malcolm

- C. Smith, 2009, March, *The missing mechanical circuit element*, **IEEE Circuits and Systems Magazine**, Vol.9, no.1, pp.10-26. (SCI, I.F.=1.148, ranked 106/245 in Engineering, Electrical & Electronic)
15. Fu-Cheng Wang^{*}, Hsiao-Wu Wang, Hon-Ming Lin, Pei-Kang Chen and Kuang-Chao Fan, 2008, December, *Sense and Control of a Companion Robot*, **Journal of the Chinese Society of Mechanical Engineers, Transactions of the Chinese Institute of Engineers, Series C**, Vol.29, no.6, pp.483-489. (SCI, I.F.=0.548, rank 69/115 in Engineering, Mechanical)
 16. Fu-Cheng Wang^{*} and Wei-Jiun Su, 2008, July, *The Impact of Inerter Nonlinearities on Vehicle Suspension Control*, **Vehicle System Dynamics**, Vol.46, no.7, pp.575-595. (SCI, I.F.=0.659, ranked 61/105 in Engineering, Mechanical)
 17. Fu-Cheng Wang^{*}, Hong-Min Lin, Pei-Kang Chen, Fu-Yui Chang and Kuang-Chao Fan, 2008, May, *Signal Detection and Control of an Intelligent Robot*, **Key Engineering Materials**, Vol. 381-382, pp. 387-390. (SCI (2005), I.F.=0.224, ranked 19/28 in Materials Science, Ceramics)
 18. Yee-Pien Yang^{*}, Zhao-Wei Liu and Fu-Cheng Wang, 2008, May, *An Application of Indirect Model Reference Adaptive Control to a Low-power Proton Exchange Membrane Fuel Cell*, **Journal of Power Sources**, Vol.179, no.2, pp.618-630. (SCI, I.F.=3.792, ranked 7/70 in Energy & Fuels)
 19. Fu-Cheng Wang^{*}, Hsuan-Tsung Chen, Yee-Pien Yang and Jia-Yush Yen, 2008, March, *Multivariable Robust Control of a Proton Exchange Membrane Fuel Cell System*, **Journal of Power Sources**, Vol.177, no.2, pp.393-403. (SCI, I.F.=3.792, ranked 7/70 in Energy & Fuels)
 20. Fu-Cheng Wang^{*}, Yee-Pien Yang, Chi-Wei Huang, Hsin-Ping Chang and Hsuan-Tsung Chen, 2007, February, *System Identification and Robust Control of a Portable Proton Exchange Membrane Fuel-Cell System*, **Journal of Power Sources**, Vol.164, no.2, pp.704-712. (SCI, I.F.=3.792, ranked 7/70 in Energy & Fuels)
 21. Yee-Pien Yang^{*}, Fu-Cheng Wang, Hsin-Ping Chang, Ying-Wei Ma and Biing-Jyh Weng, 2007, February. *Low Power Proton Exchange Membrane Fuel Cell System Identification and Adaptive Control*, **Journal of Power Sources**, Vol.164, no.2, pp.761-771. (SCI, I.F.=3.792, ranked 7/70 in Energy & Fuels)
 22. Jui-Jung Liu^{*}, Ya-Wei Lee, Fu-Cheng Wang, Ramesh Uppala, and Ping-Hei Chen, 2006, July. *Time and frequency domain identification and analysis of a Permanent Magnet Synchronous Servo Motor*, **Journal of the Chinese Institute of Engineers**, Vol.29, no.4, pp.683-695. (SCI, I.F.=0.548, rank 69/115 in Engineering, Mechanical)

國際會議論文 (International Conference Papers) :

1. Fu-Cheng Wang^{*} and Chin-Chun Ko, 2010, September, *Robust PID Control of a PEMFC System*, Proceedings of the 2010 IEEE Multi-conference on Systems and Control, pp. 179-184, September 8-10, 2010, Yokohama, Japan. **(EI, INSPEC, IEEE Xplore)**
2. Chung-Huang Yu, Tai-Yu Chou and Fu-Cheng Wang^{*}, 2010, September, *Multivariable Robust Control of a Gait Trainer*, Proceedings of the 2010 IEEE Multi-conference on Systems and Control, pp. 2256-2261, September 8-10, 2010, Yokohama, Japan. **(EI, INSPEC, IEEE Xplore)**
3. Fu-Cheng Wang^{*} and Min-Ruei Hsieh, 2010, August, *Stability and Performance Analysis of a Full Train Model with Inerters*, Proceedings of the 5th Asian Conference on Multibody Dynamics, pp. 1-8, August 23-26, 2010, Kyoto, Japan.
4. Chun-Wen Tang, Fu-Cheng Wang^{*}, and Bin-Juine Huang, 2010, August, *Design and Control of a RGB LED System*, SICE Annual Conference 2010, pp. 2555-2558, August 18-21, 2010, The Grand Hotel, Taipei, Taiwan. **(EI, IEEE Xplore)**
5. Chung-Huang Yu, Fu-Cheng Wang^{*} and Yu-Ju Lu, 2010, August, *Robust Control of a Furuta Pendulum*, SICE Annual Conference 2010, pp. 2559-2563, August 18-21, 2010, The Grand Hotel, Taipei, Taiwan. **(EI, IEEE Xplore)**
6. Fu-Cheng Wang^{*}, and Hsiang-An Chan, 2010, July, *Network Optimization and Synthesis using a Combined Mechanical and Electrical System: Application to Vehicle Suspension Control*, Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2010), pp. 587-592, July 5-9, 2010, Budapest, Hungary.
7. Fu-Cheng Wang^{*}, Chun-Wen Tang, and Bin-Juine Huang, 2010, April, *Robust Control design and implementation for a LED Lighting System*, Proceedings of the 7th International Conference on Optics-photonics Design & Fabrication (ODF'10), 21S4-11, Yokohama, Japan.
8. Fu-Cheng Wang^{*}, Hsiang-An Chan, Jason Zheng Jiang and Malcolm C. Smith, 2009, December, *Optimization and Synthesis for a Mechatronic Network*, Proceedings of the 3rd International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS 2009), pp 386-390, Fukuoka, Japan.
9. Fu-Cheng Wang^{*}, Min-Feng Hong and Jia-Yush Yen, 2009, November, *Vibration isolation of a full electron beam projection lithography system*, Proceedings of the 22nd International Microprocesses and Nanotechnology Conference (MNC 2009), pp 172-173, Sapporo, Japan.
10. Liu-Hus Lin, Fu-Cheng Wang^{*} and Jia-Yush Yen, 2009, August, *Robust PID Controller Design Using Particle Swarm Optimization*, Proceedings of the 7th Asian Control Conference (ASCC09), pp. 1673-1678, Hong Kong, China, August 27-29, 2009. **(EI, IEEE Xplore)**

11. Fu-Cheng Wang^{*}, Hsuan-Tsung Chen, Ming-Cheng Chou and Jia-Yush Yen, 2009, August, *Multivariable Fixed-Order Robust Control for a PEMFC System*, Proceedings of the European Control Conference (ECC 2009), pp. 4187-4192, Budapest, Hungary, August 23-26, 2009.
12. Fu-Cheng Wang^{*} and Min-Ruei Hsieh, 2009, August, *The use of inerters improves the stability and performance of a full-train model*, Proceedings of the 21th International Symposium: Dynamics of Vehicles on Roads and Tracks (IAVSD 2009), P183, pp. 1-12, Stockholm, Sweden, August 16-21, 2009.
13. Fu-Cheng Wang, Chung-Huang Yu^{*}, Tai-Yu Chou and Nai-Chung Chang, 2009, July, *Design and Control of an Active Gait Trainer*, Proceedings of the IEEE International Symposium on Industrial Electronics (IEEE ISIE 2009), pp. 1779-1784, Seoul, Korea, July 5-8, 2009. **(EI, IEEE Xplore)**
14. Fu-Cheng Wang^{*} and Hsiang-An Chan, 2008, December, *Mechatronic Suspension Design and Its Applications to Vehicle Suspension Control*, Proceedings of the 47th IEEE Conference on Decision and Control, pp. 3769-3774, Cancun, Mexico. **(EI, IEEE Xplore)**
15. Fu-Cheng Wang^{*}, Yo-Chia Tsao and Jia-Yush Yen, 2008, October, *Vibration control of an electron beam projection lithography system employing disturbance response decoupling techniques*, Proceedings of the 21st International Microprocesses and Nanotechnology Conference (MNC 2008), pp 152-153, Fukuoka, Japan.
16. Fu-Cheng Wang^{*}, Hsiao-Wu Wang, Hon-Ming Lin, Pei-Kang Chen and Kuang-Chao Fan, *Sense and Control of a Companion Robot*, Proceedings of the International Symposium on Precision Mechanical Measurements (ISPM) 2008, Hefei, China. **(EI)**
17. Fu-Cheng Wang^{*}, Hsuan-Tsung Chen and Jia-Yush Yen, 2008, July, *Multivariable LQG Control of a Proton Exchange Membrane Fuel Cell System*, Proceedings of the 17th IFAC World Congress, pp. 10095-11000, Seoul, Korea. **(IFAC-PapersOnline.net)**
18. Fu-Cheng Wang^{*}, Wei-Jiun Su, 2008, June, *Inerter Nonlinearities and the Impact on Suspension Control*, Proceedings of the 2008 American Control Conference, pp. 3245-3250, Seattle, Washington, USA. **(EI)**
19. Yee-Pien Yang^{*}, Zhao-Wei Liu and Fu-Cheng Wang, 2008, June, *Multivariable Adaptive Control of a Low Power Proton Exchange Membrane Fuel Cell*, the Sixth ASME International Conference on Fuel Cell Science, Engineering and Technology, USA, 2008. **(EI)**
20. Fu-Cheng Wang^{*}, Ming-Cheng Chou and Yi-Ling Lin, 2008, March, *Optimal Tracks of the Hand-Raising and Gait*, Proceedings of DHMS 2008 (the 2008 IEEE SMC International Conference on Distributed Human-Machine Systems), pp. 485-490, Athens, Greece. **(IEEE Xplore)**
21. Fu-Cheng Wang^{*} and Cheng-Wei Chen, 2007, December, *Performance Analyses of Building*

Suspension Control with Inerters, Proceedings of the 46th IEEE Conference on Decision and Control, pp. 3786-3791, New Orleans, LA. USA. **(EI, IEEE Xplore)**

22. Fu-Cheng Wang^{*}, Hsuan-Tsung Chen, Yee-Pien Yang and Hsin-Ping Chang, 2007, December, *Multivariable Robust Control of a Proton Exchange Membrane Fuel Cell System*, Proceedings of the 46th IEEE Conference on Decision and Control, pp. 6118-6123, New Orleans, LA. USA. **(EI, IEEE Xplore)**
23. Yee-Pien Yang^{*}, Zhao-Wei Liu and Fu-Cheng Wang, 2007, December, *Model Reference Adaptive Control of a Low Power Proton Exchange Membrane Fuel Cell*, Proceedings of the 46th IEEE Conference on Decision and Control, pp. 1314-1319, New Orleans, LA. USA. **(EI, IEEE Xplore)**
24. Fu-Cheng Wang^{*}, Hon-Min. Lin, Pei-Kang. Chen, Fu-Yui Chang and Kuang-Chao. Fan, 2007, September, *Signal Detection and Control of an Intelligent Robot*, Proceedings of the 8th International Symposium on Measurement Technology and Intelligent Instruments (ISMTII 2007), pp. 139-142.
25. Fu-Cheng Wang^{*} and Wei-Jiun Su, 2007, August, *The Impact of Inerter Nonlinearities on Vehicle Suspension Control*, Proceedings of the 20th International Symposium: Dynamics of Vehicles on Roads and Tracks (IAVSD 2007), pp. 151-152 (Abstract), USA.
26. Fu-Cheng Wang^{*}, Yee-Pien Yang, e.t.c., 2007, July, *Robust Control Design of a Proton Exchange Membrane Fuel-Cell System*, Proceedings of the European Control Conference 2007, pp. 978-983, Kos, Greece.
27. I-Chun Kuo, Yi-Ru Lee, Fu-Cheng Wang, Nai-Chung Chang and Chang-Fu Wu, 2007, June, *Laboratory and Field Evaluation for a Portable, Real-Time Ozone Monito*, A&WMA's 100th Annual Conference & Exhibition, Pittsburgh, USA.
28. Fu-Cheng Wang^{*}, Hsuan-Tsung Chen, Yee-Pien Yang and Hsin-Ping Chang, 2007, June, *Multivariable Robust Control of a Proton Exchange Membrane Fuel Cell System*, Proceedings of the 5th International Conference on Fuel Cell Science, Engineering and Technology, pp. 160 (Abstract), New York, USA.
29. Fu-Cheng Wang^{*}, Chung-Huang Yu, Yi-Ling Lin and Chen-En Tsai, 2007, May, *Optimization of the Sit-to-Stand Motion*, Proceedings of the 2007 IEEE/ICME International Conference on Complex Medical Engineering, pp. 1264-1269, Beijing, China. **(EI)**
30. Fu-Cheng Wang^{*}, Chung-Huang Yu, Mong-Lon Chang and Mowson Hsu, 2006, December, *The Performance Improvements of Train Suspension Systems with Inerters*, Proceedings of the 45th IEEE Conference on Decision and Control, pp. 1472-1477, San Diego, CA, USA. **(EI, IEEE Xplore)**
31. Fu-Cheng Wang^{*}, Yee-Pien Yang, e.t.c., 2006, June, *Proton Exchange Membrane Fuel Cell*

System Identification and Control: Part II: H-infinity based Robust Control, Proceedings of the Fourth International Conference on Fuel Cell Science, Engineering and Technology, Irvine, California, USA. (EI)

32. Yee-Pien Yang*, Fu-Cheng Wang, e.t.c., 2006, June, *Proton Exchange Membrane Fuel Cell System Identification and Control: Part I: System Dynamics, Modeling and Identification*, Proceedings of the Fourth International Conference on Fuel Cell Science, Engineering and Technology, Irvine, California, USA. (EI)

國內會議論文 (Domestic Conference Papers) :

1. Fu-Cheng Wang*, Ming-Cheng Chou and Chih-Chun Ko, *Multivariable Robust Control for a PEMFC System*, Proceedings of 2009 CACS International Automatic Control Conference, National Taipei University of Technology, Taipei, Taiwan, Nov. 27-29, 2009.
2. Fu-Cheng Wang*, Min-Feng Hong and Chin-Hui Hsieh, *Robust controller design for an electron beam projection lithography system*, Proceedings of 2009 CACS International Automatic Control Conference, National Taipei University of Technology, Taipei, Taiwan, Nov. 27-29, 2009.
3. Fu-Cheng Wang*, Yu-Chia Tsao and Jia-Yush Yen, *Vibration control of an electron beam projection lithography system employing disturbance response decoupling techniques*, Proceedings of 2008 CACS International Automatic Control Conference, National Cheng Kung University, Tainan, Taiwan, Nov. 21-23, 2008.
4. Fu-Cheng Wang*, Yu-Chia Tsao and Jia-Yush Yen, *Vibration Control of EPL System by Disturbance Response Decoupling*, Proceedings of 2007 CACS International Automatic Control Conference, National Chung Hsing University, Taichung, Taiwan, Nov. 9-11, 2007.

專利 (Patents) :

1. 王富正，林子謙。“液壓式慣質機構”，中華民國專利，發明第I321619 (11/March/2010~25/Oct/2027)。
2. 王富正，徐茂盛，蘇偉儒，林子謙。“螺桿式慣質機構”，中華民國專利，發明第I321620 (11/March/2010~25/Oct/2027)。
3. HYDRAULIC INERTER MECHANISM. 美國專利申請中。(USPC Class: 60469)
4. SCREW TYPE INERTER MECHANISM. 美國專利申請中。(USPC Class: 267 75)
5. 燃料電池控制系統及其控制方法 (FUEL CELL CONTROL SYSTEM AND CONTROL METHOD THEREOF)。中華民國、美國專利申請中。(學校案號: 96工465) (USPC Class: 429 13)
6. 電子式針灸銅人裝置(Electrical bronze acupuncture statue apparatus)。中華民國、美國專利

申請中。(學校案號: 97工767)

7. 機電懸吊系統及其避震方法(Mechatronic suspension system and method for shock absorbing thereof)。中華民國、美國專利申請中。(學校案號: 97工791)
8. 一種具有強韌控制的三色光發光二極體照明系統 (Poly-chromatic Light-Emitting Diode (LED) Lighting System)。中華民國、美國專利申請中。(學校案號: 06A-090810)
9. 步態訓練裝置 (Gait Training Device)。中華民國、美國專利申請中。(學校案號: 60A-090520)
10. 一種具有液態金屬之電控光閥裝置。中華民國專利申請案號：099104267，美國專利申請中。(學校案號: 06A-090811)
11. 一種雙層平台減震裝置及其減震的方法 (Vibration control of an optical table by disturbance response decoupling)。中華民國專利申請案號 098141535，美國專利申請中。

專書 (Books) :

1. Fu-Cheng Wang^{*}, Hsiang-An Chan, Jason Zheng Jiang and Malcolm C. Smith, 2009, *Optimization and Synthesis for a Mechatronic Network*, in “*The Joint Conference of ASCM 2009 and MACIS 2009*”, M. Suzuki, H. Hong, H. Anai, C. Tap, Y. Sato and H. Yoshida, Eds. **COE Lecture Note Vol.22, Faculty of Mathematics, Kyushu University, Japan.** (ISSN: 1881-4042)
2. Fu-Cheng Wang^{*}, Hon-Min. Lin, Pei-Kang. Chen, Fu-Yui Chang and Kuang-Chao Fan, 2008, *Signal Detection and Control of an Intelligent Robot*, in “*Measurement Technology and Intelligent Instruments VIII*”, W. Gao, Y. Takaya, Y. Gao and M. Krystek, Eds. Trans **Tech Publications, Switzerland** (ISBN 0-87849-382-4, ISBN-13 978-0-87849-382-1).
3. Fu-Cheng Wang^{*}, Ming-Cheng Chou and Yi-Ling Lin, 2008, *Optimal Tracks of the Hand-Raising and Gait*, in “*Distributed Human-Machine Systems*”, V. Marik, J.M. Bradshaw, J. Meyer, W.A. Gruver and P. Benda, Eds. **Czech Technical University, Prague** (ISBN 978-80-01-04027-0).

得獎紀錄 (Honors) :

1. ARTC 財團法人車輛研究測試中心:第三屆車輛工程研究論文獎, OCT/2007

研究計畫 (Research Projects) :

1. 王富正^{*}, 洪敏峰, 2009, Oct., Vibration Control of the E-beam based Massively Parallel Maskless Lithography Systems, 多電子束平行掃瞄微影系統設計-子計畫五:多電子束平行掃瞄微影系統之減振控制。行政院國家科學委員會專題研究計畫研究成果報告(完整

版)。計畫編號：NSC 95-2221-E-002-310-MY3。

2. 創新手輪馬達電動輪椅混合動力系統整合研究與開發-子計畫二：創新手輪馬達電動輪椅之質子交換膜燃料電池模組的系統識別、控制與系統整合，主持人，計畫期間：10/08/01~11/07/31，委任單位：國科會。

System Identification, Control and Integration of the Proton Exchange Membrane Fuel Cell Module for a Hybrid Electric Powered Wheelchair with Innovative Rim Motors

3. 創新手輪馬達電動輪椅混合動力系統整合研究與開發-子計畫二：創新手輪馬達電動輪椅之質子交換膜燃料電池模組的系統識別、控制與系統整合，主持人，計畫期間：09/08/01~10/07/31，委任單位：國科會。

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4. 創新手輪馬達電動輪椅混合動力系統整合研究與開發-子計畫二：創新手輪馬達電動輪椅之質子交換膜燃料電池模組的系統識別、控制與系統整合，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。

System Identification, Control and Integration of the Proton Exchange Membrane Fuel Cell Module for a Hybrid Electric Powered Wheelchair with Innovative Rim Motors

5. 多電子束平行掃描微影系統設計-子計畫五：多電子束平行掃描微影系統之減振控制，主持人，計畫期間：08/08/01~09/07/31，委任單位：國科會。

Vibration Control of the E-Beam Based Massively Parallel Maskless Lithography Systems

6. 多電子束平行掃描微影系統設計-子計畫五：多電子束平行掃描微影系統之減振控制，主持人，計畫期間：07/08/01~08/07/31，委任單位：國科會。

Vibration Control of the E-Beam Based Massively Parallel Maskless Lithography Systems

7. 多電子束平行掃描微影系統設計-子計畫五：多電子束平行掃描微影系統之減振控制，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。

Vibration Control of the E-Beam Based Massively Parallel Maskless Lithography Systems

8. 先進安全智慧車--多模車機整合技術暨先進安全駕駛輔助系統-子計畫三：慣質之研究及汽車懸吊系統之控制應用 (3/3)，主持人，計畫期間：06/08/01~07/07/31，委任單位：國科會。

Inerter and Its Application to Vehicle Suspension Control

9. 仿人皮膚感觸及智慧化系統計畫，共同主持人，計畫期間：05/12/01~07/11/30，委任單位：工業技術研究院。

Artificial Skin and Intelligent System

10. 先進安全智慧車--多模車機整合技術暨先進安全駕駛輔助系統-子計畫三：慣質之研究及汽車懸吊系統之控制應用 (2/3)，主持人，計畫期間：05/08/01~06/07/31，委任單位：國科會。

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研究專長 (Specialty) :

高階醫療器材、心導管與血管支架、生醫工程、醫療器材與人體反應、複合材料

Advanced Medical Device, Catheter and Stent Technology, Biomedical Engineering, Device-Human Interaction, Composite Materials

期刊論文 (Journal Papers) :

1. Hao-Ming Hsiao, Alexander Nikanorov, Santosh Prabhu and Mahmood K. Razavi, "Respiration-induced Kidney Motion on Cobalt-Chromium Stent Fatigue Resistance", Journal of Biomedical Materials Research: Part B - Applied Biomaterials, Vol. 91B , No. 2 , pp. 508-516 , 2009.
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2. Hao-Ming Hsiao, Ying-Chih Liao, Kuang-Huei Lee, and Chueh-Yu Wu, “Computational Fluid Dynamics Simulation on Biomedical Stent Design,” 13th Asia Pacific Confederation of Chemical Engineering Congress, Taipei, Taiwan, October 5-8, 2010.
3. Jun-Yu Hu, Hao-Ming Hsiao, and Ying-Chih Liao, “Sensor Manufacture via Drop-on-demand Method,” 13th Asia Pacific Confederation of Chemical Engineering Congress, Taipei, Taiwan, October 5-8, 2010.
4. Jeou-Long Lee, Chih-Wei Wu, Hao-Ming Hsiao, Yung-Kang Shen, Chuan-Min Huang, and Wei-Ren Chen, “The Nanostructure Effect on Optical Properties and Osteoblast-like Cell Culture by Nanoporous Alumina Template,” 3rd International Forum on Systems and Mechatronics, Singapore, September 8, 2010.
5. Ping-Lang Yen, Hao-Ming Hsiao, and Shuo-Suei Hung, “Design of the Surgical Robots for Orthopaedics Applications,” 2010 International Conference on System Science and Engineering, Taipei, Taiwan, July 1-3, 2010, pp. 559-564.
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1. 蕭浩明、李冠輝、廖英志、張所銘, “血管支架結構對血管壁面剪應力分佈之影響”, 中國機械工程學會第二十七屆全國學術研討會, 國立台北科技大學, 台北市, 中華民國九十九年十二月十日、十一日, pp. E649-E654。
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3. Hao-Ming Hsiao, Kuang-Huei Lee, Ying-Chih Liao, and Shuo Hung Chang, “Hemodynamic Simulation on Intravascular Stent Design,” 34th National Conference on Theoretical and Applied Mechanics, Yun-Lin, Taiwan, November 19-20, 2010.
4. 洪英瀚、蕭浩明、廖英志，“模擬以化學還原法生成銀薄膜之噴墨系統及其製程參數評估”，第 34 屆全國力學會議，國立雲林科技大學，台灣省雲林縣，中華民國九十九年十一月十九日。
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8. Hao-Ming Hsiao, Zhicheng Lin, Ying-Chih Liao, and Yung-Kang Shen, “Effects of Drawing on Micron-sized Tubes for Making Endovascular Stents,” 2010 Conference on Society of Manufacturing Engineers, Taipei, Taiwan, November 6, 2010.
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Hao-Ming Hsiao, Michael D. Dake, Santosh Prabhu, Mahmood K. Razavi, Ying-Chih Liao, and Alexander Nikanorov, “Chapter 19: Life Assessment of a Balloon-expandable Stent for Atherosclerotic Renal Artery Stenosis,” *Biomedical Engineering, Trends in Materials Science*, edited by Anthony N. Laskovski, ISBN 978-953-307-513-6, pp. 447-464, January 2011, InTech.

專利 (Patents) :

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得獎紀錄 (Honors) :

1. Session’s Best Paper Award, 3rd International Forum on System and Mechatronics, September 8, 2010, Singapore.
2. 2008 美國亞培製藥公司(Abbott Laboratories)心血管部門(Abbott Vascular) “We Create the Future” Campaign Award 決選.

研究計畫 (Research Projects) :

1. 台美國合計畫—血管支架作為標靶治療的可行性研究(2/2)，主持人，計畫期間：99/11/01~100/10/31，委任單位，行政院國家科學委員會。(99-2218-E-002-018-)
2. 台美國合計畫—血管支架作為標靶治療的可行性研究(1/2)，主持人，計畫期間：98/11/01~99/10/31，委任單位，行政院國家科學委員會。(98-2218-E-002-043-)
3. 心腦血管支架最佳化設計，主持人，計畫期間：99/08/01~100/07/31，台灣大學前瞻性研究計畫。
4. 人體血管運動對血管支架壽命的影響，主持人，計畫期間：99/01/01~99/12/31，委任單位，財團法人宗倬章先生教育基金會。(99-SA07)
5. Bioabsorbable Stent Vehicle for Target Drug Delivery，主持人，計畫期間：99/01/01~99/12/31，台大與工研院合設奈米科技研究中心種子計畫。

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Biomimetic Robotics, Mechatronics, Sensor Applications and Signal Processing, Machine Design, Active Surface-property Tunable Polymer

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6. S. Y. Shen, C. H. Li, C. C. Cheng, J. C. Lu, S. F. Wang, and P. C. Lin*, "Design of a Leg-Wheel Hybrid Mobile Platform", in IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS), Oct. 2009, St. Louis, USA, pp4682-4687
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12. P. Lin, S. Yang, "Spontaneous Formation of Self-organized Structures: from 1D Ripples Transiting to 2D Herringbones Via Sequential and Unequal 2D Strain Induction," in 2007 MRS Spring Meeting.

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1. 林沛群, 鄭智中, "可側向傾斜之雙輪移動平台", 中華民國專利(under review; submitted on Oct. 12, 2010, application no. 99134800)
2. 陳建彰, 葉世鴻, 林沛群, 陳奕君, 凌好甄, "熱梯度連通式絕氧培養裝置", 中華民國專利 (under review; submitted on Sep. 7, 2010, application no. 99130134)
3. P. C. Lin, S. Y Shen, "A leg-wheel hybrid mobile platform", US Patent (under review; submitted on Mar. 9, 2010, application no. 12/719,869)
4. 林沛群, 沈宣諭, "輪腳複合式移動平台", 中華民國專利(under review; submitted on Oct. 29, 2009, application no. 98136678)
5. P. C. Lin, G. Lopes, J. Weingarten, "Power Transmission and Time Parameterized Coordinated Actuation of Multiple Joints Using a Single Motor and its Application in Robotic Systems", US Provisional Patent, Nov. 2007 (U.S. Application No: 60/985,807)
6. S. Yang, P. C. Lin, "Adhesives With Mechanical Tunable Adhesion", US Patent, No: 12/593,756

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1. S. C. Chen, Y. C. Lan, and P. C. Lin*, "Design and Noncircular-gear-based Gait Control of a Bio-Inspired Hexapod Robot", Paper Summary of the 18th National Conference on Automation Technology, The Chinese Institute of Automation Engineers, 2010, pp38-43 (ISSN:2079-3960)
2. J. E. Clark, D. I. Goldman, P. C. Lin, G. Lynch, T. S. Chen, H. Komsuoglu, R. J. Full, D. E. Koditschek, "Design of a Bio-inspired Dynamical Vertical Climbing Robot", in Robotics: Science and Systems III, Mar. 2008 (ISBN978-0-262-52484-1)
3. P.-C. Lin, H. Komsuoglu, D. E. Koditschek, "Legged Odometry from Body Pose in a Hexapod Robot", Springer Tracts in Advanced Robotics vol. 21: Experimental Robotics IX, 2006, 439-448 (ISBN: 978-3-540-28816-9)

研究計畫 (Research Projects) :

1. 智慧化個人輕型電動載具研發(II)，共同主持人，計畫期間：10/10/01~11/9/30，委任單位：國科會。
2. 橋樑檢測資料擷取機器人，共同主持人，計畫期間：10/8/1~11/7/31，委任單位：國科會。
3. 前瞻創新電動車底盤技術構想發展計畫，協同主持人，計畫期間：10/3/1~10/11/30，委任單位：工研院。
4. 智慧化個人輕型電動載具研發(I)，共同主持人，計畫期間：09/10/01~10/9/30，委任單位：國科會。
5. 生物與機械系統之足驅動時脈與被動彈性對系統動態運動特性之影響，主持人，計畫期間：08/8/1~09/7/31，委任單位：台灣大學。
6. 智慧化個人輕型電動載具研發，共同主持人，計畫期間：08/12/01~09/11/30，委任單位：國科會。
7. 仿生人形機器人之發展-子計畫五：智慧型全自主人形機器人雙足之設計控制與步態研發，主持人，計畫期間：08/08/01~11/07/31，委任單位：國科會。(多年期)
8. 十二軸加速規建構之進階慣性量測系統之研發，主持人，計畫期間：08/01/01~08/12/31，委任單位：宗倬章先生教育基金會。
9. 仿生自走四足機器人及其動態跑跳步態之設計製造控制整合研發，主持人，計畫期間：08/01/01~08/07/31，委任單位：國科會。

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國立台灣大學，機械工程學系，2000

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M.S. in Mechanical Engineering,
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Ph.D. in Mechanical Engineering,
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研究專長 (Specialty) :

智慧型載具、車輛動力與控制、車載資通訊系統整合與應用、非線性估測與控制、嵌入式系統; Intelligent Vehicles、Vehicle Dynamics & Control、Telematics、Nonlinear Estimation、Embedded Systems

期刊論文 (Journal Papers) :

1. K. Li, J. A. Misener, and J. K. Hedrick, "On-Board Road Condition Monitoring System Using Slip-Based Tyre-Road Friction Estimation and Wheel Speed Signal Analysis," *Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics*, Vol. 221, No. 1, pp. 129-146, 2007.
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國際會議論文 (International Conference Papers) :

1. K. Li, J. A. Misener, J. K. Hedrick, On-Board Road Condition Monitoring System Using Slip-Based Tire-Road Friction Estimation and Wheel Speed Signal Analysis, *Proceedings of the 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, USA*, Paper No. IMECE2006-14102, pp. 267-276, 2006.
2. K. Li, H.-S. Tan, J. A. Misener, and J. K. Hedrick, Digital Map as a Virtual Sensor-Dynamic Road Curve Reconstruction for a Curve Speed Assistant, *Proceedings of the 20th Symposium of the International Association for Vehicle System Dynamics*, University of California, Berkeley, California, USA, 2007.
3. K. Li, H.-S. Tan, and J. K. Hedrick, An Enhanced GPS-Based Vehicle Positioning System

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專書/技術報告 (Books/Technical Reports) :

1. K. Li, , *Development of an On-Board Road Condition Monitoring System*, M.S. Thesis, University of California at Berkeley, California, 2005.
2. K. Li, , *Sensor Fusion and Non-linear Filtering Techniques in Automotive Active Safety Systems*, Ph.D. Dissertation, University of California at Berkeley, California, 2009.
3. X. Dong, K. Li, J. A. Misener, P. Varayia, W. Zhang, *Expediting Vehicle Infrastructure Integration (EVII)*, California PATH Research Report UCB-ITS-PRR-2006-20, 2006.
4. J. A. Misener, and K. Li, *Radio Frequency ID Tags to Enhance Safety*, California PATH Research Report UCB-ITS-PRR-2009-3, 2009.
5. J. A. Misener, and K. Li, et al., *VII California: Development and Deployment: Lessons Learned*, California PATH Research Report UCB-ITS-PRR-2009-35, 2009.
6. C.-Y. Chan, K. Li, and J.-H. Lee, *Assessing Automated Speed Enforcement in California*, California PATH Research Report UCB-ITS-PRR-2010-21, 2010.
7. J. A. Misener, and K. Li, et al., *VII California: Development and Deployment Proof of Concept and Group-Enabled Mobility and Safety (GEMS)*, California PATH Research Report UCB-ITS-PRR-2010-26, 2010.

得獎紀錄 (Honors) :

1. Postdoctoral Fellowship, UC-Berkeley (2009)
2. 9th International Symposium on Advanced Vehicle Control (AVEC '08) Best Paper Finalist (2008)
3. UC-Berkeley Graduate Fellowship (2004-2008)

研究計畫 (Research Projects) :

1. 李綱(主持), 藉由傳感器與資訊融合技術達成城市峽谷中之車輛高精準度即時定位, 宗倬章先生教育基金會, 100-S-A08, 執行日期 100/01/01-100/12/31。
High-Precision Real-Time Vehicle Positioning in Urban Canyons through Sensor and Information Fusion Techniques
2. 李綱(分項一共同主持), 經濟部 100 年度科技研究發展專案計畫[前瞻駕駛道路環境偵測與智慧車控研究]分項計畫一: 立體感知技術與車輛模型分析研究, 經濟部, 編號 xxx, 執行日期 100/01/01~100/11/30。
A Study on Stereo Vision Sensing Techniques and Analysis of Vehicle Dynamics Models
3. 李綱(主持), 100 年度工研院資通所環境建構計畫-國內學研合作計畫[Mobile-enabled Cloud Service 主題]子計畫: 即時道路資訊服務, 工研院, 編號 xxx, 執行日期 100/01/01~100/12/31。
Mobile-enabled Cloud Service - Roadway Information Service