

Precision Machine Design
Biomedical Optics & Ultrafast Laser
Microsystem Design and Fabrication

Nanomanufacturing
Compliant Mechanisms

Ph.D. in Mechanical Engineering

Dissertation: "Design of a high-speed-force-stroke thermomechanical micro-actuator via geometric contouring and mechanical frequency multiplication"

S.M. in Mechanical Engineering

Thesis: "A six-degree-of -freedom compliant micro-manipulator for silicon optical bench"

B.S. in Power Mechanical Engineering

- 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

Sep, 1996 The Liu Scholarship of Mr. Ta-Chung Liu Education and Culture Memorial Foundation
Feb, 1995 NTHU Mr. Feng-chang Lu Memorial Scholarship

The Chinese University of Hong Kong Assistant Professor

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

Precision Instrument and Optics Limited Co-Founder

- 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

- 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

- 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

Tissue Vision, Inc. Consultant

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

CUHK Department of Mechanical and Automation Engineering

- MAEG 3030. . Undergraduate level course. (Spring 2016)
- MAEG 3040. . Undergraduate level course. (Spring 2015, 2016)
- ENGG 5405. . New graduate level course (Fall 2013, 2014, 2015)
- BMEG 3210. . Undergraduate level course (Spring 2012, 2013, 2014)

- MAEG 3090. . New undergraduate level course. (Fall 2011, Fall 2012)
- MAEG 5775. . Graduate level course (M.Sc. program), Guest-lecturer. (Fall 2011).
- ENGG 1100. . Undergraduate level course, Project mentor. (Fall 2012 and 2013).
- BMEG 5760. . Graduate level course (M.Sc. program), Guest-lecturer (Spring 2012)

**MIT Department of Mechanical Engineering
Invited Guest Lecturer**

- 2.72. . Undergraduate level course (Spring 2007, Spring 2008, Spring 2009)
- 2.75. . Doctoral level course (Fall 2007)
- 2.76. . Doctoral level course (Fall 2006)
- 2.001. . Undergraduate level course (Spring 2003, Spring 2004, Spring 2006)

- 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.

External Research Funding

- Deputy Project Coordinator, “
,” 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, “
”, 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, “
,” 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, “
” HKSAR Innovation and Technology Commission (ITC) Innovation and Technology Fund (ITF), ITS/129/14, 10/2014 - 3/2016.

- Principal Investigator, HK\$ 692,894, “
”, HKSAR Research Grants Council
(RGC) General Research Fund (GRF), CUHK 14201214, 1/2015 - 12/2017.
- Principal Investigator, HK\$ 1,010,000, “
”, HKSAR Research Grants Council (RGC) General Research Fund
(GRF/ECS), CUHK 439813, 1/2014 - 12/2016.
- Co-Investigator, HK\$ 50,000,000, “
”, 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 (面上项目),
#51375415, 1/2014 - 12/2017.
- Deputy Project Coordinator, HK\$ 4,999,950, “
”, 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, “
”, HKSAR Innovation and Technology Commission (ITC) Innovation and Technology
Fund (ITF), ITS/094/13FP, 9/2013 - 8/2015. Internship Award: InP/234/13, 1.27 Tm] TJETBT00 0 1

- Principal Investigator, “
”, HK\$ 664,000, CUHK Shun Hing Institute of
Advanced Engineering (SHIAE), 7/2012 - 6/2014.
- Principal Investigator, “
”, HK\$ 40,000, CUHK Startup Funding for Collaboration
with Strategic Partners in Taiwan, 3/2012 - 2/2013.
- Principal Investigator, “
”, HK\$ 150,000,

- 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," *Journal of Microelectromechanical Systems*, 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," *Journal of Microelectromechanical Systems*, 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," *Journal of Microelectromechanical Systems*, 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 Microelectromechanical Systems*, 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 - μ Hexflex," *Journal of Microelectromechanical Systems*, 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," (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," , 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," , 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," , 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", , 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," , 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," , 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," (MOEMS-MEMS), SPIE, San Jose, CA, Jan. 2007.
- S. Jordan, M. L. Culpepper, and S. Chen, "Positioning Resolution Enhancement of MEMS and Piezo Nanopositioners," , 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," , 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," , 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," , 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,"
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,"
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,"
MEMS, 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,"
MEMS, Orlando, FL, Oct. 2004, pp. 337-40.
- S. Chen and M. L. Culpepper, "A Six Degree-of-Freedom Tri-layer Chevron Beam Thermal Actuator,"
MEMS, 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,"
MEMS, Orlando, FL, Oct. 2004, pp. 333-36.
- M. L. Culpepper and S. Chen, "Design of Precision Manipulators using Binary Actuation and Differential Compliant Mechanisms,"
MEMS, Portland, OR, Oct. 26-31, 2003, pp. 293-96.
- S. Chen and M. L. Culpepper, TissueVision, Inc., "Oscillating Microtome with Flexure Drive," U.S. Patent 8,839,700 issue on September 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.
- 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.

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

- D. Zhang, I. 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

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, since Jan, 2015

Journal & Conference Referee

Reviewer, , since 2015

Reviewer, since 2015

Reviewer, since 2015

Reviewer, since 2015

Reviewer, since 2015

Reviewer, since 2014

Reviewer, since 2013

Reviewer, since 2014

Reviewer, since 2014

Reviewer, since 2014

Reviewer, since 2012

Reviewer, since 2011

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

Reviewer, , 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

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