Shih-Chi Chen

Curriculum Vitae

Address: Room 307, William M.W. Mong Eng. Building
The Chinese University of Hong Kong, Shatin, N.T., Hong Kong
Phone: +(852) 3943-4136
Email: scchen@mae.cuhk.edu.hk

Principal Fields of Interest

Precision Machine Design
Biomedical Optics & Ultrafast Laser
Microsystem Design and Fabrication
Nanomanufacturing
Compliant Mechanisms

Education

Massachusetts Institute of Technology — **Cambridge, MA**
Ph.D. in Mechanical Engineering — *Sept, 2007*
Dissertation: "Design of a high-speed-force-stroke thermomechanical micro-actuator via geometric contouring and mechanical frequency multiplication"

S.M. in Mechanical Engineering — *Sept, 2003*
Thesis: "A six-degree-of -freedom compliant micro-manipulator for silicon optical bench"

National Tsing Hua University — **Hsin-Chu, Taiwan**
B.S. in Power Mechanical Engineering — *June, 1999*

Awards & Honors

Oct, 2013	Early Career Award, University Grants Committee of Hong Kong
Mar, 2007	MGH-MIT Career Development Postdoctoral Fellowship in Translational Research—Winner of $200,000 USD Research Grant with Dual Appointments at MGH and MIT
Oct, 2003	R&D 100 Award for One of 100 Best New Technical Products of the Year—HexFlex™ Nanomanipulator, shared with Mr. Gordon Anderson, and Dr. Martin Culpepper.
Sep, 2003	MIT Martin Fellowship and Martin Fellow, Martin Family Society of Fellows for Sustainability, MIT
Sep, 2001	Lee Fellowship, Department of Mechanical Engineering, MIT
1996-1999	Recipient of Academic Achievement Award (top 2% of class) from National Tsing Hua University (NTHU) for 7 times.
Feb, 1999	Outstanding Engineering Student Prize, Chinese Institute of Engineers
Feb, 1999	Dr. Cho-Chien Chien Scholarship, Chinese Society of Mechanical Engineers
Feb, 1999	Mr. Tzu-His Lin Scholarship, Ministry of Education
Feb, 1999	The Scholarship from the United World Chinese Commercial Bank Culture and Charity Foundation
Feb, 1998	Research Creativity Award, National Science Council of Taiwan
Feb, 1998	NTHU Tai Ta Electronics Scholarship
Sep, 1998	Yu Kuo-Hua Scholarship, Yu Kuo-Hua Culture and Education Foundation
Feb, 1997	NTHU Yung Tuan Scholarship
Sep, 1997	The Yen Scholarship, Yen Ching-Ling Industrial Developing Foundation
Feb, 1996	NTHU Tai Ta Electronics Scholarship

Awards & Honors (Continued)

Sep, 1996 The Liu Scholarship of Mr. Ta-Chung Liu Education and Culture Memorial Foundation

Feb, 1995 NTHU Mr. Feng-chang Lu Memorial Scholarship

Appointments

The Chinese University of Hong Kong ***Assistant Professor*** *2011 - present*

- Assistant Professor, Department of Mechanical and Automation Engineering
- Associate faculty member of Biomedical Engineering Program *2011 - present*
- Associate faculty member of School of Biomedical Science *2013 - present*
- Associate Research Fellow, CUHK Shenzhen Research Institute *2014- present*

Precision Instrument and Optics Limited ***Co-Founder*** *2014 - present*

- Pi Optics Limited was founded in July 2014 to commercialize a suite of high-speed microscopic imaging techniques and nanopositioning technologies developed at CUHK between 2011 – 2014.
- Received 2014 and 2015 TSSSU Award from ITC

PreciBio Medical Devices, LLC ***Co-Founder*** *2011 - present*

- PreciBio Medical Devices was founded in 2012 to commercialize the precision mouse-clamping technology for biomedical imaging invented by Shih-Chi Chen (US 8,028,663).
- Received the NIH SBIR Phase I Award in 2012

Nano Terra, Inc. ***Senior Mechanical Engineer*** *2009 - 2011*

- Start-up company founded by Prof. George Whitesides at Harvard University.
- Lead all engineering related research and development; developed various precision machines for nanomanufacturing and Microcontact Printing

Harvard Medical School, Massachusetts General Hospital, Wellman Center for Photomedicine
MIT, Department of Mechanical Engineering (Dual appointment)

Research Fellow *2007 - 2009*

Tissue Vision, Inc. ***Consultant*** *2008 - 2011*

- Developed a flexure-based vibration microtome for precision slicing and tissue handling for whole organ imaging and an automated five-axis mechanical positioning system.

Teaching and Education

CUHK Department of Mechanical and Automation Engineering

- MAEG 3030. *Fluid Mechanics*. Undergraduate level course. (Spring 2016)
- MAEG 3040. *Mechanical Design*. Undergraduate level course. (Spring 2015, 2016)
- ENGG 5405. *Micromachining and Microelectromechanical Systems*. New graduate level course (Fall 2013, 2014, 2015)
- BMEG 3210. *Biofliuds*. Undergraduate level course (Spring 2012, 2013, 2014)

- MAEG 3090. *Advanced Energy Technology*. New undergraduate level course. (Fall 2011, Fall 2012)
- MAEG 5775. *Energy and Environment*. Graduate level course (M.Sc. program), Guest-lecturer. (Fall 2011).
- ENGG 1100. *Introduction to Engineering*. Undergraduate level course, Project mentor. (Fall 2012 and 2013).
- BMEG 5760. *BioMEMS and Bio-Nanotechnology*. Graduate level course (M.Sc. program), Guest-lecturer (Spring 2012)

MIT Department of Mechanical Engineering
Invited Guest Lecturer

- 2.72. *Elements of Mechanical Design*. Undergraduate level course (Spring 2007, Spring 2008, Spring 2009)
- 2.75. *Precision Machine Design*. Doctoral level course (Fall 2007)
- 2.76. *Multi-scale System Design*. Doctoral level course (Fall 2006)
- 2.001. *How and Why Machine Works*. Undergraduate level course (Spring 2003, Spring 2004, Spring 2006)

Advising Experience

- Doctoral students
  - Qiang Geng 2015 - present
  - Chenyang Wen 2015 - present
  - Xiangyu Fan 2015 – present
  - Yina Chang 2014 - present (HKPFS)
  - Ji Wang 2014 - present (HKPFS)
  - Dien Wang 2014 - present
  - Yunlong Meng 2014 - present
  - Jianwei Chen 2014 - present
  - Heran Song 2013 - present (co-advise with Prof. Yeung Yam)
  - Chenglin Li 2013 - present
  - Jiyi Cheng 2012 - present
  - Dapeng Zhang 2012 - present (co-advise with Prof. Yeung Yam)
  - Xi Zhou 2011 - present
  - Mengxing Ouyang 2011 - 12 (co-advise with Prof. Wen Jung Li)
  - Long Ho Chau 2011 - 13 (co-advise with Prof. Wen Jung Li)
- Master students
  - Wang Chen 2015 - present
  - MIT Master Thesis: Paolo Baldesi (2009), Charudatta Datar (2009), Yufei Zhu (2009), Wenzhuo Yang (2009)

- Competition
  - Instructor of CUHK Robocon team—supervised CUHK team to attend the Asia-Pacific Robot Contest (ABU Robocon) and Robocon Hong Kong Contests in 2011, 2012, 2013, 2014, and 2015.
  - Supervised Hou Wang LEONG and Tak Lon Alan CHAU to win the Champion of Professor Charles K. Kao Student Creativity Award at CUHK and the 3rd place in the 13th National Challenge Cup Contest in 2013. (Project: Virtual Reality Gloves)
  - Supervised Dapeng Zhang and Jiyi Cheng (Project: iScope) to win the CUHK Pre-Incubation Centre (Pi Centre) competition in April, 2014.
  - Supervised Chenglin Li to win Merit Award in 2015 Professor Charles K. Kao Student Creativity Award and the Challenge Cup (Hong Kong Region), June 2015.
  - Supervised Wai Kit Jack and Lee Hiu Hung Rainbow (MAE FYP students) to win the 2nd prize of the Institute of Measurement and Control HK Section Student Project Competition, June 2015.
  - Supervised Chen Jianwei to win the First Place in the First Annual Student Competition of the American Society for Precision Engineering, November 2014, Boston, USA.
  - Supervised Dapeng Zhang and Jiyi Cheng to win the Poster Competition Award in 2015 SPIE Photonic West, San Francisco, USA, Feb 2015.

Record of Research Funding

External Research Funding

- Deputy Project Coordinator, "*Wearable Sensor Network for Precision and Continuous Blood Pressure Measurement*," HK$ 2,997,900, HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/275/15FP, 4/2016 - 3/2018.
- Principal Investigator, HK$ 4,000,000, "Precision 3-D Resolved Parallel Laser Machining and Metal Additive Manufacturing" HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/007/15P, 9/2015 – 8/2017.
- Principal Investigator, HK$ 495,728, "*Sub-diffraction Limit Parallel Manufacturing Based on Ultrashort Pulse Lasers*", HKSAR Research Grants Council (RGC) General Research Fund (GRF), CUHK 14202815, 1/2016 - 12/2018.
- Principal Investigator, HK$ 300,000, HKSAR Innovation and Technology Commission (ITC) Technology Start-up Support Scheme for Universities (TSSSU), TSSSU/CUHK/14/02/2, 4/2015 – 3/2016.
- Principal Investigator, HK$ 500,000, HKSAR Innovation and Technology Commission (ITC) Technology Start-up Support Scheme for Universities (TSSSU), TSSSU/CUHK/14/02/1, 12/2014 – 3/2015.
- Deputy Project Coordinator, "*Development of Eco-friendly Flexible Ultrathin Supercapacitors for Next-Gen Smart Cards*," HK$ 1,450,288, HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/160/14FP, 12/2014 - 11/2016.
- Principal Investigator, HK$ 1,400,000, "*Development of a Vacuum Nanoimprinting System for Low-cost Parallel Nanomanufacturing*" HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/129/14, 10/2014 – 3/2016.

- Principal Investigator, HK$ 692,894, "*Theoretical Modeling and Development of a Microtome Optimized for Soft Tissue Cutting and 3-D Microscopic Imaging*", HKSAR Research Grants Council (RGC) General Research Fund (GRF), CUHK 14201214, 1/2015 - 12/2017.
- Principal Investigator, HK$ 1,010,000, "*A High-Resolution Nonlinear Optical Endomicroscope Based on Tunable Micromirror*", HKSAR Research Grants Council (RGC) General Research Fund (GRF/ECS), CUHK 439813, 1/2014 - 12/2016.
- Co-Investigator, HK$ 50,000,000, "*Smart Solar Energy Harvesting, Storage, and Utilization*," HKSAR Research Grants Council (RGC), Theme Based Research Scheme (TRS), T23-407-13N, 1/2014 - 12/2018.
- Principal Investigator, CNY 800,000, "基于柔性机构的光学扫描系统与非线性光学内窥显微镜的研究," National Natural Science Foundation of China (NSFC), General Program (面上項目), #51375415, 1/2014 - 12/2017.
- Deputy Project Coordinator, HK$ 4,999,950, "*Development of an Intelligent and Tunable Dual AOI / AVI System for Advanced Manufacturing*," HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/098/13FP, 15/11/2013 -14/11/2015.
- Principal Investigator, HK$ 4,000,000, "*Multi-modality High-speed Microscope System for Volumetric Imaging*," HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/094/13FP, 9/2013 - 8/2015. Internship Award: InP/234/13, HK$ 308,226; InP/276/13 HK$ 321,440.
- Principal Investigator, "*Design and Control of Flexure-Based Multi-Axis Nanopositioners for Ultra Precision Applications*," HK$ 1,099,350, HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/262/12, 6/2013 - 11/2014. Internship Award: InP/174/13, HK$ 228,562; InP/175/13, HK$ 228,562.
- Deputy Project Coordinator, "*Development of a MOSFET-based On-chip Flow Cytometer*," HK$ 998,200, HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/025/12, 12/2012 - 5/2014.
- Principal Investigator, "*Precision Microcontact Printing for Roll to Roll Fabrication of Flexible Electronics*," HK$ 1,099,350, HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/251/11, 7/2012 - 12/2013; Internship Award: InP/062/12, HK$ 263,650; InP/131/12, HK$ 249,900.
- Principal Investigator, US$ 200,000, MGH-MIT Career Development Postdoctoral Fellowship in Translational Research, Massachusetts General Hospital, Harvard Medical School, 9/2007 - 9/2009.

CUHK Internal Funding

- Principal Investigator, "*Development of High-speed Laser Scanning Microscopy for In Vivo Deep Brain Imaging*,"HK$ 801,000, CUHK Shun Hing Institute of Advanced Engineering (SHIAE), 7/2014 – 6/2016.
- Principal Investigator, "*Ti: Sapphire Laser Amplifier System*," HK$ 1,552,200, CUHK Academic Equipment Grant, 2/2014.
- Principal Investigator, "*3D Reconfigurable Microfluidic Circuit*", HK$ 40,000, CUHK Startup Funding for Collaboration with Strategic Partners in Taiwan, 3/2013 - 2/2014.
- Principal Investigator, "*A High-precision Vacuum Stamping System for Printing Flexible Electronics*", HK$ 61,550, CUHK Direct Grant, 1/2013 - 6/2014.

- Principal Investigator, "*Dielectrophoresis Nano-separator for Precision Manufacturing of Polymeric Nanoparticles for Tumor-Targeted Drug Delivery*", HK$ 664,000, CUHK Shun Hing Institute of Advanced Engineering (SHIAE), 7/2012 - 6/2014.
- Principal Investigator, "*Development of Multiple Degrees of Freedom High-speed Scanning MEMS Mirror for Endomicroscopy Applications*," HK$ 40,000, CUHK Startup Funding for Collaboration with Strategic Partners in Taiwan, 3/2012 - 2/2013.
- Principal Investigator, "*Design of a Two-axis High-speed Scanning Mirror for Advanced Non-linear Microscopy*," HK$ 150,000, CUHK direct grant. 11/2011 - 10/2013.
- Principal Investigator, "*Multi-modality Video-rate Multiphoton Microscope and Endomicroscope System*," HK$ 1,461,319, CUHK Academic Equipment Grant, 11/2011.

Publications

Journal Publications (corresponding author*)

J. Cheng, C. Gu, D. Zhang, W. Chen, and S. Chen*, "Ultrafast Axial Scanning for Two-photon Microscopy via a Digital Micromirror Device and Binary Holography," *Optics Letters*, accepted for publication, Feb 2016.

J. Chen, J. Cheng, D. Zhang, and S. Chen*, "Precision UV Imprinting System for Parallel Fabrication of Large-area Micro-Lens Arrays on Nonplanar Surfaces," *Precision Engineering*, Vol. 4, pp. 70-74, 2016.

N. Luo, W. Dai, C. Li, Z. Zhou, L. Lu, C.C.Y. Poon, S. Chen, Y. Zhang, and N. Zhao*, "Flexible Piezoresistive Sensor Patch Enabling Ultralow Power Cuffless Blood Pressure Measurement," *Advanced Functional Materials*, Vol. 26, No. 8, pp. 1178-87, 2015.

J. Cheng, C. Gu, D. Zhang, and S. Chen*, "High-speed Femtosecond Laser Beam Shaping based on Binary Holography using a Digital Micromirror Device," *Optics Letters*, Vol. 40, No. 21, pp. 4875-78, 2015.

J. Jiang, D. Zhang, C. Gu, S. Walker, Y. Ke, W. Yung, and S. Chen*, "Fast 3-D Temporal Focusing Microscopy Using an Electrically-tunable-lens," *Optics Express*, Vol. 23, No. 19, pp. 24362-68, 2015.

F.Y. Lee, X. Zhou, X. Yang, W. Fang*, S. Chen*, "Design of a Tunable Resonant Micromirror," *Sensors & Actuators: A. Physical*, Vol. 234, pp. 72-81, 2015.

C. Gu, Y. Chang, D. Zhang, J. Cheng, and S. Chen*, "Femtosecond Laser Pulse Shaping at Megahertz Rate via a Digital Micromirror Device," *Optics Letters*, Vol. 40, No. 17, pp. 4018-4021, 2015.

J. Chen, C. Gu, H. Lin, and S. Chen*, "Soft Mold-based Hot Embossing Process for Precision Imprinting of Optical Components on Non-planar Surfaces," *Optics Express*, Vol. 23, No. 16, pp.20977-985, 2015.

C. Gu, D. Zhang, Y. Chang and S. Chen*, "Digital Micromirror Device-based Ultrafast Pulse Shaping for Femtosecond Laser," *Optics Letters*, Vol. 40, No. 12, pp. 2870-73, 2015.

S.M. Yang, W. Chen, D. Zhang, and S. Chen*, "A Flow-Free Droplet-Based Device for High Throughput Polymorphic Crystallization," *Lab on a Chip*, Vol. 15, pp. 2680-87, 2015.

X. Zhou, H. Xu, N. Zhao*, and S. Chen*, "Flexure-based Roll-to-roll Platform: A Practical Solution for Realizing Large-area Microcontact Printing," *Scientific Reports,* Vol. 5, No. 10402, 2015.

S.M. Yang, H. Yao, D. Zhang, W.J. Li, H.F. Kung, and S. Chen*, "Droplet-based Dielectrophoresis Platform for Polymeric Nanoparticle Separation and Improved Gene Delivery Efficiency," *Microfluidics and Nanofluidics*, Vol. 19, No. 1, pp. 235-43, 2015.

S. Chen*, H. Choi, P.T.C. So, and M. L. Culpepper, "Thermomechanical Actuator-Based Three-axis Optical Scanner for High-Speed Two-photon Endomicroscope Imaging," *Journal of Microelectromechanical Systems*, Vol. 23, No. 3, pp. 570-78, 2014.

L.H. Chau, W. Liang, F. Cheung, W.K. Liu*, W.J. Li*, S. Chen, G.B. Lee, "Self-Rotation of Cells in an Irrotational AC E-Field in an Opto-Electrokinetics Chip," *PLoS ONE*, Vol. No. 1: e51577, 2013.

H. Yao, S. Chen, Z. Shen, Y.C. Huang, X. Zhu, X.M. Wang, W. Jiang, Z.F. Wang, X.W. Bian, E.A. Ling, H.F. Kung*, M.C. Lin*, "Functional Characterization of a PEI-CyD-FA-coated Adenovirus as Delivery Vector for Gene Therapy," *Current Medicinal Chemistry*, Vol. 20, No. 20, pp. 2601-08, 2013.

W.M. Fu, J.F. Zhang, H. Wang, H.S. Tan, W.M. Wang, S. Chen, X. Zhu, T.M. Chan, C.M. Tse, K.S. Leung, G. Lu, H.X. Xu, H.F. Kung*, "Apoptosis Induced by 1,3,6,7-Tetrahydroxyxanthone in Hepatocellular Carcinoma and Proteomic Analysis," *Apoptosis*, Vol. 17, No. 8, pp. 842-51, 2012.

W.M. Fu, J.F. Zhang, H. Wang, Z.C. Xi, W.M. Wang, P. Zhuang, X. Zhu, S. Chen, T.M. Chan, K.S. Leung, G. Lu, H.X. Xu, H.F. Kung*, "Heat Shock Protein 27 Mediates the Effect of 1,3,5-trihydroxy-13,13-dimethyl-2H-pyran [7,6-b] Xanthone on Mitochondrial Apoptosis in Hepatocellular Carcinoma," *Journal of Proteomics*, Vol. 75, No. 15, pp. 4833-43, 2012.

S. Chen* and M. L. Culpepper, "Design of Contoured Thermomechanical Actuators and Pulsing Actuation to Enhance Dynamic Performance," *Journal of Microelectromechanical Systems*, 2012, Vol. 21, No. 2, pp. 340–49.

S. Chen and M. L. Culpepper*, "Design of Contoured Microscale Thermomechanical Actuators," *Journal of Microelectromechanical Systems*, 2006, Vol. 15, No. 5, pp. 1226–34.

S. Chen and M. L. Culpepper*, "Design of a Six-axis Microscale Nano-positioner – μHexflex," *Precision Engineering*, 2006, Vol. 30, No. 3, pp. 314–24.

Proceedings of Peer-reviewed Conferences (corresponding author*)

D. Wang, D. Zhang, J. Jiang, and S. Chen*, "Parallel Laser Machining and Metal Sintering based on Temporal Focusing," Proceedings of the Annual Meeting of the ASPE, Austin, TX, USA, Nov. 2015, pp. 86-90.

J. Wang and S. Chen*, "Study of Soft Tissue Cutting Based on a Precision Vibrating Blade Microtome," Proceedings of the Annual Meeting of the ASPE, Austin, TX, USA, Nov. 2015, pp. 100-104.

D. Wang, X. Zhou, and S. Chen*, "Control Strategy for Flexure-based Precision Roll-to-roll Machine," Proceedings of the Annual Meeting of the ASPE, Austin, TX, USA, Nov. 2015, pp. 27-31.

C. Li, J. Wang, and S. Chen*, "Design of a Flexure-based Dynamic-tunable Five-axis Nanopositioner," Proceedings of the Annual Meeting of the ASPE, Boston, MA, USA, Nov. 2014, pp. 153-157.

X. Zhou, H. Xu, N. Zhao, and S. Chen*, "A Flexure-based Roll-to-roll Machine for Fabricating Flexible Photonic Devices," Proceedings of the Annual Meeting of the ASPE, Boston, MA, USA, Nov. 2014, pp. 395-398.

J. Chen and S. Chen*, "Soft Mold-based Hot Embossing for High-resolution Patterning on Nonplanar Surfaces," Proceedings of the Annual Meeting of the ASPE, Boston, MA, USA, Nov. 2014, pp. 121-125.

D. Zhang, J. Cheng, and S. Chen*, "Multi-depth Real-time Confocal Imaging," *Proceedings of the 2013 International Symposium on Optomechatronic Technologies* (ISOT), Jeju, Korea, Oct. 28-30, 2013 (Best Paper Award).

J. Chen, H. Xu, N. Zhao, and S. Chen*, "Design of Vacuum Imprinting System for High Resolution Patterning on Nonplanar Surfaces," *Proceedings of the Annual Meeting of the ASPE*, Saint Paul, MN, USA, Oct. 2013, pp. 290-94.

X. Zhou, J. Cheng, N. Zhao, and S. Chen*, "A Flexure-Based High-Throughput Roll-to-Roll Printing System," *Proceedings of the Annual Meeting of the ASPE*, Saint Paul, MN, USA, Oct. 2013, pp. 353-57.

S. Chen*, R. Panas, M. L. Culpepper, and T. Ragan, "Design of a Precision Flexure-Based Vibration Microtome for Whole Organ Imaging," *Proceedings of the Annual Meeting of the ASPE*, San Diego, CA, Oct. 2012, pp. 186-89.

S.-M. Yang, S. Chen, L. Hsu, and C.-H. Liu, "Dynamic Micro-vortex Manipulation Based on Light-induced Optoelectroosmotic Flow", *Optofluidics 2012*, 13-15 September, 2012, Suzhou, China. (Oral Presentation)

S. Chen and M. L. Culpepper, "The Design and Optimization of Cascaded Chevron Flexures and Actuators for Precision Motion Guidance," *Proceedings of the Annual Meeting of the ASPE*, Portland, OR, Oct. 2008, pp. 480–83.

H. Choi, S. Chen, P. T. So, and M. L. Culpepper, "Characterization of a Multiphoton Endomicroscope," OSA Biomedical Optics Topical Meeting and Tabletop Exhibit, FL, March 16–19, 2008.

S. Chen, H. Choi, M. L. Culpepper, and P. T. So, "The Design and Dynamic Characterization of a Precision Three-axis Microscale Fast Scanning Stage for Two-photon Endomicroscopy," *Proceedings of the Annual Meeting of the ASPE*, Dallas, TX, Oct. 2007, pp. 111–14.

S. Chen, M. L. Culpepper, and S. Jordan, "Six-axis Compliant Mechanisms for Manipulation of Micro-scale Fiber Optics Components," *Proceedings of the 2007 Photonics West* (MOEMS-MEMS), SPIE, San Jose, CA, Jan. 2007.

S. Jordan, M. L. Culpepper, and S. Chen, "Positioning Resolution Enhancement of MEMS and Piezo Nanopositioners," *Proceedings of the 4th International Symposium on Nanomanufacturing*, Cambridge, MA, Nov. 1–4, pp. 166–70.

S. Chen, M. L. Culpepper, and S. Jordan, "Application of Input Shaping® and HyperBit Control™ to Improve the Dynamic Performance of a Six-axis MEMS Nanopositioner," *Proceedings of the Annual Meeting of the ASPE*, Monterey, CA, Oct. 2006, pp. 287–90.

S. Chen, H. Choi, D. Kim, L. Munro, M. L. Culpepper, and P. T. So, "Design of a High-speed, Micro-scale Fast Scanning Stage for Two-photon Endomicroscopy," *Proceedings of the Annual Meeting of the ASPE*, Monterey, CA, Oct. 2006, pp. 279–82.

S. Chen, M. L. Culpepper, J. Bardt, and J. Ziegert, "Formation of Micro-scale Precision Flexures via Molding of Metallic Glass," *Proceedings of the Annual Meeting of the ASPE*, Monterey, CA, Oct. 2006, pp. 283–86.

H. Choi, S. Chen, D. Kim, P. T. So, and M. L. Culpepper, "Design of a Non-linear Endomicroscope Biopsy Probe," OSA Biomedical Optics Topical Meeting and Tabletop Exhibit, FL, March 19–23, 2006.

S. Chen and M. L. Culpepper, "Design and Optimization of Thermomechanical Actuator via Contour Shaping," *Proceedings of the ASME International Mechanical Engineering Congress & Exposition*, MEMS, Orlando, FL, Nov. 2005, pp. 201–08.

S. Chen, D. Golda, A. Herrmann, and A. Slocum, "Design of an Ultra Precision Diaphragm Flexure Stage for Out-of-plane Motion Guidance," *Proceedings of the ASME International Design Engineering Technical Conference*, DETC 2004 – 57401, Salt Lake City, UT, Sept. 28–Oct. 2, 2004, pp. 1015–21.

S. Chen and M. L. Culpepper, "Compliant Mechanisms for Micro-scale Spatial Manipulators: Applications in Nanomanipulation," *Proceedings of the Annual Meeting of the ASPE*, Orlando, FL, Oct. 2004, pp. 293–96.

M. L. Culpepper, S. Chen, and M. V. Kartik, "Precision Engineering Education at MIT via Hands-on Design Projects: The MIT Nano-Etch-A-Sketch Course Project," *Proceedings of the Annual Meeting of the ASPE*, Orlando, FL, Oct. 2004, pp. 337–40.

S. Chen and M. L. Culpepper, "A Six Degree-of-Freedom Tri-layer Chevron Beam Thermal Actuator," *Proceedings of the Annual Meeting of the ASPE*, Orlando, FL, Oct. 2004, pp. 329-32.

M. L. Culpepper, S. Chen, and S. Korb, "Design and Manufacture of Monolithic, 3D Compliant Mechanisms for Nanomanipulation Equipment," *Proceedings of the Annual Meeting of the ASPE*, Orlando, FL, Oct. 2004, pp. 333–36.

M. L. Culpepper and S. Chen, "Design of Precision Manipulators using Binary Actuation and Differential Compliant Mechanisms," *Proceedings of the Annual Meeting of the ASPE*, Portland, OR, Oct. 26–31, 2003, pp. 293–96.

US Patents

S. Chen and M. L. Culpepper, TissueVision, Inc., "Oscillating Microtome with Flexure Drive," U.S. Patent 8,839,700 issue on Sepember 23rd, 2014.

S. Chen, Z. Zhang, and M. L. Culpepper, Massachusetts Institute of Technology, "Compliant Holder Device for Animal Imaging or Surgery," U.S. Patent 8,028,663, issued on October 4th, 2011.

S. Chen and M. L. Culpepper, Massachusetts Institute of Technology, "Microfabricated Mechanical Frequency Multiplier," U.S. Patent 7,882,701, issued on February 8th, 2011.

S. Chen and M. L. Culpepper, Massachusetts Institute of Technology, "Contoured Thermomechanical Actuators and Pulsing for Enhanced Dynamic Performance," U.S. Patent 7,777,392 issued on August 17th, 2010.

S. Chen and M. L. Culpepper, Massachusetts Institute of Technology, "Multiple Degree of Freedom Micro Electro-mechanical System Positioner and Actuator," U.S. Patent 7,451,596, issued on November 18th, 2008.

US Patent Applications

S. Chen, J. Cheng, C. Gu, and D. Zhang, The Chinese University of Hong Kong, "High-speed Binary Laser Beam Shaping and Scanning", U.S. Utility Patent Application, No. 14/860,461, Sept 21st, 2015.

S. Chen, D. Zhang, C. Gu, J. Jiang and Y. Yam, The Chinese University of Hong Kong, "Parallel Laser Manufacturing System And Method", U.S. Utility Patent Application, No. 14/594871, Jan 12th, 2015.

S. Chen, C. Li, and J. Wang, The Chinese University of Hong Kong, "Method and Apparatus for Dynamic Tuning", U.S. Utility Patent Application, No. 14/535611, Nov. 7th, 2014.

S. Chen, N. Zhao, H. Xu, and X. Zhou, The Chinese University of Hong Kong, "Positive Microcontact Printing", U.S. Utility Patent Application, No. 14/492449, Sept 22nd, 2014.

S. Chen, X. Zhou, and J. Cheng, The Chinese University of Hong Kong, "Roll-To-Roll Printing Systems and Methods for Fabricating Print Roller", U.S. Utility Patent Application, No. 14/057,320 , October 19th, 2013.

S. Chen, J. Chen, J. Cheng, The Chinese University of Hong Kong, "Imprinting Apparatus and Method for Imprinting", U.S. Utility Patent Application, No. 14/057,314, October 18th, 2013.

S. Chen and P. So, Massachusetts Institute of Technology & CUHK, "Precision Flexure-Based Microtome for Tissue Sectioning", Technology Disclosure jointly submitted to MIT and CUHK, May 2014.

S. Chen, et al., Nano Terra, Inc., "Polymeric Fiber Compositions for Use as Battery Separators, Filters and Membranes, and Methods of Making and Using the Same, U.S. Utility Patent Application (US 12/886,082), filed in September 2010.

S. Chen, et al., Nano Terra, Inc., "Apparatus and Methods for Treating Fluids Using Ultraviolet Light," U.S. Provisional Patent Application (PCT/US2010/061138), filed in December 2010.

S. Chen, Harvard Medical School, "Microfabricated Tunable Resonant Micromirror," Massachusetts General Hospital Technology Disclosure, filed in Aug 2008.

S. Chen, M. L. Culpepper, Massachusetts Institute of Technology, "Discrete Surface Tension Actuation Technology (DSTAT™)," MIT Technology Disclosure, filed in October 2002.

Presentations

Invited Talks

Y. Chang, C. Gu, D. Zhang, and S. Chen, "High-speed Arbitrary Phase and Amplitude Femtosecond Pulse Shaping with a Digital Micromirror Device", SPIE Photonic West, San Francisco, USA Feb 13-18, 2016.

C. Gu, Y. Chang, D. Zhang, J. Cheng, and S. Chen, "Femtosecond Laser Pulse Shaping at Megahertz Rate via a Digital Micromirror Device", SPIE Photonic West, San Francisco, USA Feb 13-18, 2016.

D. Zhang, C. Gu and S. Chen, "High-throughput Depth-resolved Parallel Laser Machining based on Temporal Focusing", SPIE Photonic West, San Francisco, USA Feb 13-18, 2016.

J. Chen, C. Gu, and S. Chen, "Soft Mold-based Nanomanufacturing Process for Fabricating Photonic Devices on Nonplanar Substrates", SPIE Photonic West, San Francisco, USA Feb 13-18, 2016.

S. Chen, "Multi-photon excitation microscopy for high-speed volumetric imaging," invited presentation, CUHK Chow Yuk Ho Technology Centre for Innovative Medicine Symposium Seminar Series on Advances in Optical Neuroimaging and Neuromodulation, Nov 20th, 2015.

S. Chen, "Precision Instrumentation Design for Biomedical Imaging and Nanomanufacturing Applications," invited presentation, Department of Electrical and Computer Engineering, University of Houston, Nov 6th, 2015.

D. Wang, X. Zhou, and S. Chen, "Control Strategy for Flexure-based Precision Roll-to-roll Machine," Annual Meeting of the ASPE, Austin, TX, USA, Nov. 2014.

J. Wang, X. Zhou, and S. Chen, "Study of Soft Tissue Cutting based on a Precision Vibrating Blade Microtome," Annual Meeting of the ASPE, Austin, TX, USA, Nov. 2014.

S. Chen, "Parallel Laser Machining and Metal Sintering based on Temporal Focusing," Annual Meeting of the ASPE, Austin, TX, USA, Nov. 2014.

S. Chen, "Temporal Focusing-based Parallel Microfabrication and Multiphoton Imaging," invited presentation, International Seminar on Convergent Bioscience and Manufacturing Engineering, Seoul, Oct 29th, 2015.

S. Chen, "Temporal Focusing Parallel Fabrication and High Speed Pulse Shaping Based on Digital Micromirror Devices," 2015 IEEE Optoelectronics Global Conference, August 30, 2015, Shenzhen, China.

S. Chen, "Precision Instrumentation Design for Nanomanufacturing Applications," invited presentation, Department of Mechanical Engineering, National Chiao Tung University, Taiwan, Aug 14th, 2015.

S. Chen, "Precision Instrumentation Design for Nanomanufacturing Applications," invited presentation, Department of Mechanical Engineering, MIT, Boston, June 12, 2015.

S. Chen, "Precision Instrumentation Design for Nanomanufacturing Applications," invited presentation, SMART, National University of Singapore, Singapore, May 14, 2015.

S. Chen, "Precision Instrumentation Design for Nanomanufacturing Applications," invited presentation, Department of Mechanical Engineering, National Taiwan University, Taiwan, March 27, 2015.

S. Chen, "High Speed Optical Imaging and Stimulation Technologies for in vivo Biological Studies," invited presentation, International Minimally Invasive Surgery Conference; CUHK Summit on Healthcare Innovation and Biomedical Engineering – Medicine for the Future, Hong Kong, March 21, 2015.

J. Cheng, Y. Chang, and S. Chen, "Real-time High-resolution Fiber Bundle-based Two-photon Endomicroscope", SPIE Photonic West, San Francisco, USA, Feb 7-12, 2015.

S. Chen, "Soft Mold-Based Nanoimprinting System," 29th Annual Meeting of the ASPE, Boston, MA, USA, November 9-14, 2014.

C. Li, J. Wang, and S. Chen, "Design of a Flexure-based Dynamic-tunable Five-axis Nanopositioner," Annual Meeting of the ASPE, Boston, MA, USA, Nov. 2014.

S. Chen, "Low Cost Parallel Manufacturing Processes for Fabricating Photonic Devices," 2014 International Symposium on Optomechatronic Technologies (ISOT), Seattle, USA, Nov. 5-7, 2014.

S. Chen, "Precision Roll-to-Roll Machine Design for Large Area Metal Patterning at Nanometer Resolution," invited presentation, Department of Power Mechanical Engineering, National Tsing Hua University, Taiwan, July 28th, 2014.

S. Chen, "Experience Sharing on ITF Grant Application," invited presentation, Office of Research and Knowledge Transfer Services (ORKTS), The Chinese University of Hong Kong, July 24th, 2014.

S. Chen, "Precision and Optical Instrumentation for Biomedical Applications," invited presentation, Energy Engineering and Education Workshop, Kunming Medical University, China, July 7th, 2014.

S. Chen, "Thermomechanical Actuator-Based Three-axis Optical Scanner for High-Speed Two-photon Endomicroscope Imaging," invited presentation at the 2014 IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Hawaii, April 16th, 2014.

S. Chen, "Energy Engineering Program and Energy Research at CUHK," invited presentation, Energy Engineering and Education Workshop, National Cheng Kung University, Taiwan, Nov 8th, 2013.

S. Chen, "Multi-depth Real-time Confocal Imaging," 2013 International Symposium on Optomechatronic Technologies (ISOT), Jeju, Korea, Oct. 28-30, 2013.

S. Chen, "Multi-scale Precision Instrumentation Design for Bio and Nano Applications," invited presentation, Laboratory for Manufacturing and Productivity, Department of Mechanical Engineering, MIT, USA, July 17th, 2013.

S. Chen, "Multi-scale Precision Instrumentation Design for Bio and Nano Applications," invited presentation, Department of Electronic Engineering, National Chiao Tung University, Taiwan, May 27th, 2013.

S. Chen, "Development of Precision Machines and Instrumentations for Nano-/Biomedical Applications," invited presentation, Department of Mechanical and Biomedical Engineering, City University of Hong Kong, HK, Feb 1, 2013.

S. Chen, "Development of Precision Machines and Instrumentations for Nano-/Biomedical Applications," invited presentation, Department of Physics, University at Texas El Paso, USA, Aug 14, 2012.

S. Chen, "Development of Precision Machines and Instrumentations for Nano-/Biomedical Applications," invited presentation, Department of Biomedical Engineering, National Cheng Kung University, Taiwan, July 23, 2012.

S. Chen, "Precision Roll-to-Roll System for the Fabrication of Organic Photovoltaic Devices," invited presentation, School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University, China, July 2, 2012.

S. Chen, "Development of Precision Machines and Instrumentations for Nano-/Biomedical Applications," invited presentation, Department of Medical System Engineering, Gwangju Institute of Science and Technology, S. Korea, June 8, 2012.

S. Chen, "Design of Flexure-Based Precision Mechanisms for Biomedical Applications," invited presentation, Department of Mechanical Engineering, Dankook University, S. Korea, June 7, 2012.

S. Chen, "Design of Flexure-Based Precision Mechanisms for Biomedical Applications," invited presentation, Department of Power Mechanical Engineering, National Tsing Hua University (Taiwan), April 5, 2012.

S. Chen, "Innovations in energy harvesting and storage for manufacturing and industrial applications—creating a battery-less world," invited talk at InnoAsia 2011, Hong Kong Science and Technology Parks, November 16, 2011.

S. Chen, "Multi-scale Precision Design for Microscopy and Bioengineering Applications," invited presentation at Massachusetts General Hospital, presenting research accomplishments to Chancellor of MIT, Vice President of MGH and other distinguished faculty members at MIT and Harvard Medical School, September 1, 2009.

S. Chen, "Creating the Next-Generation Small-scale Machines for Precision Engineering, Microscopy and Biomedical Applications," invited presentation at the Wellman Center for Photomedicine, Massachusetts General Hospital, Harvard Medical School, March 17, 2009.

S. Chen, "Creating the Next-Generation Small-scale Machines for Precision Engineering, Microscopy and Biomedical Applications," invited presentation, Department of Power Mechanical Engineering, National Tsing Hua University, Taiwan, February 26, 2009.

S. Chen, "Creating the Next-Generation Small-scale Machines for Precision Engineering, Microscopy and Biomedical Applications," invited presentation, Department of Mechanical Engineering, Hong Kong University, Hong Kong, February 17, 2009.

S. Chen, "Creating the Next-Generation Small-scale Machines for Precision Engineering, Microscopy and Biomedical Applications," invited presentation, Department of Mechanical Engineering, Carnegie Mellon University, February 09, 2009.

S. Chen, "MEMS Technology for Biomedical Applications," invited presentation, Center for Systems Biology, Massachusetts General Hospital, Harvard Medical School, December 17, 2007.

S. Chen, "Design of a High Performance Thermomechanical Actuator for High-Speed Endoscopic Scanning System," invited presentation, Wellman Center for Photomedicine, Massachusetts General Hospital, Harvard Medical School, August 31, 2007.

S. Chen, "The Design and Dynamic Characterization of a Precision Three-axis Microscale Fast Scanning Stage for Two-photon Endomicroscopy," Annual Meeting of the American Society for Precision Engineering, Oct. 15–20, 2007, Dallas, TX, USA.

S. Chen, "Design of an Ultra Precision Diaphragm Flexure Stage for Out-of-plane Motion Guidance," ASME International Design Engineering Technical Conference, Sept. 28–Oct. 2, 2004, Salt Lake City, UT, USA.

Poster Presentations *(Underlined name indicates Presenter)*

D. Zhang, J. Cheng and S. Chen, "Multi-photon Laser Scanning Omnidirectional Imaging with Tunable Frame Rate", SPIE Photonic West, San Francisco, USA Feb 7-12, 2015. (Poster Competition Award)

S. Chen, "A Flexure-based Roll-to-roll Machine for Fabricating Flexible Photonic Devices," poster presentation at the 29th Annual Meeting of the American Society for Precision Engineering, November 9-14, 2014, Boston, MA, USA.

S. Chen, "Design of Vacuum Imprinting System for High Resolution Patterning on Nonplanar Surfaces," poster presentation at the Annual Meeting of the American Society for Precision Engineering, October 20–25, 2013, St. Paul, MN, USA.

S. Chen, "Design of a Precision Flexure-Based Vibration Microtome for Whole Organ Imaging," poster presentation at the Annual Meeting of the American Society for Precision Engineering, October 21–26, 2012, San Diego, CA, USA.

S. Chen, "Design of a Tunable Resonant Micromirror," poster presentation at the ISOT 2011 International Symposium on Optomechatronic Technologies, Nov 1-3, 2011, Hong Kong.

S. Chen, "Design of Vacuum Imprinting System for High Resolution Patterning on Nonplanar Surfaces," poster presentation at the Annual Meeting of the American Society for Precision Engineering, Oct. 20-25, 2013, Saint Paul, MN, USA.

S. Chen, "The Design and Optimization of Cascaded Chevron Flexures and Actuators for Precision Motion Guidance," poster presentation at the Annual Meeting of the American Society for Precision Engineering, October 19–24, 2008, Portland, OR, USA.

H. Choi and S. Chen, "Characterization of a Multiphoton Endomicroscope," poster presentation at the Gordon Research Conference on Lasers in Medicine and Biology, July 20–25, 2008, at Holderness, NH, USA.

S. Chen, M. L. Culpepper, and S. Jordan, "Application of Input Shaping® and HyperBit Control™ to Improve the Dynamic Performance of a Six-axis MEMS Nanopositioner," poster presentation at the Annual Meeting of the American Society for Precision Engineering, October 15–20, 2006, Monterey, CA, USA.

S. Chen, H. Choi, D. Kim, L. Munro, M. L. Culpepper, and P. T. So, "Design of a High-speed, Micro-scale Fast Scanning Stage for Two-photon Endomicroscopy," poster presentation at the Annual Meeting of the American Society for Precision Engineering, October 15–20, 2006, Monterey, CA, USA.

S. Chen, M. L. Culpepper, J. Bardt, and J. Ziegert, "Formation of Micro-scale Precision Flexures via Molding of Metallic Glass," poster presentation at the Annual Meeting of the American Society for Precision Engineering, October 15–20, 2006, Monterey, CA, USA.

S. Chen, H. Choi, D. Kim, L. Munro, M. L. Culpepper, and P. T. So, "High-speed micro-scanners for in vivo, biomedical imaging," poster presentation at the MEMS@MIT Fall 2006 meeting, October 10, 2006.

S. Chen and M. L. Culpepper, "Six-axis Compliant Micro-Manipulator for Small-scale Fiber Optics Components," poster presentation at the Photonics & Roadmapping Spring Conference of the MIT Microphotonics Center, May 3, 2004.

S. Chen and M. L. Culpepper, "Compliant Mechanisms for Micro-scale Spatial Manipulators: Micro-Hexflex," poster presentation at the MIT Microsystems Technology Laboratories Annual Review, Waterville Valley, NH, January 28–29, 2004.

Professional Activities & Services

Professional Memberships

American Society of Mechanical Engineers (2003 - present)

American Society for Precision Engineering (2003 - present)

Sigma Xi, the Scientific Research Society (2007 - present)

SPIE (2014 - present)

The Optical Society (OSA) (2015 - present)

IEEE (OSA) (2015 - present)

Conference Organizing Committee Member

Member, 30th Annual Meeting of the American Society for Precision Engineering, November 1-6, 2015, Austin, Austin, Texas USA

Member, 29th Annual Meeting of the American Society for Precision Engineering, November 9-14, 2014, Boston, MA, USA

Member, 2012 CU Energy Day, organized seminars and mini-workshops and student poster sessions to promote energy research at CUHK, July 31, 2012

Member, ISOT 2011 International Symposium on Optomechatronic Technologies, Hong Kong, Nov 1 - 3, 2011

Sessions Chaired in Conferences

Chair, Session on Precision Motion Control, 29th Annual Meeting of the American Society for Precision Engineering, November 9-14, 2014, Boston, MA, USA

Chair, Session on Optical-Based Sensors and Actuators, International Symposium on Optomechatronic Technologies (ISOT 2014), Seattle, WA, USA Nov. 5-7, 2014

Chair and Session Organizer, Session on Endomicroscope And MEMS/NEMS-Based Optical

Imaging Systems, 9th IEEE International Conference on Nano/Micro Engineered and Molecular Systems (NEMS), April 13-16, 2014, Waikiki Beach, Hawaii, USA

Chair, Session on Optical Imaging in Biology and Medicine, International Symposium on Optomechatronic Technologies (ISOT 2013), Jeju, Korea, Oct. 28-30, 2013

Chair, Student Competition, International Symposium on Optomechatronic Technologies (ISOT 2011), Hong Kong, Nov 1 - 3, 2011.

Chair, Session on Major Issues in Nanomanufacturing, 4th International Symposium on Nanomanufacturing (ISNM 2006), Cambridge, MA, November 1 - 4, 2006

Journal Editorship

Editor, *IEEE Transactions on Nanotechnology* since Jan, 2015

Journal & Conference Referee

Reviewer, *Journal of Innovative Optical Health Sciences*, since 2015

Reviewer, *Optics Express* since 2015

Reviewer, *Scientific Reports* since 2015

Reviewer, *Applied Physics B: Lasers and Optics* since 2015

Reviewer, *Lab on a Chip* since 2015

Reviewer, *Precision Engineering* since 2014

Reviewer, *Annual Meeting of ASPE* since 2013

Reviewer, *Microfluidics and Nanofluidics* since 2014

Reviewer, *IEEE Transactions on Mechatronics* since 2014

Reviewer, *Sensors and Actuators A: Physical* since 2014

Reviewer, *Journal of Micromechanics and Microengineering* since 2012

Reviewer, *Journal of Heat Transfer* since 2011

NAMI Patent Assessment Committee, ITSP Project (Ref. No.: ITP/007/08NP), November 21, 2011.

Reviewer, *International Design Engineering Technical Conferences*, ASME, August 2008

Educational Counselor

Educational Council Member of the Massachusetts Institute of Technology in the Hong Kong region since February 2014 – present

HK Science & Technology Parks Admission Panel Member

Admission Panel Member of the Technology Business Incubation Programme (Incu-Tech/Incu-Bio Programme) of the Hong Kong Science and Technology Parks Corporation (HKSTPC), Aug 1, 2014 – July 31, 2016

Hong Kong Government Services

Member of the Appeal Board Panel, Oct 14, 2015 – Oct 13, 2018. The Appeal Board Panel is established under the Builder's Lifts and Tower Working Platforms Ordinance (Cap. 470).

CUHK Services

CUHK

Promotion and admission trip to Taiwan, Feb 28- Mar 2, 2016

Trip to NCKU with VC for the establishment of a new center, Taiwan, Dec 6-8, 2015

Promotion and admission trip to Taiwan, Feb 28- Mar 2, 2015

Promotion and admission trip to Taiwan, Feb 15-18, 2014

Promotion and admission trip to Taiwan, Feb 23-25, 2013

Lee Woo Sing College

Member, Conference and Research Grant Committee, March 2012 – present

Member, IT Committee, March 2016 - present

Faculty of Engineering

Member, Faculty Disciplinary Committee, 2011 - 2013

Member, Faculty Committee on Academic Advising, 2012 – present

Member, Clean Room Management Committee, July 2012 – present

Member, Undergraduate Admission Committee (with Prof. Li Tan), 2013

Member, Faculty Task Force on Publicity and Outreach, 2013 – present

Department of Mechanical and Automation Engineering

Member, Department Executive Committee, 2014 - present

Chair, Undergraduate Mentoring Committee, 2012 – present

Member, Teaching and Learning Committee, 2012 - present

Referee, JUPAS Interview 2011, 2012, 2013

Admission trip to Fudan University and Shanghai Jiao Tong University for HK PhD Fellowship, July 1-4, 2012.

Reviewer, Chung Chi College Yu-Luan Shih Award and Academic Creativity Award 2012/2013