YI-CHUNG TUNG, PH.D. (董奕鍾) Curriculum Vitae

Assistant Research Fellow **November 2010**

Research Center for Applied Sciences
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RESEARCH INTEREST

Integrated Biomedical Microdevices, Cell Culture in Various Microenvironments, Biomedical Instruments, Polymer/Silicon Hybrid Microsystems, Advanced Micro/Nano Fabrication Techniques.

EDUCATION

Doctor of Philosophy in Mechanical Engineering, September 2000 – December 2005
University of Michigan, Ann Arbor, MI, USA
Dissertation: PDMS-on-Silicon Microsystems: Integration of Polymer Micro/Nanostructures for New MEMS Device Functions
Advisor: Dr. Katsuo Kurabayashi

Master of Science in Electrical Engineering, May 2004 – April 2005
University of Michigan, Ann Arbor, MI, USA
Major: Circuit and Microsystems; Minor: Solid-State
Advisor: Dr. Katsuo Kurabayashi

Master of Science in Mechanical Engineering, September 1996 – June 1998
National Taiwan University, Taipei, Taiwan
Dissertation: Microelectromechanical Systems: Fabrication and Analysis of Non-Symmetric Thin Square Piezoelectric Bimorph Plate
Advisor: Dr. Shuo-Hung Chang

Bachelor of Science in Mechanical Engineering, September 1992 – June 1996
National Taiwan University, Taipei, Taiwan

PROFESSIONAL EXPERIENCE

Assistant Research Fellow, June 2009 – Now
Integrated Biomedical Microdevices Lab
Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan

Visiting Scholar, August 2010 – December 2010
Department of Biomedical Engineering, University of Michigan, Ann Arbor
Department of Mechanical Engineering, University of Michigan, Ann Arbor

Postdoctoral Research Fellow, January 2006 – April 2009

Micro/Nano/Molecular Biotechnology Lab (Directed by Dr. Shuichi Takayama)

Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA

- Designed and fabricated micro/nanofluidic devices for cell culturing in various microenvironments.
- Designed and developed biomedical devices and instruments for three dimensional cell (spheroid) culture and high throughput screening (HTS).
- Designed and developed microdevices for flow cytometry and fluorescence-activated cell sorting (FACS).
- Developed and characterized electro-wetting on dielectric (EWOD) microdevices for high resolution programmable cell patterning.
- In charge of microfabrication, cell culture training and management.

Research Mentor, January 2007 – April 2007

Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA

BME450 Biomedical Engineering Design (a senior level course)

- Led a project research group *Microflo* (6 senior students) working on a project "Implantable Wireless Power Transmission Microfluidic Device for Drug Delivery."
- Provided students guidance for research directions and device design.

Graduate Student Research Assistant, February 2001 – December 2005

Micro Systems Technology and Science Lab (Directed by Dr. Katsuo Kurabayashi)

Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI, USA

- Designed and fabricated new Micro/Nanoelectromechanical systems (MEMS/NEMS) incorporating elastomeric micro/nanostructures with functionalities such as multi-axis actuation and optical diffraction tunability.
- Developed an integrated polymer-based microfluidic channel for rapid multi-color flow cytometric detection using PIN photodiodes in Chemical Engineering cleanroom (class 1000)
- Invented a new fabrication process named "Multi-Scale Soft-Lithographic Lift-Off and Grafting (MS-SLLOG)" to integrate polymer micro/nanostructures with silicon microsystems in Solid-State Electronics Laboratory (SSEL, class 100/10 cleanroom)

Graduate Student Instructor, January 2005 – April 2005

Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI, USA

ME 240 Dynamics and Vibration (a sophomore/junior level course)

- Worked with Prof. Karl Grosh and Prof. Bogdan Epureanu on class instruction and grading.
- Class Size: 120 sophomore/junior students
- Held office hours; provided homework solutions and assisted students in preparing mid-term and final exams.
- Maintained and updated the course website.

Graduate Student Instructor, September 2003 – December 2003

Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI, USA

ME 440 Intermediate Dynamics and Vibration (a senior/graduate level course)

- Worked with Prof. Noel Perkins on class instruction and grading.
- Class Size: 70 senior/graduate students
- Held office hours and reviewed sections; provided homework solutions and example problems to assist students in preparing mid-term and final exams.
- Maintained and updated the course website.

Lieutenant Instructor, May 1999 – July 2000

Weapon and Artillery Division, Chinese Army Logistics School, Chungli, Taiwan

- Taught high school level mathematics and chemistry
- Translated military technical manuals

Graduate Student Research Assistant, September 1996 – June 1998

Precision Micro Mechanism Lab (Directed by Dr. Shuo-Hung Chang)

Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan

- Designed and fabricated piezoelectric actuators and MEMS devices
- Developed piezoelectric dual-dimension optical scanning mechanism
- Fabricated and analyzed micro piezoelectric bimorph membrane devices

PROFESSIONAL SERVICE

1. Reviewer of *Acta Biomaterialia*, *Applied Physics Letters*, *IEEE Photonics Technology Letters*, *International Journal of Optomechatronics*, and *Journal of Modern Optics.*
2. Session Chair of *2009 RCAS Taiwan-Japan Workshop on Single Molecule/Confocal Microscopy*.
3. Program Committee of *SPIE International Symposium on Optics East 2006* (Optomechatronic Micro/Nano Devices and Components).
4. Coordinator of *Interdisciplinary Microfluidics Workshop 2003* (funded by Rackham Graduate School, University of Michigan, Ann Arbor)

HONORS AND AWARDS

1. Taiwan National Health Research Institutes (NHRI), 2011 Integrated Research Grants in Health and Medical Sciences, *Career Development Grant* (for junior faculties, 10 CDG proposals were approved for 2011-2014), January 2011.
2. Society for Laboratory and Screening, LabAutomation 2011, *Tony B. Academic Travel Award*, January 2011.
3. University of Michigan, Horace H. Rackham School of Graduate Studies, *2005 Distinguished Dissertation Award Honorable Mention*, April 2006.
4. Taiwan Ministry of Education, *Study Abroad Scholarship* (for outstanding Taiwanese students pursing Ph.D. degrees in other countries), February 2005.
5. University of Michigan, Horace H. Rackham School of Graduate Studies, *Predoctoral Fellowship* (for outstanding research performance of Ph. D. candidates), February 2005.
6. SPIE, OpticsEast 2004, *Best Student Paper Award* (selected among 120 papers), October 2004
7. University of Michigan, *2004-05 Robert M. Caddell Memorial Graduate Student Achievement Award* (for research contributions in materials manufacturing), May 2004.

INVITED PRESENTATIONS

1. "Cell Culture in Microfluidic Devices," Institute of Physics, Academia Sinica, Taipei, Taiwan, December 21, 2009.
2. "Integrated Biomedical Microdevices for Cell Biology Studies," Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, October 26, 2009.
3. "Integrated Biomedical Microdevices for Cell Biology Studies," Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan, October 12, 2009.
4. "Integrated Biomedical Microdevices for Cell Biology Studies," Institute of NanoEngineering and MicroSystems, National Tsing-Hua University, Hsinchu, Taiwan, October 5, 2009.
5. "Integrated Biomedical Microdevices for Cell Biology Studies," Department of Electrical and Computer Engineering, Wayne State University, Detroit, Michigan, USA, May 15, 2008.
6. "Development of Integrated Biomedical Microdevices for Studying Cells," Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan, November 2, 2006.
7. "PDMS-on-Silicon Microsystems: Integration of Polymer Micro/Nanostructures for New MEMS Device Functions," University of Texas Health Science Center, Houston, Texas, USA, October 5, 2006.
8. "PDMS-on-Silicon Microsystems: Integration of Polymer Micro/Nanostructures for New MEMS Device Functions," Department of Mechanical Engineering, National Chiao-Tung University, Hsinchu, Taiwan, June 2, 2006.

PUBLICATIONS

Book Chapters:

1. K. Kurabayashi, N.-T. Huang, and Y.-C. Tung, "Multiscale, Hierarchical Integration of Soft Polymer Micro and Nano Structures into Optical MEMS," *Optical Micro and Nano Actuator Technology*, CRC Press, in preparation.
2. Y.-C. Tung and S. Takayama, "Ionic Liquid for Microfluidic Actuation – Multiplexed Hydraulic Valve Actuation Using Ionic Liquid Filled Soft Channels and Braille Displays," *Ionic Liquids V: From Knowledge to Application*, American Chemical Society (ACS) Books, 2009.

Archival Journals:

1. C.-Y. Wu, W.-H. Liao, and Y.-C. Tung*, "Integrated ionic liquid-based electrofluidic circuits for pressure sensing within polydimethylsiloxane microfluidic systems," submitted to *Lab Chip*.
2. N. J. Douville, P. Zamankhan, Y.-C. Tung, R. Li, B. L. Vaughan, J. White, J. B. Grotberg*, and S. Takayama*, "Combination Fluid and Solid Mechanical Stresses Contribute to Cell Death and Detachment in a Microfluidic Alveolar Model," *Lab Chip*, in press (SCI, Impact Factor: 6.306, Times Cited: 0).
3. Y.-C. Tung[1], A. Y. Hsiao[1], S. G.. Allen. Y. Torisawa, and S. Takayama*, "High-Throughput 3D Spheroid Culture and Drug Testing Using a 384 Hanging Drop Array," *Analyst,* in press (SCI, Impact Factor: 3.272)([1]Equal Contribution).
4. N.-T. Huang, S. C. Truxal, Y.-C. Tung, A. Y. Hsiao, G. D. Luker, S. Takayama, and K. Kurabayashi*, "Multiplexed Spectral Signature Detection for Microfluidic Color-Coded Bioparticle Flow," *Anal. Chem*., Vol. 82, No. 22, pp. 9506-9512, November 2010 (SCI, Impact Factor: 5.214, Times Cited: 0).
5. W. Cha, Y.-C. Tung, M. E. Meyerhoff*, and S. Takayama*, "Patterned Electrode-Based Amperometric Gas Sensor for Direct Nitric Oxide Detection within Microfluidic Devices," *Anal. Chem*., Vol. 82, No. 8, pp. 3300-3305, April 2010 (SCI, Impact Factor: 5.214, Times Cited: 0).
6. B. Mosadegh, C.-H. Kuo, Y.-C. Tung, Y. Torisawa, T. Bersano-Begey, H. Tavana, and S. Takayama*, "Self-Controlled Microfluidics by Integrated Semi-Fluid-Conducting Elastomeric Components," *Nat. Phys.*, Vol. 6, Issue 6, pp. 433-

437, June 2010 (SCI, Impact Factor: 15.491, Times Cited: 2).

7. N. J. Douville, Y.-C. Tung, R. Li, J. D. Wang, M. E. H. El-Sayed, and S. Takayama*, "Fabrication of Two-Layered Channel System with Embedded Electrodes to Measure Resistance across Epithelial and Endothelial Barriers," *Anal. Chem.*, Vol. 82, No. 6, pp. 2505-2511, March 2010 (SCI, Impact Factor: 5.214, Times Cited: 1).
8. N.-T. Huang, S. C. Truxal, Y.-C. Tung, A. Hsiao, S. Takayama, and K. Kurabayashi*, "High-Speed Tuning of Visible Laser Wavelength Using a Nanoimprinted Grating Optical Tunable Filter," *Appl. Phys. Lett.*, Vol. 95, Issue 21, pp. 21106 (3 pages), November 2009 (SCI, Impact Factor: 3.554, Times Cited: 0).
9. J. W. Song, S. P. Cavnar, A. C. Walker, K. E. Luker, M. Gupta, Y.-C. Tung, G. D. Luker, and S. Takayama*, "Microfluidic Endothelium for Studying the Intravascular Adhesion of Metastatic Breast Cancer Cells," *PLoS One*, Vol. 4, Issue. 6, pp. e5756 (10 pages), June 2009 (SCI, Impact Factor: 4.351, Times Cited: 8).
10. A. Y. Hsiao, Y. Torisawa, Y.-C. Tung, S. Sud, R. S. Taichman, K. J. Pienta, and S. Takayama*, "Microscale System for Formation of PC-3 Prostate Cancer Co-Culture Spheroids," *Biomaterials*, Vol. 30, Issue 16, pp. 3020-3027, June 2009 (SCI, Impact factor: 7.365, Times Cited: 8).
11. G. Mehta, J. Lee, W. Cha, Y.-C. Tung, J. J. Linderman, and S. Takayama*, "Hard Top Soft Bottom Microfluidic Devices for Cell Culture and Chemical Analysis," *Anal. Chem.*, Vol. 81, No. 10, pp. 3714-3722, May 2009 (SCI, Impact factor: 5.214, Times Cited: 13).
12. T. Uchida, K. L. Mills, C.-H. Kuo, W. Roh, Y.-C. Tung, M. D. Thouless, and S. Takayama*, "External Compression-Induced Fracture Patterning on the Surface of Poly(dimethylsiloxane) Cubes and Microspheres," *Langmuir*, Vol. 25, No. 5, pp.3102-3107, February 2009 (SCI, Impact factor: 3.898, Times Cited: 0).
13. S. C. Truxal, K. Kurabayashi*, and Y.-C. Tung, "Design of a MEMS Tunable Polymer Grating for a Single Detector Spectroscopy," *International Journal of Optomechatronics*, Vol. 2, Issue 2, pp. 75-87, June 2008 (SCI, Impact Factor: 0.354, Times Cited: 0).
14. Y. Kamotani, T. Bersano-Begey, N. Kato, Y.-C. Tung, D. Huh, J. W. Song, and S. Takayama*, "Individually Programmable Cell Stretching Microwell Arrays Actuated by a Braille Display," *Biomaterials*, Vol. 29, Issue 17, pp. 2646-2655, June 2008 (SCI, Impact factor: 7.365, Times Cited: 6).
15. C. Y. Fan, Y.-C. Tung, S. Takayama, E. Meyhöfer*, and K. Kurabayashi*, "Electrically Programmable Surfaces for Configurable Patterning of Cells," *Adv. Mater.*, Vol. 20, Issue 8, pp. 1418-1423, April 2008 (SCI, Impact factor: 8.379, Times Cited: 3).
16. S. C. Truxal, Y.-C. Tung, and K. Kurabayashi*, "A Flexible Nano Grating Integrated onto Silicon Micromachines by Soft Lithographic Replica Molding and Assembly," *J. Microelectromech. Syst.*, Vol. 17, No. 2, pp. 393-401, April 2008 (SCI, Impact factor: 1.922, Times Cited: 3).
17. S. C. Truxal, Y.-C. Tung, and K. Kurabayashi*, "High-Speed Deformation Soft Lithographic Nano-Grating Patterns for Ultra Sensitive Optical Spectroscopy," *Appl. Phys. Lett.*, Vol. 92, Issue 5, pp. 051116 (3 pages), February 2008 (also published in *Virtual Journal of Nanoscale Science and Technology*, Vol. 17, No. 8) (SCI, Impact factor: 3.554, Times Cited: 2).
18. D. Huh, H. Fujioka, Y.-C. Tung, N. Futai, R. Paine III, J. B. Grotberg, and S. Takayama*, "Respiratory Crackles-Induced Mechanical Lung Injury in Microfluidic Airway Systems," *Proc. Natl. Acad. of Sci. U. S. A.*, Vol. 104, No. 48, pp. 18886-18891, November 2007 (SCI, Impact factor: 9.432, Times Cited: 37).
19. Y.-C. Tung, Y. Torisawa, N. Futai, and S. Takayama*, "Small Volume, Low Mechanical Stress Cytometry Using Computer-Controlled Braille Display Microfluidics," *Lab Chip*, Vol. 7, Issue 11, pp. 1497-1503, November 2007 (SCI, Impact factor: 6.306, Times Cited: 5).

20. Y. S. Heo, L. M. Cabrera, J. W. Song, N. Futai, Y.-C. Tung, G. D. Smith, and S. Takayama*, "Characterization and Resolution of Evaporation Mediated Osmolality Shifts that Constrain Microfluidic Cell Culture in Poly(dimethylsiloxane) Devices," *Anal. Chem.*, Vol. 79, No. 3, pp. 1126-1134, February 2007 (SCI, Impact factor: 5.214, Times Cited: 34).
21. W. Gu, H. Chen, Y.-C. Tung, J-C. D. Meiners, and S. Takayama*, "Multiplexed Hydraulic Valve Actuation Using Ionic Liquid Filled Soft Channels and Braille Displays," *Appl. Phys. Lett.*, Vol. 90, Issue. 3, pp. 033505 (3 pages), January 2007 (also published in *Virtual Journal of Nanoscale Science and Technology*, Vol. 15, No. 4) (SCI, Impact factor: 3.554, Times Cited: 4).
22. Y.-C. Tung* and K. Kurabayashi*, "A Metal-Coated Polymer Micromirror for Strain-Driven High-Speed Multi-Axis Optical Scanning," *IEEE Photonics Technol. Lett.*, Vol. 17, No. 6, pp.1193-1195, June 2005 (SCI, Impact factor: 1.815, Times Cited: 0).
23. Y.-C. Tung* and K. Kurabayashi*, "A Single-Layer PDMS-on-Silicon Hybrid Micro Actuator with Multi-Axis Out-of-Plane Motion Capabilities, Part I: Design and Analysis," *J. Microelectromech. Syst.*, Vol. 14, No. 3, pp. 548-557, June 2005 (SCI, Impact factor: 1.922, Times Cited: 8).
24. Y.-C. Tung* and K. Kurabayashi*, "A Single-Layer PDMS-on-Silicon Hybrid Micro Actuator with Multi-Axis Out-of-Plane Motion Capabilities, Part II: Fabrication and Characterization," *J. Microelectromech. Syst.*, Vol. 14, No. 3, pp. 558-566, June 2005 (SCI, Impact factor: 1.922, Times Cited: 5).
25. Y.-C. Tung* and K. Kurabayashi, "Nanoimprinted Strain-Controlled Elastomeric Gratings for Optical Wavelength Tuning," *Appl. Phys. Lett.*, Vol. 86, Issue 16, pp. 161113 (3 pages), April 2005 **(featured as the cover image)**. (also published in *Virtual Journal of Nanoscale Science and Technology*, Vol. 11, No. 18) (SCI, Impact factor: 3.554, Times Cited: 18).
26. Y.-C. Tung, M. Zhang, C.-T. Lin, K. Kurabayashi, and S.J. Skerlos*, "PDMS-Based Opto-Fluidic Micro Flow Cytometer with Two-Color, Multi-Angle Fluorescence Detection Capability using PIN Photodiodes," *Sens. Actuators B-Chem.*, Vol. 98, pp. 356-367, March 2004 (SCI, Impact factor: 3.083, Times Cited: 65).
27. D. Huh, Y.-C. Tung, H.-H. Wei, J.B. Grotberg, S.J. Skerlos, K. Kurabayashi, and S. Takayama*, "Use of Air-Liquid Two-Phase Flow in Hydrophobic Microfluidic Channels for Disposable Flow Cytometers," *Biomed. Microdevices*, Vol. 4, No. 2, pp. 141-149, May 2002 (SCI, Impact factor: 3.323, Times Cited: 61).
28. S.-H. Chang* and Y.-C. Tung, "Electro-Elastic Characteristics of Asymmetric Rectangular Piezoelectric Laminae," *IEEE Trans. Ultrson. Ferroelectr. Freq. Control*, Vol. 46, No. 4, pp. 950-960, July 1999 (SCI, Impact factor: 1.800, Times Cited: 18).
29. S.-H. Chang* and Y.-C. Tung, "A Novel Design of Piezo-Driven Dual-Dimension Optical Scanning Mechanism," *Rev. Sci. Instrum.*, Vol. 69, No. 9, pp. 3277-3282, September 1998 (SCI, Impact factor: 1.521, Times Cited: 3).

Conference and Symposium Proceedings:

1. Y.-C. Tung, C.-Y. Wu, C.-C. Peng, W.-H. Liao, and Y.-A. Chen, "A Microfluidic Cell Culture Array Platform for High-Throughput Drug Testing under Various Oxygen Tensions," accepted to *LabAutomation2011 Conference*, Palm Springs, CA, January 29-February 2, 2011. **(Tony B. Academic Travel Award for Junior Faculties – Y.-C. Tung)**
2. A. Y. Hsiao[1], Y.-C. Tung[1], S. G. Allen, Y. Torisawa, M. Ho, and S. Takayama, "High-Throughput 3D Spheroid Culture and Drug Testing Using a 384 Hanging Drop Array," accepted to *LabAutomation2011 Conference*, Palm Springs, CA, January 29-February 2, 2011. ([1]Equal Contribution) **(Tony B. Academic Travel Award for Graduate Students – A. Y, Hsiao)**

3. C.-Y. Wu, W.-H. Liao, and Y.-C. Tung, "A Seamlessly Integrated Microfluidic Pressure Sensor Based on an Ionic Liquid Electrofluidic Circuit," accepted to *the 24th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*, Cancun, Mexico, January 23-27, 2011.
4. N. J. Douville, P. Zamankham, Y.-C. Tung, J. B. Grotberg, and S. Takayama, "The Impact of Fluid Mechanical Stresses in the Development of Ventilator-Induced Lung Injury," *Proc. the 16th U. S. National Congress of Theoretical and Applied Mechanics*, State College, PA, June 27-July 2, 2010.
5. Y.-C. Tung and S. Takayama, "Microfluidic Actuation System Based on Electrolysis of Ionic Liquid/Water," *Proc. the 13th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS)*, Jeju, Korea, November, 1-5, 2009.
6. S. P. Cavnar, J. W. Song, A. C. Walker, K. E. Luker, M. Gupta, Y.-C. Tung, G. D. Luker, and S. Takayama, "Spatially Physiological Microfluidic Metastasis on a Chip," *The 5th International Conference on Microtechnologies in Medicine and Biology (MMB)*, Quebec City, Canada, April 1-3, 2009.
7. B. Mosadegh, C. H. Kuo, Y.-C. Tung, Y. Torisawa, and S. Takayama, "Pre-Programmed Microfluidic Devices for Automated Assays," *The 5th International Conference on Microtechnologies in Medicine and Biology (MMB)*, Quebec City, Canada, April 1-3, 2009.
8. B. Mosadegh, J. Kuo, Y.-C. Tung, Y. Torisawa, and S. Takayama, "A Monolithic Check-Valve for Systematic Control of Temporal Actuation in Microfluidic Devices," *Proc. the 12th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS)*, San Diego, CA, October, 12-16, 2008.
9. S. Takayama, Y.-C. Tung, and B.-H. Chueh, "Biological Micro/Nanofluidics," *Micro/Nanoscale Heat Transfer International Conference (MNHT)*, Tainan, Taiwan, January 6-9, 2008. (Invited Paper)
10. Y. S. Heo, L. M. Cabrera, C. L. Borman, C. T. Shah, Y.-C. Tung, G. D. Smith, and S. Takayama, "Real Time Culture and Analysis of Single Embryo Metabolism Using a Microfluidic Device with Deformation-Based Actuation," *Biomedical Engineering Society Annual Meeting (BMES)*, Los Angeles, CA, September 26-29, 2007.
11. Y. Zheng, H. Fujioka, Y. Torisawa, D. Huh, Y.-C. Tung, S. Takayama, and J. B. Grotberg, "Liquid Plug Propagation through Flexible Microchannels," *Biomedical Engineering Society Annual Meeting (BMES)*, Los Angeles, CA, September 26-29, 2007.
12. S. C. Truxal, K. Kurabayashi, and Y.-C. Tung, "MEMS Tunable Polymer Grating for Advantageous Spectroscopic Measurements," *Proc. SPIE International Symposium on Optomechatronic Technologies (ISOT)*, Lausanne, Switzerland, October 8-10, 2007.
13. Y.-C. Tung, Y. Torisawa, N. Futai, and S. Takayama, "Small Volume Low Mechanical Stress Cytometry Using Computer-Controlled Braille Display Microfluidics," *Gordon Research Conference, Physics and Chemistry of Microfluidics*, Waterville Valley, NH, July 15-20, 2007.
14. D. Huh, H. Fujioka, Y.-C. Tung, N. Futai, R. Paine III, J. B. Grotberg, and S. Takayama, "Microfluidic Pulmonary System for Cellular Injury Due to Fluid Mechanical Stresses during Airway Reopening," *Gordon Research Conference, Physics and Chemistry of Microfluidics*, Waterville Valley, NH, July 15-20, 2007.
15. S. C. Truxal, Y.-C. Tung, and K. Kurabayashi, "A PDMS-on-Silicon Deformable Grating for Spectral Differentiation of Mixed Wavelength Signals," *Proc. the 14th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers)*, Lyon, France, June 10-14, 2007.
16. D. Huh, H. Fujioka, Y.-C. Tung, J. B. Grotberg, and S. Takayama, "Small Airway Injury Associated with Respiratory Crackles Created in Microfluidic Airway Systems," *Biomedical Engineering Society Annual Meeting (BMES)*, Chicago, IL, October 11-14, 2006.

17. Y.-C. Tung and K. Kurabayashi, "A Single-Layer Multiple Degree-of-Freedom PDMS-on-Silicon Dynamic Focus Micro-Lens," *Proc. the 19th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*, Istanbul, Turkey, January 22-26, 2006.
18. Y.-C. Tung , S. C. Truxal, and K. Kurabayashi, "Multiscale Soft-Lithographic Lift-Off and Grafting (MS-SLLOG) Process for Active Polymer Nanophotonics Device Fabrication," *Proc. SPIE International Symposium on Optomechatronic Technologies (ISOT)*, Vol. 6050, Sapporo, Japan, December 5-7, 2005.
19. Y.-C. Tung, S. C. Truxal, and K. Kurabayashi, "Real-Time Spectroscopy for Biodetection Enabled by MEMS", *The 7th Biodetection Technologies: Technological Responses to Biological Threats*, Baltimore, MD, June 9-10, 2005.
20. Y.-C. Tung and K. Kurabayashi, "A Nanoimprinted Strain-Induced Reconfigurable Polymer Micro-Optical Grating," *Proc. the 18th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*, Miami, FL, January 30-Feburary 3, 2005.
21. Y.-C. Tung and K. Kurabayashi, "Multi-Axis, Single-Layer PDMS-on-Silicon Micro Optical Reflector," *Proc. SPIE International Symposium on Optics East*, Vol. 5604, Philadelphia, PA, October 25-28, 2004. **(Best Student Paper Award)**
22. Y.-C. Tung and K. Kurabayashi, "Multi-Axis, Single-Layer PDMS-on-Silicon Micro Optical Reflector," *Proc. the 3rd KAIST/GIST-University of Michigan Joint Seminar*, Daejeon, Korea, May 2-5, 2004.
23. Y.-C. Tung, J.-G. Kim, and K. Kurabayashi, "Design Optimization of a Novel, Large-Displacement, Multi-Axis, Silicon/Polymer Hybrid Actuator for Micro Optics," *Proc. the 2003 ASME International Mechanical Engineering Congress and R&D Expo (IMECE)*, Washington D.C., November 15-21, 2003.
24. Y.-C. Tung, C.-T. Lin, K. Kurabayashi, S.J. Skerlos, "High Fidelity and Low Cost Detection of Mulit-Color Fluorescence from Biological Cells in a Micro Integrated Flow Cytometer (MIFC) with Disposable Observation Cell," *Proc. the 6th International Symposium on Micro Total Analysis Systems (μTAS)*, Nara, Japan, November, 3-7, 2002.
25. D. Huh, Y.-C. Tung, J.B. Grotberg, S.J. Skerlos, K. Kurabayashi, and S. Takayama, "Air-Liquid Two-Phase Microfluidic System for Low-Cost, Low-Volume, and Low-Power Micro Flow Cytometer," *Proc. the 5th International Symposium on Micro Total Analysis Systems (μTAS)*, Monterey, CA, October 21-25, 2001.
26. S.-H. Chang and Y.-C. Tung, "Application of the Extended Kantorovich Method to the Vibration of Rectangular Piezoelectric Laminae," *Proc. the 6th Pan American Congress of Applied Mechanics (PACAM)*, Rio de Janeiro, Brazil, January 4-8, 1999.
27. S.-H. Chang and Y.-C. Tung, "Piezoelectric Thin Film Devices Fabrication and Material Constants Evaluation," *Proc. the 14th National Conference of the Chinese Society of Mechanical Engineering*, Tainan, Taiwan, November 27-28, 1998.
28. S.-H. Chang and Y.-C. Tung, "A Novel Design of Piezo-Driven Dual-Dimension Optical Scanning Mechanism," *Proc. the 1997 International Conference on Precision Engineering (ICPE)*, Taipei, Taiwan, November 18-21, 1997.

Patents:

1. K. Kurabayashi, S. Takayama, S. J. Skerlos, H. Huh, J. B. Grotberg, and Y.-C. Tung, "Flow Cytometers and Detection System of Lesser Size," US Patent (Patent No. 7105355), 2006.
2. S.-H. Chang and Y.-C. Tung, "A Novel Piezo-Driven Optical Scanning Mechanism," Taiwan ROC Patent (Patent No. 833696), 1999.