

William C. Tang, Ph.D.

Professor, Biomedical Engineering,
Professor, Electrical Engineering and Computer Science
Professor, Chemical & Biomolecular Engineering
Professor, Materials Science & Engineering
University of California, Irvine

Biographical Summary:

William C. Tang received his BS, MS, and Ph.D. in Electrical Engineering & Computer Sciences from the University of California at Berkeley in 1980, 1982, and 1990, respectively. His seminal thesis work and invention of the electrostatic comb drive has become a crucial building block for many micro-actuator and microsensor research in the field. It was and continues to be recognized internationally as one of the most influential and foundational work in Micro-electromechanical Systems (MEMS) technology. Since his graduation, he has continued his contribution to the field first in the automotive industry as a Research Engineer Senior at Ford Research Laboratory in Dearborn, Michigan, and as the Sensor Research Manager at Ford Microelectronics, Inc., in Colorado Springs, Colorado. In 1996, he joined the Jet Propulsion Laboratory, California Institute of Technology, where he was the Supervisor of the MEMS Technology Group, leading the pursuit of MEMS technology for space applications.

In July 1999, he assumed the responsibilities as a Program Manager at the Defense Advanced Research Projects Agency (DARPA). He managed the programs in MEMS, Micro Power Generation (MPG), Nano Mechanical Array Signal Processors (NMAASP), and Chip-Scale Atomic Clock (CSAC) with an annual budget exceeding \$60 million. Through his role as the Program Manager for the largest program within the Microsystem Technology Office (MTO) and the single largest government-funding source for United States MEMS research, Dr. Tang provided national- and international-level leadership in shaping the future of MEMS. He provided programmatic guidance and technical supervision for 90+ contracts and grants to academic and industrial performers across the United States, coordinating the seven thrust areas within the MEMS program in a complementary way to solve difficult technical problems. Under his leadership, a significant set of funded programs had ultimately been adopted by the military and some even progressed towards commercialization with dual uses.

Dr. Tang interacted with other government agencies including the National Science Foundation (NSF), the National Institute of Standard and Technology (NIST), and the National Aeronautics and Space Administration (NASA) to promote and coordinate government investment in MEMS. He also provided leadership in collaboration between the MEMS research community and various branches within the military to transition research results to the end users. As a direct result of his effort, the Navy, the Army, and the Air Force initiated their funding efforts to further develop several important projects from the DARPA MEMS program into military platforms. Furthermore, many of the successful MEMS projects under his supervision also transitioned to product development within commercial volume manufacturers.

Dr. Tang was frequently invited to give keynote addresses both nationally and around the world to provide assessment of the state of MEMS research and his vision for the future direction and impact of MEMS. Internationally, he represented the United States as the authority on MEMS and contributed to global coordination on MEMS activities, which included the World Micromachine Summit, the NATO Research and Technology Organization MEMS Task Group, US-Europe Coordination and Roadmapping for MEMS, the International Technology Research Institute's study on Japanese MEMS industry, Canada-Europe Forum on MEMS for Aerospace Applications, the International Future

Trends in Microelectronics Advanced Workshop, and the Workshop on Frontiers in Electronics 2002. He served as the General Chairs for several international conferences and on numerous Technical Program Committees for conference in the micro- and nano-engineering and science field.

Since July 2002, Dr. Tang has been on faculty as a professor in the Department of Biomedical Engineering at the University of California, Irvine, with a joint appointment with the Department of Electrical Engineering and Computer Science. Currently, he is also jointly appointed with the Department of Chemical and Biomolecular Engineering and the Department of Materials Science and Engineering. He is the founding director of the Microbiomechanics Laboratory. From July 2005 to June 2006, and again from July 2009 to June 2010, he served as the Interim Chair for the Biomedical Engineering Department. His current research interests are in micro- and nano-scale technologies for neural science and engineering, microbiomechanics, and chip-based diagnostics of diseases. In addition, because of his expertise in space applications of MEMS technology, both DARPA and the US Army contracted him to develop micro propulsion engines for space uses and high-precision navigation systems. He was also funded by DARPA to contribute towards developing revolutionary prosthetic arms that interface directly with the nervous system. All-in-all, Dr. Tang garnered over \$6.8 million in extramural funding in support of his research as the Principal Investigator, and an additional \$12.1 million extramural fund through his collaborative research as co-investigator.

Dr. Tang was the first Associate Dean for Research in the Henry Samueli School of Engineering from March 2008 to June 2013, except for a six-month pause from July to December 2010 due to budgetary reasons. His primary responsibility was to provide strategic leadership and operational management of the research enterprise for the school, promoting and coordinating the efforts of the then 112 faculty members in 5 departments to attract, raise, and obtain extramural funding to establish, build, and maintain high quality research. He facilitated the establishment of forefront multidisciplinary research programs and centers that span across several schools including the Donald Bren School of Information and Computer Sciences, School of Medicine, School of Physical Sciences, School of Biological Sciences, School of Social Sciences, and the Program in Public Health. These programs and centers are strategically relevant to local, national, and international trends and needs. Further, he established and expanded collaborative initiatives with industries and national laboratories that share strategic and complementary interests with the Engineering School. On the global level, he developed and promoted international cooperation in engineering education and scientific research with key oversea institutions around the world. Particular emphases were on aligning future pursuits with the trends of collaborative research that span multiple disciplines, campuses, and international institutions.

On July 1, 2021, Dr. Tang assumed the position of Director of the Bioengineering Innovation & Entrepreneurship (BioENGINE) Program at the University of California, Irvine. He is responsible for promoting and expanding innovations in research and education in biomedical engineering, facilitating rapid technology transfers and commercialization, and establishing educational components in entrepreneurship in both graduate and undergraduate curricula within the BME Department. At the same time, Dr. Tang is also appointed as the Faculty Director of the M.Eng. Program BME Concentration, synergistically directing and managing the curriculum, instructions, and the entrepreneurial capstone projects for the BME Concentration of the M.Eng. Program.

Including the patent on electrostatic comb-drive actuator, Dr. Tang was awarded 8 U. S. patents with 4 provisional patents. He is the author and co-author for over 120 conference and refereed journal papers in the fields of neural science and engineering, micro technologies, and biomedicine, and is frequently invited to speak in seminars and workshops. Dr. Tang is a Senior Member of the Institute

of Electrical and Electronics Engineers (IEEE), a Fellow and Chartered Physicist with the Institute of Physics (IOP), and a Fellow of the American Institute for Medical and Biological Engineering (AIMBE).

Education:

12/1990 Ph.D., Electrical Engineering & Computer Sciences, University of California, Berkeley
6/1982 M.S., Electrical Engineering & Computer Sciences, University of California, Berkeley
12/1980 B.S., Electrical Engineering & Computer Sciences, University of California, Berkeley

Research Interests:

Neural science and neural engineering at the micro-scale, platforms for micro- and nano-scales single-cell biomedical diagnosis, micro biomechanics on organisms, tissues, and cells, with emphases on cardiomyocytes, neurons, cancer cells, immune cells, and malaria-infected red blood cells, microfabrication technology, computational science and devices for navigations, microactuators, and microsensors.

Professional Employments & Academic Appointments:

7/02 – Present: Professor, Biomedical Engineering Department, jointly appointed at Electrical Engineering and Computer Science, University of California, Irvine, CA.
7/18 – Present: Professor, Materials Science and Engineering, University of California, Irvine, CA
7/18 – Present: Professor, Chemical and Biomolecular Engineering, University of California, Irvine, CA
7/21 – Present: Director, Bioengineering Innovation & Entrepreneurship (BioENGINE), University of California, Irvine, CA
1/16 – 6/18: Professor, Chemical Engineering and Materials Science, University of California, Irvine, CA
7/15 – 10/15: Visiting Professor, Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan.
9/13 – 9/14: Visiting Professor, Mechanical and Biomedical Engineering Department, City University of Hong Kong, Hong Kong, SAR.
3/08 – 6/13: Associate Dean for Research, Henry Samueli School of Engineering, University of California, Irvine, CA (except July to December 2010).
7/10 – 12/10: Associate Chair for Undergraduate Education, Biomedical Engineering Department University of California, Irvine, CA.
7/09 – 6/10: Interim Chair, Biomedical Engineering Department, University of California, Irvine, CA.
7/05 – 6/06: Interim Chair, Biomedical Engineering Department, University of California, Irvine, CA.
7/03 – 6/05: Associate Chair for Undergraduate Education, Biomedical Engineering Department, University of California, Irvine, CA.
7/99 – 6/02: Program Manager, Microsystems Technology Office, Defense Advanced Research Projects Agency, Arlington, VA.
1/96 – 6/99: Supervisor, MEMS Technology Group, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA.
7/93 – 1/96: Manager, Sensor Research, Ford Microelectronics, Inc., Colorado Springs, CO.
9/90 – 6/93: Research Engineer Senior, Ford Research Laboratory, Dearborn, MI.
9/85 – 8/90: Postgraduate Researcher, University of California at Berkeley, CA.

- 7/82 – 8/84: Associate Engineer/Scientist, IBM Corp., General Products Division, San Jose, CA.
6/81 – 1/82: Member of Technical Staff, TRW, Inc., Redondo Beach, CA.

UC System-Wide, University Campus-Wide, School-Wide, and Department Services

UC System-Wide:

- 7/10 – 6/13,
7/16 - present Subcommittee on International Education, Member (Chair since 7/2021) – Appointed *Pro Bono*. Examine, investigate, and establish policies and procedures for international education programs with several key overseas institutions. The SCIE is a subcommittee of both the Graduate Council and the Council on Educational Policy. It provides academic policy oversight on all matters concerned with the University of California Education Abroad Program (EAP) and other formal educational activities of UCI students abroad, such as UCI Travel-Study and the International Opportunities Program (IOP); faculty exchanges between UCI and foreign universities; and other academic issues involving international education.

UC Irvine Campus-Wide:

- 12/21 – present International Relations Council, Member – Appointed *Pro Bono*. Provides guidance to the campus community related to UCI international activities; helps minimize institutional legal liability; helps UCI achieve its mission by facilitating engagement in appropriate international activities; reviews international activity proposals that may trigger specific risks; and provides advance consultation and approval for international activities or suggest alternatives.
- 5/09 – 12/10: Responsible Conduct of Research (RCR) Task Force, Member – Appointed *Pro Bono*. Developed and deployed the RCR eCourse trainings campus-wide. Plan, coordinate, and implement the Responsible Conduct of Research trainings across UCI campus to meet the new National Science Foundation requirements, similar to those already implemented at the National Institutes of Health.
- 7/08 – 6/09: Research Advisory Committee, Member – Appointed *Pro Bono*. Planned, established and promoted the Year of Science in 2009, with month-by-month event activities. Play an advisory role for campus-wide research-related issues.
- 9/04 – 6/05: Representative, Henry Samueli School of Engineering Divisional Senate, University Academic Senate Assembly – Elected *Pro Bono*. Represented Engineering School in all matters pertaining to Senate Assembly policies, initiatives, and strategies.

School-Wide:

- 5/16 – present: UC Irvine-Dalian University of Technology Joint Institute Planning Committee, member – Appointed *Pro Bono*. Plan, strategize, and recommend structure and process to establish the Joint Institute.

- 3/08 – 6/13: Associate Dean for Research – Appointed compensated. Served the school by providing leadership and management of the school research enterprise (except a 6-month pause 7/10 – 12/10).
- 3/06 – 2/08: School-wide Academic Planning Committee, member – Appointed *Pro Bono*. Planned, strategized, and recommended 5-year academic plans.
- 7/03 – 6/05: Undergraduate Studies Committee, Member – Appointed *Pro Bono*. Examined, evaluated, and implemented enhancement to undergraduate curricula.

Biomedical Engineering Department:

- 7/21 – present: Director, Bioengineering Innovation & Entrepreneurship (BioENGINE) – lead, promote, expand, and implement initiatives for innovation and rapid technology transfers, education components in entrepreneurship at both graduate and undergraduate levels.
- 7/21 – present: Faculty Director, M.Eng. Program BME Concentration – direct and manage the curriculum, instructions, and the entrepreneurial capstone projects for the BME Concentration of the M.Eng. Program.
- 7/20 – present: Committee on Graduate Education, BME – Appointed *Pro bono*. Manage admission, develop and implement graduate curriculum and student learning experience.
- 11/17 – 9/18: Chair, Committee on Faculty Search, BME – Appointed *Pro bono*. Lead the search for tenure-track faculty on Devices for Precision Medicine.
- 7/14 – 6/20: Committee on Undergraduate Education, BME – Appointed *Pro bono*. Develop and implement undergraduate curriculum and student learning experience.
- 7/10 – 12/10: Associate Chair for Undergraduate Education – Appointed *Pro bono*. Developed and implemented undergraduate curriculum and student learning experience.
- 7/09 – 6/10: Interim Chair – Appointed compensated. Lead and manage the Biomedical Engineering Department.
- 7/07 – 6/09: Search Committee for Director of Edwards Lifesciences Center, Member, Appointed *Pro Bono*. Screened, down-selected, and interviewed 9 qualified candidates. Selected the founding director for the center.
- 7/06 – 6/09: ABET Accreditation, Lead Faculty – Appointed with teaching release. The BME department was accredited for the first time through 2013.
- 7/05 – 6/06: Interim Chair – Appointed compensated. Lead and manage the Biomedical Engineering Department.
- 7/03 – 6/05: Associate Chair for Undergraduate Education – Appointed *Pro bono*. Developed and implemented undergraduate curriculum and student learning experience.

Consulting:

12/15 – Present: Consultant, Spinal Singularity, Inc., San Clemente, CA.
6/05 – 3/10: Member, Scientific Advisory Board, Institute of Microelectronics, Singapore.
4/08 – 5/08: Consultant, Primary Insight, Inc., New York, NY.
1/04: Member, Science and Engineering Research Council Review Panel, Singapore.
11/02: Member, Science and Engineering Research Council Review Panel, Singapore.
7/02 – 7/04: Member, Scientific Advisory Board, Institute of Materials Research and Engineering, Singapore.
8/02 – 7/04: Member, Scientific Advisory Board, Science and Engineering Research Council, Singapore.
8/02 – 10/03: Consultant, Defense Advanced Research Projects Agency, Arlington, VA.
8/02 – 7/03: Consultant, Discera, Inc., Ann Arbor, MI.
3/97 – 2/98: Consultant, Irvine Sensors Corp., Costa Mesa, CA.

Awards, Honors, and Biographical listings:

NASA Jet Propulsion Laboratory NOVA Award in Recognition of Effective Leadership (1997)
Engineering Faculty of the Year (2005, 2013, and 2019)
Chancellor's Award for Excellence in Undergraduate Research (2006)
Fariborz Maseeh Outstanding Faculty Teaching Award (2010)

Professional Association Memberships:

Senior Member, the Institute of Electrical and Electronics Engineers (IEEE)
Founding Chair, Orange County Chapter, IEEE Engineering in Medicine and Biology Society (EMBS)
Fellow, the Institute of Physics (IOP)
Chartered Physicist, the Institute of Physics (IOP)
Fellow, American Institute for Medical and Biological Engineering (AIMBE)
Member, Biomedical Engineering Society (BMES)

Professional Service and Activities:

- [S71] General Chair, IEEE 4th International Conference on Nanoscience and Technology (IEEE ICNST), Virtual, June 26 – 28, 2021.
- [S70] Member, Technical Program Committee, IEEE Sensors 2019 Conference, Montreal, Canada, October 27 – 30, 2019.
- [S69] Member, Technical Program Committee, IEEE 12th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Los Angeles, CA, USA, April 9 – 12, 2017.
- [S68] Member, Technical Program Committee and Section Chair, IEEE 10th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Xi'an, China, April 7 – 11, 2015.
- [S67] Member, Engineering Panel, Research Assessment Exercise, University Grants Committee, Hong Kong, SAR, China, January – August, 2014.
- [S66] Session Chair and Invited Keynote Speaker, 3rd Annual World Congress of Advanced Materials 2014 (WCAM 2014), Chongqing, China, June 16 – 19, 2014.
- [S65] Member, Technical Program Committee, IEEE 9th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Waikiki, HI, USA, April 13 – 16, 2014.

- [S64] Session Chair and Keynote Speaker, 2013 7th IEEE International Conference on Nano/Molecular Medicine and Engineering (IEEE-NANOMED 2013), Phuket, Thailand, November 10 – 13, 2013.
- [S63] Member, Organizing Committee, IEEE Sensors 2013 Conference, Baltimore, MD, USA, November 3 – 6, 2013.
- [S62] Keynote Speaker and Section Chair, BIT 2nd Annual World Congress on Advanced Materials (WCAM 2013), Suzhou, China, June 5 – 7, 2013.
- [S61] Member, Technical Program Committee, IEEE 8th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Suzhou, China, April 7 – 10, 2013.
- [S60] Member, Organizing Committee, 2012 6th IEEE International Conference on Nano/Molecular Medicine and Engineering (IEEE-NANOMED 2012), Bangkok, Thailand, November 4 – 7, 2012.
- [S59] Co-Chair, Technical Program Committee, 2012 6th International Symposium on Medical Information and Communication Technology (ISMICT 2012), La Jolla, CA, USA, March 26 – 29, 2012.
- [S58] Member, Technical Program Committee, IEEE 7th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Kyoto, Japan, March 5 – 8, 2012.
- [S57] Member, International Advisory Committee, 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2011), Beijing, China, June 5 – 9, 2011.
- [S56] Member, Technical Program Committee, IEEE 6th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Kaohsiung, Taiwan, February 20 – 23, 2011.
- [S55] Member, Technical Program Committee, IEEE 5th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Xiamen, China, January 20 – 23, 2010.
- [S54] Member, Technical Program Committee, IEEE 4th International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Shenzhen, China, January 5 – 8, 2009.
- [S53] Session Chair and Invited Speaker, 13th International Conference on Biomedical Engineering (13ICBME), Singapore, December 3 – 6, 2008.
- [S52] Member, Technical Program Committee, ASME 2008 3rd Frontiers in Biomedical Devices Conference, Irvine, CA, USA, June 18 – 20, 2008.
- [S51] General Chair, 3rd IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Sanya, China, January 6 – 9, 2008.
- [S50] Member, Technical Program Committee, SPIE International Symposium on Microelectronics, MEMS, and Nanotechnology, Canberra, Australia, December 4 – 7, 2007.
- [S49] Member, Technical Program Committee, SPIE Photonic Asia Symposium on MEMS/MOEMS, Beijing, China, November 11 – 15, 2007.
- [S48] Program Track Co-Chair, Device Technologies, Annual Biomedical Engineering Society Meet., Los Angeles, CA, September 26 – 29, 2007.
- [S47] Oversea Proposal Reviewer, Canada Natural Sciences and Engineering Research Council, January 2006, June 2006, July 2007.

- [S46] Chair, Best Paper Award Committee, 2nd IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Bangkok, Thailand, January 16 – 19, 2007.
- [S45] Member, Proposal Review Panel, NSF 05-610 Nanoscale Interdisciplinary Research Teams Program, March 23, 24, 2006.
- [S44] Oversea Proposal Reviewer, Singapore Agency for Science, Technology and Research (A-STAR), March 2006.
- [S43] Member, Technical Program Committee, SPIE International Symposium on MEMS/MOEMS, San Jose, CA, January 21 – 27, 2006.
- [S42] Member, Proposal Review Panel, NSF 05-7564 Integrative, Hybrid, and Complex Systems Program, January 12, 13, 2006.
- [S41] Co-sponsor, 2nd Annual UC Irvine Medical Device Conference, Irvine, CA, November 18, 2005.
- [S40] Chair, Technical Program Committee, 4th IEEE International Conference on Sensors, Irvine, CA, October 31 – November 3, 2005.
- [S39] Member, Technical Program Committee, First International Conference on Complex Medical Engineering (CME 2005), Takamatsu, Japan, May 15 – 18, 2005.
- [S38] Member, Technical Program Committee, SPIE International Symposium Photonics West 2005, San Jose, CA, January 22 – 27, 2005.
- [S37] Member, Executive Committee, CANEUS 2004 Conference on Micro-Nano-Technologies for Aerospace Applications, Monterey, CA, October 30 – November 5, 2004.
- [S36] Co-chair, Technical Program Committee, Third IEEE International Conference on Sensors, Vienna, Austria, October 24 – 27, 2004.
- [S35] Guest Editor, IEEE Sensors Journal, Special Issue on Microsensors and Microactuators: Technology and Applications, Vol. 4, August 2004.
- [S34] Member, Technical Program Committee, IEEE Fourth Symposium on Bioinformatics and Bioengineering (BIBE 2004), Taichung, Taiwan, May 19 – 21, 2004
- [S33] Panel speaker, NSF Workshop on Control and System Integration of Micro-and Nano-Scale Systems, Arlington, VA, March 29, 2004.
- [S32] Member, Technical Program Subcommittee and Session Co-chair, IEEE International Electron Device Meet., Washington, D.C., December 7 – 10, 2003.
- [S31] Member, Technical Program Committee, Second IEEE International Conference on Sensors, Toronto, Canada, October 22 – 24, 2003.
- [S30] Member, Proposal Review Panel, NSF 03-512 Sensors and Sensor Networks Program, May 29 – 30, 2003.
- [S29] Reviewer, IEEE Transactions of Biomedical Engineering: 2003 – present.
- [S28] Member, Technical Program Committee, SPIE International Symposium Smart materials, Nano- and Micro- Smart Systems, Melbourne, Australia, December 16 – 18, 2002.
- [S27] Member, International Advisory Board, International Workshop on Micro Power Generation, Tsukuba, Japan, November 12 – 13, 2002.

- [S26] Co-chair, International Program Committee and Session Chair, International Conference on Micro and Nano Systems, Kunming, China, August 11 – 14, 2002.
- [S25] Co-organizer, Microelectromechanical Systems (MEMS) for Test & Evaluation (T&E) Instrumentation Workshop, Annapolis, MD, June 18 – 20, 2002.
- [S24] Member, Technical Program Committee, First IEEE International Conference on Sensors, Orlando, FL, June 12 – 14, 2002.
- [S23] Member, Scientific Advisory Board, First International Conference on Nanoscale/Molecular Mechanics, Maui, HI, May 12 – 18, 2002.
- [S22] Co-sponsor, Workshop on Frontiers in Electronics, St. Croix, US Virgin Islands, January 6 – 11, 2002.
- [S21] Member, Technical Program Committee, First International Workshop on Space and Microsystems, San Francisco, CA, November 27 – 28, 2001.
- [S20] Session Co-chair, “Fabrication and Testing of MEMS,” 2001 ASME International Mechanical Engineering Congress & Exposition, New York, NY, November 11–16, 2001.
- [S19] Session Co-sponsor, “MEMS Components and Applications for Industry, Automobiles, Aerospace and Communication,” 2001 SPIE International Symposium on Micromachining and Microfabrication, San Francisco, CA, October 22 – 25, 2001.
- [S18] Sponsor and Co-chair, DARPA/NIST Workshop on Chip-Scale Atomic Clock, Boulder, CO, March 22 – 23, 2001.
- [S17] Co-sponsor, DARPA Workshop on Nanotechnology for Biodetection/Bioassay and Delivery of Therapeutics to Individual Cells, Scottsdale, AZ, December 12 – 13, 2000.
- [S16] Co-organizer and co-chair, 2000 NSF Workshop on Manufacturing of Micro-Electro-Mechanical Systems, Orlando, FL, November 7, 2000.
- [S15] Sponsor, DARPA MEMS Reliability Meet., Arlington, VA, October 26–27, 2000.
- [S14] Sponsor and Co-chair, DARPA/NASA/AFRL Workshop on Picosatellites, Pasadena, CA, July 24, 2000.
- [S13] Session Chair, Advanced Technology Workshop on Electronic Parts and Packaging for Space and Aeronautic Applications, International Microelectronics and Packaging Society, Washington, DC, May 22 – 24, 2000.
- [S12] Organizer and Chair, DARPA MEMS Industry Study Team Meet., Chicago, IL, April 19, 2000.
- [S11] Co-sponsor and Co-organizer, NIST Workshop on Nanotribology: Critical Assessment and Research Needs, Gaithersburg, MD, March 13 – 15, 2000.
- [S10] Organizer and Chair, DARPA MEMS Industry Study Team Meet., Chicago, IL, October 21, 1999.
- [S09] Organizer, DARPA Workshop on NEMS for Biotechnology Applications, Chicago, IL, October 19–20, 1999.
- [S08] Member, Scientific Advisory Board, NASA Advanced Environmental Monitoring and Control Program: 1999 – 2001
- [S07] Associate Editor, Micro and Nano Letters, 1/2018 – present

- [S06] Associate Editor and Member of Editorial Board, IEEE Sensors Journal, 5/2006 – present
- [S05] Oversea Reviewer, Research Grants Council, Hong Kong, SAR, China: 1995 – present
- [S04] Reviewer, Sensors and Actuators A: Physical: 1994 – present
- [S03] Reviewer, IEEE Journal of Microelectromechanical Systems: 1994 – present
- [S02] Member, Editorial Board, Journal of Micromechatronics: 1994 – 2006
- [S01] Member, Editorial Board, Journal of Micromechanics and Microengineering: 1994 – present

Publications:

Refereed journal articles:

- [J43] L. Pu, T. Liu, W. C. Tang, C. Song, M. Jin, L. Ren, T. Li, and Z. Liang, “Greater prefrontal activation during sitting toe tapping predicts severer freezing of gait in Parkinson’s disease: an fNIRS study,” *Cerebral Cortex*, 26 Mar. 2022, DOI: 10.1093/cercor/bhac114.
- [J42] S. Zhang, X. Guo, S. Yuan, Z. Jin, and W. C. Tang, “Insight on the structural changes of glass-ceramics during nanoindentation derived from reactive force-field-based molecular dynamic simulations,” *Appl. Surf. Sci.*, Vol. 571, 1 Jan. 2022, DOI: 10.1016/j.apsusc.2021.151375.
- [J41] Y. Xue, A. W. Browne, W. C. Tang, J. Delgado, B. T. McLelland, G. Nistor, J. T. Chen, K. Chew, N. Lee, H. S. Keirstead, and M. J. Seiler, “Retinal organoids long-term functional characterization using two-photon fluorescence lifetime and hyperspectral microscopy,” *Front. Cell. Neurosci.*, 10 Dec. 2021, DOI: 10.3389/fncel.2021.796903.
- [J40] Y. Chen, J. Chu, W. C. Tang, R. Zhang, M. Zhao, and B. Xin, “Study of the spatial scale stability of Mueller matrix parameters for textural characterization of biological tissues,” *J. Biophotonics*, 25 Nov. 2021, DOI: 10.1002/jbio.202100269.
- [J39] S. McAleer, A. Fast, Y. Xue, M. J. Seiler, W. C. Tang, M. Balu, P. Baldi, and A. W. Browne, “Deep learning-assisted multiphoton microscopy to reduce light exposure and expedite imaging in tissues with high and low light sensitivity,” *Transl. Vis. Sci. Technol.*, Vol. 10, No. 30, Oct. 2021, DOI: 10.1167/tvst.10.12.30.
- [J38] Y. S. Vakilna, W. C. Tang, B. C. Wheeler, and G. J. Brewer, “The flow of axonal information between hippocampal subregions. 1. Feedforward and feedback network spatial dynamics underpinning emergent information processing,” *Frontiers Neural Circ.*, Aug. 2021, DOI: 10.3389/fncir.2021.660837.
- [J37] Y. Xue, M. J. Seiler, W. C. Tang, J. Y. Wang, J. Delgado, B. T. McLelland, G. Nistor, H. S. Keirstead, and A. W. Browne, “Retinal organoids on-a-chip: a micro-millifluidic bioreactor for long-term organoid maintenance,” *Lab Chip*, Jul. 2021, DOI: 10.1039/D1LC00011J.
- [J36] Y. Chen, W. C. Tang, J. Chu, R. Zhang, and S. Li, “Error analysis and optimization of a sky full-polarization imaging detection system,” *J. Photogrammetric Engineering & Remote Sensing*, Vol. 87, No. 4, Apr. 2021, DOI:10.14358/PERS.87.4.273.
- [J35] J. Liu, M. Li, W. C. Tang, and S. M. N. Islam, “A cyber physical system crowdsourcing inference method based on tempering: An advancement in artificial intelligence algorithms,” *J. Wireless Comm. Mobile Comp.*, Vol. 2021, Feb. 2021, DOI: 10.1155/2021/6618980.

- [J34] L. Pu, N. K. Qureshi, J. Ly, B. Zhang, F. Cong, W. C. Tang, and Z. Liang, "Therapeutic benefits of music-based synchronous finger tapping in Parkinson's disease—an fNIRS study protocol for randomized controlled trial in Dalian, China," *Trials*, Vol. 21, No. 864, Oct 2020, DOI: 10.1186/s13063-020-04770-9.
- [J33] S. Zhang, X. Guo, Z. Jin, R. Kang, D. Guo, and W. C. Tang, "Surface morphologies and corresponding hardness evolution during nanoscratching," *J. Mater. Res. Technol.*, Vol. 9, pp. 3179-3189. Nov. 2020, DOI: 10.1016/j.jmrt.2020.01.064.
- [J32] Y. Hui, Y. Liu, W. C. Tang, D. Song, M. Madou, S. Xia, and T. Wu, "Determination of mercury(II) on a centrifugal microfluidic device using ionic liquid dispersive liquid-liquid microextraction," *Micromachines*, Vol. 10, No. 523, Aug. 2019, DOI: 10.3390/mi10080523.
- [J31] Y. Hui, C. Xiong, C. Bian, S. Gui, J. Tong, Y. Li, C. Gao, Y. Huang, W. C. Tang, and S. Xia, "Temperature-controlled ionic liquid dispersive liquid-liquid microextraction combined with fluorescence detection of ultra-trace Hg²⁺ in water," *Anal. Methods*, Vol. 11, pp. 2669 – 2676, Apr. 2019, DOI: 10.1039/C9AY00029A.
- [J30] C. E. King, C. M. Hoo, W. C. Tang, and M. Khine, "Introducing entrepreneurship into a biomedical engineering capstone course at the University of California, Irvine," *Technol. Innov.*, Vol. 20, pp. 179 – 195, 2019, DOI: 10.21300/20.3.2019.179.
- [J29] Y.-H. Hsu, C.-H. Chan, and W. C. Tang, "Alignment of multiple electrospun piezoelectric fiber bundles across serrated gaps at an incline: A method to generate textile strain sensors," *Nature: Sci. Rep.*, 13 Nov. 2017, DOI: 10.1038/s41598-017-15698-7.
- [J28] C. Wu, T. G. Lin, Z. Zhan, Y. Li, S. C. H. Tung, W. C. Tang, and W. J. Li, "Fabrication of all-transparent polymer-based and encapsulated nanofluidic devices using nano-indentation lithography," *Nature: Microsyst. Nanoengin.*, 27 Mar. 2017, DOI: 10.1038/micronano.2016.84.
- [J27] B. Reddy, Jr., E. Codner, R. E. Hainley, and W. C. Tang, "Design and fabrication of field-emission tips with self-aligned gates," *Micro Nano Lett.*, Vol. 11, No. 9, pp. 524 – 527, 2016, DOI: 10.1049/mnl.2016.0174.
- [J26] R. Sahyouni, J. Bhatt, H. R. Djalilian, W. C. Tang, J. C. Middlebrooks, and H. W. Lin, "Selective stimulation of facial muscles with a penetrating electrode array in the feline model," *Laryngoscope*, 16 Jun. 2016, DOI: 10.1002/lary.26078.
- [J25] L. Esfandiari, M. Paff, and W. C. Tang, "Initial studies of mechanical compression on neurogenesis with neonatal neural stem cells," *Nanomed.: Nanotech., Biol., and Med.*, Vol. 8, No. 4, pp. 415 – 418, May 2012, DOI: 10.1016/j.nano.2012.01.001.
- [J24] Y.-H. Hsu and W. C. Tang, "Microbioreactor designed for integration with piezoelectric transducers for cellular diagnostics," *J. Microfluidics Nanofluidics*, Vol. 11, No. 4, pp. 459 – 468, Oct. 2011, DOI: 10.1007/s10404-011-0811-8.
- [J23] Y.-H. Hsu, P. Lu, J. L. Coleman, and W. C. Tang, "A microfluidic platform to isolate avian erythrocytes infected with *Plasmodium gallinaceum* malaria parasites based on surface morphological changes," *Biomed. Microdevices*, Vol. 13, No. 6, pp. 995 – 1004, Jul. 2011, DOI: 10.1007/s10544-011-9569-8.
- [J22] H. C. Wong and W. C. Tang, "Computational study of local and global ECM degradation and the effects on cell speed and cell-matrix tractions," *J. Nano Communication Networks*, Vol. 2, pp. 119 – 124, Jun. 2011, DOI: 10.1016/j.nancom.2011.05.005.]

- [J21] H. C. Wong and W. C. Tang, "Finite element analysis of the effects of focal adhesion mechanical properties and substrate stiffness on cell migration," *J. Biomechanics*, Vol. 44, pp. 1046 – 1050, Apr. 2011, DOI: 10.1016/j.jbiomech.2011.02.004.
- [J20] Y.-H. Hsu and W. C. Tang, "Microfabricated piezoelectric transducer platform for mechanical characterization of cellular events," *Smart Mater. Struct.*, Vol. 18, No. 9, on-line 095014, Jul. 2009, DOI: 10.1088/0964-1726/18/9/095014.
- [J19] G. Y. Yang, Y.-H. Wen, C. Földy, W. C. Tang, and I. Soltesz, "Sensor for stiffness measurements within the adult rat hippocampus," *IEEE Sensors J.*, Vol. 8, No. 11, pp. 1894 – 1899, Nov. 2008, DOI: 10.1109/JSEN.2008.2006472.
- [J18] Y.-H. Hsu, J. Lin, and W. C. Tang, "RF sputtered piezoelectric zinc oxide thin film for transducer application," *J. Mater. Sci: Mater. Electron.*, Vol. 19, No. 7, pp. 653 – 661, 2008, DOI: 10.1007/s10854-007-9415-1.
- [J17] G. Y. Yang, G. Johnson, W. C. Tang, and J. H. Keyak, "Parylene-based strain sensors for bone," *IEEE Sensors J.*, Vol. 7, No. 12, pp. 1693 – 1697, Dec. 2007, DOI: 10.1109/JSEN.2007.909923.
- [J16] W. Pang, L. Yan, H. Zhang, H. Yu, E. S. Kim, and W. C. Tang, "Femtogram mass sensing platform based on lateral extensional mode piezoelectric resonator," *Appl. Phys. Lett.*, Vol. 88, Is. 24, 243503, Jun. 2006, DOI: 10.1063/1.2213975.
- [J15] L. Yan, W. Pang, E.-S. Kim, and W. C. Tang, "Single-chip multiple-frequency VHF low-impedance micro piezoelectric resonators," *IEEE Electron. Dev. Lett.*, Vol. 27, No. 4, pp. 246 – 248, Mar. 2006, DOI: 10.1109/LED.2006.871881.
- [J14] L. Yan, W. Pang, E.-S. Kim, and W. C. Tang, "Piezoelectrically transduced low-impedance microelectromechanical resonators," *Appl. Phys. Lett.*, Vol. 87, Is. 15, 154103, 2005, DOI: 10.1063/1.2089152.
- [J13] A. M. Shkel, C. Liu, and W. C. Tang, "Editorial," *IEEE Sensors J.*, Vol. 4, No. 4, pp. 387 – 389, 2004.
- [J12] S. Li, Z. Yu, S.-F. Yen, W. C. Tang, and P. J. Burke, "Carbon nanotube transistor operation at 2.6 GHz," *Nano Lett.*, Vol. 4, No. 4, pp. 753 – 756, Mar. 2004, DOI: 10.1021/nl0498740.
- [J11] W. C. Tang and A. P. Lee, "Defense applications of MEMS," *MRS Bulletin*, Vol. 26, No. 4, pp. 318 – 319, Apr. 2001.
- [J10] W. C. Tang and A. P. Lee, "Military Applications of Microsystems", *The Industrial Physicist*, the American Institute of Physics, pp. 26 – 29, Feb. 2001.
- [J09] I. Chakraborty, W. C. Tang, D. P. Bame and T. K. Tang, "MEMS micro-valve for space applications," *Sensors and Actuators A: Physical*, Vol. 83, no. 1–3, pp. 188 – 193, May 2000, DOI: 10.1016/S0924-4247(99)00382-9.
- [J08] A. A. Tseng, W. C. Tang, Y.-C. Lee, and J. Allen, "NSF 2000 workshop on manufacturing of micro-electro-mechanical systems," in *J. Mater. Process. Manufact. Sci.*, S. I. Güçeri, Ed., vol. 8, no. 4, pp. 292 – 361, Mar. 2000.
- [J07] S. E. Vargo, E. P. Muntz, G. R. Shiflett, and W. C. Tang, "Knudsen compressor as a micro-and macroscale vacuum pump without moving parts or fluids," *J. Vac. Sci. Technol.*, Vol. A17, No. 4, pp. 2308 – 2313, Jul. 1999, DOI: 10.1116/1.581765.

- [J06] C. I. Lee, A. H. Johnston, W. C. Tang, C. E. Barnes, and J. Lyke, "Total dose effects on microelectromechanical systems (MEMS): accelerometers," *IEEE Trans. Nucl. Sci.*, Vol. NS-43, No. 6, pp. 3127 – 3132, Dec. 1996, DOI: 10.1109/23.556915.
- [J05] C. H. Mastrangelo, X. Zhang, and W. C. Tang, "Surface-micromachined capacitive differential pressure sensor with lithographically defined silicon diaphragm," *IEEE/ASME J. Microelectromechanical Syst.*, Vol. 5, pp. 98 – 105, Jun. 1996, DOI: 10.1109/84.506197.
- [J04] X. Zhang and W. C. Tang, "Viscous air damping in laterally driven microresonators," *Sens. Mater.*, Vol. 7, pp. 415 – 430, 1995.
- [J03] W. C. Tang, M. G. Lim, and R. T. Howe, "Electrostatic-comb drive levitation and control methods," *IEEE/ASME J. Microelectromechanical Syst.*, Vol. 1, pp. 170 – 178, Dec. 1992, DOI: 10.1109/JMEMS.1992.752508.
- [J02] W. C. Tang, T.-C. Nguyen, M. W. Judy, and R. T. Howe, "Electrostatic-comb drive for lateral polysilicon resonators," *Sensors and Actuators A: Physical*, Vol. 21, Is. 1-3 pp. 328 – 331, Feb. 1990, DOI: 10.1016/0924-4247(90)85065-C.
- [J01] W. C. Tang, T.-C. Nguyen, and R. T. Howe, "Laterally driven polysilicon resonant microstructures," *Sensors and Actuators*, Vol. 20, pp. 25 – 32, 15 Nov. 1989, DOI: 10.1016/0250-6874(89)87098-2.

Books, book chapters and articles:

- [B09] W. C. Tang, "Chapter 18. Advanced Biotechnology," in L. S. Chan and W. C. Tang, Eds., *Engineering-Medicine: Principles and Applications of Engineering in Medicine, 1st Ed.* CRC Press: Boca Raton, Florida, 2019, pp. 201 – 218, DOI: 10.1201/9781351012270..
- [B08] L. S. Chan and W. C. Tang, "Chapter 17. System Biology: An Introduction," in L. S. Chan and W. C. Tang, Eds., *Engineering-Medicine: Principles and Applications of Engineering in Medicine, 1st Ed.* CRC Press: Boca Raton, Florida, 2019, pp. 180 – 200, DOI: 10.1201/9781351012270..
- [B07] W. C. Tang, "Chapter 8. Design Optimization," in L. S. Chan and W. C. Tang, Eds., *Engineering-Medicine: Principles and Applications of Engineering in Medicine, 1st Ed.* CRC Press: Boca Raton, Florida, 2019, pp. 66 – 70, DOI: 10.1201/9781351012270..
- [B06] W. C. Tang, "Chapter 4. Engineering Principles Overview," in L. S. Chan and W. C. Tang, Eds., *Engineering-Medicine: Principles and Applications of Engineering in Medicine, 1st Ed.* CRC Press: Boca Raton, Florida, 2019, pp. 31 – 36, DOI: 10.1201/9781351012270..
- [B05] L. S. Chan and W. C. Tang, Eds., *Engineering-Medicine: Principles and Applications of Engineering in Medicine, 1st Ed.* CRC Press: Boca Raton, FL, 2019, DOI: 10.1201/9781351012270.
- [B04] J. Mueller, S. Vargo, D. Bame, I. Chakraborty, and W. C. Tang, "Chapter 17: Micro-isolation valve concept: initial results of a feasibility study," in M. M. Micci and A. D. Ketsdever, Eds., *Micropropulsion for Small Spacecraft*, Reston: American Institute of Aeronautics and Astronautics, Inc., 2000, pp 399 – 422.
- [B03] J. Mueller, D. Pyle, I. Chakraborty, R. Ruiz, W. C. Tang, C. Marrese, and R. Lawton, "Chapter 12: Electric breakdown characteristics of silicon dioxide films for use in microfabricated ion engine accelerator grids," in M. M. Micci and A. D. Ketsdever, Eds., *Micropropulsion for Small Spacecraft*, Reston: American Institute of Aeronautics and Astronautics, Inc., 2000, pp 303 – 334.

- [B02] J. Mueller, I. Chakraborty, D. Bame, and W. C. Tang, "Chapter 8: Vaporizing liquid microthruster concept: preliminary results of initial feasibility studies," in M. M. Micci and A. D. Ketsdever, Eds., *Micropropulsion for Small Spacecraft*, Reston: American Institute of Aeronautics and Astronautics, Inc., 2000, pp 215 – 230.
- [B01] C. H. Mastrangelo and W. C. Tang, "Chapter 2: Sensor technology," in S. M. Sze, Ed., *Semiconductor Sensors*, New York: John Wiley & Sons, Inc., 1994, pp 17 – 95.

Refereed archival conference proceedings

- [C85] Y. Xue, W. C. Tang, J. Chen, K. Chew, M. J. Seiler, and A. W. Browne, "Retinal organoids cultured by microfluidic bioreactor demonstrated functionality measured by a high-density microelectrode array system," *Poster & Abstract, Assoc. Res. Vis. Ophthal. Annu. Meet. (ARVO 2022)*, Denver, CO, 1 – 4 May 2022, VIRTUAL, May 11 – 12, 2022.
- [C84] M. J. Seiler, Y. Xue, B. Lin, J. C. Martinez-Camarillo, R. Sims, J. Delgado, D. Zhu, B. McLelland, G. Nistor, H. S. Keirstead, W. C. Tang, M. S. Humayun, A. Browne, and B. B. Thomas, "Non-invasive testing and sheet transplantation of retinal organoids to rat models of retinal degeneration," *Oral Presentation & Abstract, Retinal Cell and Gene Therapy Innovation Summit*, Denver, CO, 29 Apr. 2022.
- [C83] Y. Xue, W. C. Tang, J. Chen, K. Chew, M. J. Seiler, and A. W. Browne, "Retinal organoids cultured by microfluidic bioreactor demonstrated functionality measured by a high-density microelectrode array system," *Poster & Abstract, The 13th Annu. Emerging Scientists Symp., Research & Education in Memory Impairments & Neurological Disorder*, Irvine, CA, 28 Apr. 2022.
- [C82] M. J. Seiler, B. Lin, Y. Xue, J. C. Martinez-Camarillo, D. Zhu, R. Sims, B. T. McLelland, G. Nistor, W. C. Tang, M. S. Humayun, H. S. Keirstead, A. Browne, and B. B. Thomas, "Transplantation of retinal organoid sheets alone or with RPE sheets to rat models of retinal degeneration," *Poster & Abstract, The XIXth Int. Symp. Retinal Degeneration Meet. (RD 2021)*, Nashville, TN, 28 Sep. – 2 Oct. 2021.
- [C81] Y. Xue, M. J. Seiler, W. C. Tang, J. Y. Wang, B. McLelland, G. Nistor, H. Keirstead, and A. W. Browne, "Retinal organoids on-a-chip: a 3D printed micro-millifluidic bioreactor for long-term retinal organoid maintenance," *Poster & Abstract, Int. Soc. Stem Cell Res. Annu. Meet. (ISSCR 2021)*, VIRTUAL, 21 – 26 Jun. 2021.
- [C80] Y. Xue, B. McLelland, J. Garcia, M. Rouhizadeh, V. Giang, G. Nistor, H. Keirstead, W. C. Tang, M. J. Seiler, and A. W. Browne, "Analysis of retinal organoids long-term development by functional imaging and realtime polymerase chain reaction," *Poster & Abstract, Assoc. Res. Vis. Ophthal. Annu. Meet. (ARVO 2021)*, VIRTUAL, 1 – 7 May 2021.
- [C79] Y. Xue, B. McLelland, G. Nistor, H. Keirstead, W. C. Tang, M. J. Seiler, and A. W. Browne, "Long-term Quantitative Analysis of Intrinsic Fluorophores in Retinal Organoids by 2-Photon Excitation Microscopy," *Poster & Abstract, Assoc. Res. Vis. Ophthal. Annu. Meet. (ARVO 2020)*, Baltimore, MD, 3 – 7 May 2020.
- [C78] Y. Xue, T. Kalakuntla, B. McLelland, G. Nistor, H. Keirstead, A. W. Browne, W. C. Tang, and M. J. Seiler, "Characterization of retinal organoids by 2-photon microscopy prior to transplantation into retinal degenerate rate models," *Poster & Abstract, Int. Soc. For Stem Cell Res. Annu. Meet. (ISSCR 2019)*, Los Angeles, CA, 26 – 29 Jun. 2019.

- [C77] J. Liu, W. C. Tang, Y. Chen, and M. Li, "A novel crowd-sourcing inference method," *Proc. 2019 15th Int. Wireless Comm. Mobile Comp. Conf. (IWCMC 2019)*, Tangier, Morocco, 24 – 28 Jun. 2019, DOI: 10.1109/IWCMC.2019.8766596.
- [C76] A. W. Browne, Y. Xue, T. Kalakuntla, W. C. Tang, L. Malacrida, T. F. Schilling, J. E. Hall, E. Gratton, and I. Vorontsova, "In vivo analysis reveals a switch in metabolism and oxidative state of zebrafish eyes during development," *Poster & Abstract, Assoc. Res. Vis. Ophthal. Annu. Meet. (ARVO 2019)*, Vancouver, BC, Canada, 28 Apr. – 2 May 2019.
- [C75] T. Kalakuntla, Y. Xue, A. Browne, B. McLelland, G. Nistor, H. Keirstead, W. C. Tang, and M. J. Seiler, "Pre-transplantation analysis of intrinsic fluorophores by 2-photon microscopy to validate suitability of retinal organoids," *Poster & Abstract, Assoc. Res. Vis. Ophthal. Annu. Meet. (ARVO 2019)*, Vancouver, BC, Canada, 28 Apr. – 2 May 2019.
- [C74] C. J. Lee, W. J. Agnew, and W. C. Tang, "Mechanistically modulated cardiomyocyte alignment," *Proc. 2018 22nd Int. Conf. Miniaturized Syst. Chem. Life Sci. (μ TAS 2018)*, Kaohsiung, Taiwan, 11 – 15 Nov. 2018.
- [C73] Z. Siu, W. J. Agnew, B. Chu, J. Wang, L. Chang, and W. C. Tang, "A feasibility study of a ferrofluid derived cardiac energy harvester for micro-pacemaker devices," *Proc. Biomed. Engin. Soc. (BMES) Annu. Meet.*, Atlanta, GA, 17 – 20 Oct. 2018.
- [C72] C. J. Lee, W. J. Agnew, and W. C. Tang, "Micromechanistically modulated cardiomyocyte alignment in vitro," *Proc. 2018 Int. Conf. Nano Sci. & Technol. (ICNST 2018)*, Sapporo, Japan, 24 – 26 Aug. 2018. [Best Oral Presentation Award]
- [C71] K. Cao and W. C. Tang, "Application of wireless power transfer system to a totally implantable heart pump," *Proc. IEEE Wireless Power Transfer Conf.*, Montreal, Canada, 3 – 7 Jun. 2018, DOI: 10.1109/WPT.2018.8639131.
- [C70] K. Zhao, C. J. Lee, W. J. Agnew, S. Lee, and W. C. Tang, "HL-1 cardiomyocyte mechanistic responses to micro-patterned culture environment," *Proc. 10th IEEE Int. Conf. Nano/Molecular Medicine and Engineering*, Macau, China, 30 Oct. – 2 Nov. 2016.
- [C69] Y.-H. Huang, W. C. Tang and Y.-H. Hsu, "Study of cell morphology on SU-8 microfibers," *Proc. Annual Symp. Biomedical Engin. Technol.*, Taipei, Taiwan, 13, 14 Nov. 2015.
- [C68] C.-H. Chan, H. J. Chu, W. C. Tang, and Y.-H. Hsu, "Fabrication of aligned P(VDF-TrFE) piezoelectric nanofiber bundles with electrospinning across serrated gaps," *Proc. 13th Int. Conf. Automation Technol.*, Taipei, Taiwan, 13 – 15 Nov. 2015.
- [C67] C. F. Ruiz, E. M. Kha and W. C. Tang, "A piezoresistive sensor for quantifying cell-induced cantilever deflection," *Proc. 10th IEEE Int. Conf. Nano/Micro Engineered and Molecular Syst.*, Xi'an, China, 7 – 11 Apr. 2015.
- [C66] S. Karunanidhi, M. W. Lum, S. R. Nagurla, and W. C. Tang, "Microfluidic platforms for size-based cell sorting," *Proc. 7th IEEE Int. Conf. Nano/Molecular Medicine and Engineering*, Phuket, Thailand, 10 - 13 Nov. 2013, pp. 27 – 31, DOI: 10.1109/NANOMED.2013.6766310.
- [C65] S. Gupta, A. C. Baker, and W. C. Tang, "Microfluidic platforms for capturing circulating tumor cells," *Proc. 7th IEEE Int. Conf. Nano/Molecular Medicine and Engineering*, Phuket, Thailand, 10 – 13 Nov. 2013, pp. 1 – 4, DOI: 10.1109/NANOMED.2013.6766305.

- [C64] D. Pemba and W. C. Tang, "A multisite neural probe with simultaneous neural recording and drug delivery capabilities," *Proc. 6th Annu. Int. IEEE EMBS Neural Engineering Conf.*, San Diego, CA, 6 – 8 Nov. 2013, pp. 1493 – 1496, DOI: 10.1109/NER.2013.6696228.
- [C63] D. Pemba, W. M. Wong, and W. C. Tang, "SU-8/Silicon hybrid three dimensional intraneural electrode array," *Proc. 6th Annu. Int. IEEE EMBS Neural Engineering Conf.*, San Diego, CA, 6 – 8 Nov. 2013, pp. 295 – 298, DOI: 10.1109/NER.2013.6695930.
- [C62] H. C. Wong and W. C. Tang, "Correlating simulation and experimental data of traction and cell speed as functions of substrate stiffness," *Proc. 11th IEEE Int. Conf. Bioinformatics Bioengineering*, Taichung, Taiwan, 24 – 26 Oct. 2011, pp. 240 – 244, DOI: 10.1109/BIBE.2011.43.
- [C61] H. C. Wong and W. C. Tang, "Effects of ECM degradation rate, adhesion, and drag on cell migration in 3D," in N. A. Abu Osman et al. (Eds.): *BIOMED 2011, IFMBE Proc. 35, 5th Kuala Lumpur Int. Conf. Biomedical Engineering 2011*, Kuala Lumpur, Malaysia, 21 – 23 Jun. 2011, pp. 428 – 431, DOI: 10.1007/978-3-642-21729-6_109.
- [C60] Y.-H. Hsu, J. L. Coleman, and W. C. Tang, "Microfluidic platform for detecting malaria infected avian red blood cells," *Ext. Abs., 12th UC Systemwide Bioengineering Symposium*, Santa Barbara, CA, 13 – 15 Jun. 2011.
- [C59] Y.-H. Hsu, J. L. Coleman, and W. C. Tang, "Surface morphological changes as biomarkers for detecting malaria infected avian erythrocytes," *Ext. Abs., 6th Int. Conf. Microtechnologies in Medicine and Biology*, Lucerne, Switzerland, 4 – 6 May 2011, pp. 116 – 117.
- [C58] Y.-H. Hsu, P. Lu, and W. C. Tang, "Microplatforms for avian malaria studies," *Proc. 6th Annual IEEE Int. Conf. Nano/Micro Engineered and Molecular Systems*, Kaohsiung, Taiwan, 20 – 23 Feb. 2011, pp. 355 – 358, DOI: 10.1109/NEMS.2011.6017364.
- [C57] L. Esfandiari and W. C. Tang, "PDMS stretchable platform for the studies of mechanical compression on neurogenesis," *Proc. 4th IEEE Int. Conf. Nano/Mol. Med. Engin. (IEEE-NanoMed)*, Hong Kong & Macau, China, 5 – 9 Dec. 2010, DOI: 10.1109/NANOMED.2010.5749799.
- [C56] H. C. Wong and W. C. Tang, "Effects of friction coefficient and receptor number on cell-substrate interactions during migration," *Proc. ASME 2010 Summer Bioengin. Conf. (SBC 2010)*, Naples, FL, 16 – 19 Jun. 2010, CD-ROM.
- [C55] Y.-H. Hsu and W. C. Tang, "Integrated microbioreactor with piezoelectric transducer array for cellular diagnostics," *Proc. 13th Int. Conf. Miniaturized Syst. Chem. Life Sci. (μ TAS)*, Jeju, Korea, 1 – 5 Nov. 2009, pp. 1817 – 1819.
- [C54] H. C. Wong, K. N. Cho, and W. C. Tang, "Bending of a stented atherosclerotic artery," *Proc. COMSOL Conf. 2009*, 8 – 10 Oct. 2009, CD-ROM.
- [C53] J. A. Ayers, W. C. Tang, and Z. Chen, "Paraffin actuated micromirror for endoscopic OCT," *Proc. 4th Frontiers in Biomedical Devices Conf.*, Irvine, CA, 8 – 9 Jun. 2009, Paper #83051, CD-ROM.
- [C52] Y.-H. Hsu and W. C. Tang, "Microfabricated piezoelectric transducer platform for mechanical characterization of cellular events," *Proc. 19th Int. conf. Adaptive Structures and Technol.*, Ascona, Switzerland, 6 – 9 Oct. 2008, CD-ROM. [Best Student Paper Award]
- [C51] T. Nakano, Y.-H. Hsu, W. C. Tang, T. Suda, D. Lin, T. Koujin, T. Haraguchi, and Y. Hiraoka, "Microplatform for intercellular communication," *Proc. 3rd IEEE Int. Conf. Nano/Micro Engin.*

Molecular Syst., Sanya, China, 6 – 9 Jan. 2008, pp. 476 – 479, DOI: 10.1109/NEMS.2008.4484375.

- [C50] Y.-H. Hsu, J. Lin, and W. C. Tang, "Optimization and characterization of RF sputtered piezoelectric zinc oxide thin film for transducer applications," *Proc. IEEE Ultrasonics Symp. 2007*, 28 – 31 Oct. 2007, New York, NY, pp. 2393 – 2398, DOI: 10.1109/ULTSYM.2007.602.
- [C49] J. Wu and W. C. Tang, "Microfabrication of high-density microelectrode arrays for peripheral intraneural applications," *Proc. 2nd IEEE Int. Conf. Nano/Micro Engin. Mol. Syst.*, Bangkok, Thailand, 16 – 19 Jan. 2007, pp. 1085 – 1088, DOI: 10.1109/NEMS.2007.352207.
- [C48] K. C. Liu, H. Bode, and W. C. Tang, "Role of oxygen concentration in media on hydra stem cell growth and differentiation under pressure," *Abstracts, SBE 2nd Int. Conf. Bioeng. Nanotechnol.*, Santa Barbara, CA, 5 – 7 Sep. 2006, p 38.
- [C47] J. Wu, W.-F. Feng, W. C. Tang, and F.-G. Zeng, "A microsystem with varying-length electrode arrays for auditory nerve prostheses," *Proc. 28th IEEE Engin. Med. Biol. Soc. Annu. Int. Conf.*, New York City, NY, 30 Aug. – 3 Sep. 2006, pp. 3166 – 3169, DOI: 10.1109/IEMBS.2006.259698.
- [C46] W. Pang, L. Yan, H. Zhang, H. Yu, E. S. Kim, and W. C. Tang, "Ultrasensitive mass sensor based on lateral extensional mode (LEM) piezoelectric resonator," *Tech. Dig., 19th IEEE Int. Conf. Micro Electro Mech. Syst.*, Istanbul, Turkey, 22 – 26 Jan. 2006, pp. 78 – 81, DOI: 10.1109/MEMSYS.2006.1627740.
- [C45] J. Wu, W.-F. Feng and W. C. Tang, "A multi-channel low-power circuit for implantable auditory neural recording microsystems," *Proc. 12th Int. Conf. BioMed. Engin.*, Singapore, 7 – 10 Dec. 2005, Paper #4B1-05, CD-ROM.
- [C44] J. Wu, L. Yan, W. C. Tang, and F.-G. Zeng, "Micromachined electrode arrays with form-fitting profile for auditory nerve prostheses," *Proc. 2005 IEEE Engin. in Med. and Biol. 27th Annu. Conf.*, Shanghai, China, 1 – 4 Sep. 2005, Paper #0648, CD-ROM, DOI: 10.1109/IEMBS.2005.1615666.
- [C43] J. Wu, R. Hainley, and W. C. Tang "A high density micromachined electrode array for auditory nerve implants," *Proc. 2005 Summer Bioengin. Conf.*, Vail, CO, 22 – 26 Jun. 2005, CD-ROM.
- [C42] J. Wu, L. Yan, H. Xu, W. C. Tang, and F.-G. Zeng, "A curvature-controlled 3D micro-electrode array for cochlear implants," *Tech. Dig., 13th Int. Conf. Solid-State Sensors, Actuators, and Microsyst. (Transducers '05)*, Seoul, Korea, 5 – 9 Jun. 2005, pp. 1636 – 1639, DOI: 10.1109/SENSOR.2005.1497402.
- [C41] V. C. Wu, T. Law, C.-M. Hsu, G. Lin, W. C. Tang, and E. S. Monuki, "MEMS platform for studying neurogenesis under controlled mechanical tension," *Proc. 3rd Annual Int. IEEE EMBS Special Topic Conf. Microtechnologies in Med. and Biol.*, Kahuku, Oahu, HI, 12 – 15 May 2005, pp. 408 – 411, DOI: 10.1109/MMB.2005.1548490.
- [C40] Y.-H. Wen, G. Y. Yang, V. J. Bailey, G. Lin, W. C. Tang, and J. H. Keyak, "Mechanically robust micro-fabricated strain gauges for use on bones," *Proc. 3rd Annual Int. IEEE EMBS Special Topic Conf. Microtechnologies in Med. and Biol.*, Kahuku, Oahu, HI, 12 – 15 May 2005, pp. 302 – 304, DOI: 10.1109/MMB.2005.1548455.

- [C39] L. Yan, J. Wu, and W. C. Tang, "A 1.14 GHz piezoelectrically transduced disk resonator," *Tech. Dig., 18th IEEE Int. Conf. Micro Electro Mech. Syst.*, Miami Beach, FL, 30 Jan. – 3 Feb. 2005, pp. 203 – 206, DOI: 10.1109/MEMSYS.2005.1453902.
- [C38] G. Y. Yang, V. J. Bailey, Y.-H. Wen, G. Lin, W. C. Tang, and J. H. Keyak, "Fabrication and characterization of microscale sensors for bone surface strain measurement," *Proc., 3rd IEEE Int. Conf. Sensors*, Vienna, Austria, 24 – 27 Oct. 2004, pp. 1355 – 1358, DOI: 10.1109/ICSENS.2004.1426435.
- [C37] J. A. Ayers, W. C. Tang, and Z. Chen, "360° rotating micro mirror for transmitting and sensing optical coherence tomography signals," *Proc., 3rd IEEE Int. Conf. Sensors*, Vienna, Austria, 24 – 27 Oct. 2004, pp. 497 – 500, DOI: 10.1109/ICSENS.2004.1426209.
- [C36] J. A. Ayers, W. C. Tang, and Z. Chen, "Towards a 360 degree rotational micro mirror for biomedical imaging," *Ext. Abs., 2004 BMES Ann. Fall Meet.*, Philadelphia, PA, 13 – 16 Oct. 2004, CD-ROM.
- [C35] G. Lin, V. C. Wu, R. E. Hainley, L. A. Flanagan, E. S. Monuki, W. C. Tang, "Development of a MEMS microsystem to study the effect of mechanical tension on cerebral cortex neurogenesis," *Proc., 26th Int. Conf. IEEE Engineering Med. Biol. Soc.*, San Francisco, CA, 1 – 5 Sep. 2004, pp. 2607 – 2610, DOI: 10.1109/IEMBS.2004.1403749.
- [C34] L. Yan, J. Wu, and W. C. Tang, "High frequency filters based on piezoelectrically transduced micromechanical resonators," *Proc. 2004 IEEE Int. Ultrasonics, Ferroelectrics, and Frequency Control Joint 50th Anniversary Conf.*, Montréal, Canada, 23 – 27 Aug. 2004, pp. 926 – 929, DOI: 10.1109/ULTSYM.2004.1417886.
- [C33] L. Yan, J. Wu, and W. C. Tang, "Piezoelectric micromechanical disk resonators towards UHF band," *Proc. 2004 IEEE Int. Ultrasonics, Ferroelectrics, and Frequency Control Joint 50th Anniversary Conf.*, Montréal, Canada, 23 – 27 Aug. 2004, pp. 922 – 925, DOI: 10.1109/ULTSYM.2004.1417887.
- [C32] S. F. Yen, H. Lais, Z. Yu, S. Li, W. C. Tang, and P. J. Burke, "GHz electrical properties of carbon nanotubes on silicon dioxide micro bridges," *Tech. Dig. (CD-ROM), 1st Int. Conf. on Nanotech (Nanotech2004)*, Singapore, 13 – 17 Jul. 2004, paper #35-CNN-M146, 6 pages.
- [C31] S. Li, Z. Yu, S.-F. Yen, P. J. Burke, and W. C. Tang, "Carbon nanotube GHz nano-resonator," *Tech. Dig., IEEE MTT-S Int. Microwave Symp.*, Fort Worth, TX, 6 – 11 Jun. 2004, pp. 987 – 990, DOI: 10.1109/MWSYM.2004.1339144.
- [C30] L. Yan, W. Pang, J. Wu, W. C. Tang, and E.-S. Kim, "High frequency micromechanical piezo actuated disk resonator," *Tech. Dig., Solid-State Sensor, Actuator, and Microsyst. Workshop*, Hilton Head Island, SC, 6 – 10 Jun. 2004, pp. 372 – 375.
- [C29] G. Y. Yang, V. J. Bailey, G. Lin, W. C. Tang, and J. H. Keyak, "Design of microfabricated strain gauge array to monitor bone deformation in vitro and in vivo," *Proc., IEEE 4th Symp. Bioinformatics Bioeng. (BIBE 2004)*, Taichung, Taiwan, 19 – 21 May 2004, pp. 30 – 37, DOI: 10.1109/BIBE.2004.1317322.
- [C28] G. Lin and W. C. Tang, "Towards MEMS microsystems for mechanical studies of neonatal and adult mammalian brain," *Ex. Abs., NanoTech 2003*, Montreux, Switzerland, 25 – 27 Nov. 2003, pp. A45 – A46.

- [C27] S. Li, Z. Yu, G. Gadde, P. J. Burke, and W. C. Tang, "Carbon Nanotube Growth for GHz Devices," *Proc. 3rd IEEE Conf. Nanotech. (IEEE-Nano 2003)*, San Francisco, CA, 12 – 14 Aug. 2003, DOI: 10.1109/NANO.2003.1231764.
- [C26] J. Mueller, S. Vargo, D. Bame, D. Fitzgerald, and W. Tang, "Proof-of-concept demonstration of a micro-isolation valve," *Proc. 35th AIAA/ASME/SAE/ASEE Joint Propulsion Conf. & Exhibit*, Los Angeles, CA, 20 – 24 Jun. 1999, paper # AIAA 99-2726 (10 pages), DOI: 10.2514/6.1999-2726.
- [C25] I. Chakraborty, W. C. Tang, D. P. Bame, and T. K. Tang, "MEMS micro-valve for space applications," *Tech. Dig., 10th Int. Conf. Solid-State Sensors and Actuators (Transducers '99)*, Sendai, Japan, 7 – 10 Jun. 1999, pp. 1820 – 1823.
- [C24] J. Mueller, I. Chakraborty, S. Vargo, D. Bame, C. Marrese, J. Forgrave, and W. C. Tang, "MEMS Micropropulsion activities at JPL," *Proc. 2nd Int. Conf. on Integrated Micro/Nanotech. for Space Applications, MNT 99*, Pasadena, CA, 11 – 15 Apr. 1999 (28 pages), DOI: 10.2514/6.1999-2726.
- [C23] J. Mueller, I. Chakraborty, D. Bame, W. Tang, R. Lawton, and A. Wallace, "Proof-of-concept demonstration of a vaporizing liquid micro-thruster," *Proc. 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conf. & Exhibit*, Cleveland, OH, 13 – 15 Jul. 1998, paper # AIAA 98-3924 (6 pages), DOI: 10.2514/6.1998-3924.
- [C22] J. Mueller, D. Pyle, I. Chakraborty, R. Ruiz, W. Tang, and R. Lawton, "Microfabricated ion accelerator grid design issues: Electric breakdown characteristics of silicon dioxide insulator material," *Proc. 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conf. & Exhibit*, Cleveland, OH, 13 – 15 Jul. 1998, paper # AIAA 98-3923 (18 pages), DOI: 10.2514/6.1998-3923.
- [C21] J. Mueller, S. Vargo, I. Chakraborty, J. Forgrave, D. Bame, and W. Tang, "The Micro-isolation valve: Introduction of concept and preliminary results," *Proc. 34th AIAA/ASME/SAE/ASEE Joint Propulsion Conf. & Exhibit*, Cleveland, OH, 13 – 15 Jul. 1998, paper # AIAA 98-3811 (11 pages), DOI: 10.2514/6.1998-3811.
- [C20] W. C. Tang, "Micromechanical devices at JPL for space exploration," *Tech. Dig., IEEE Aerospace Conf.*, Snowmass, CO, March 21 – 28, 1998, paper # 4.905, CD-ROM (10 pages), DOI: 10.1109/AERO.1998.686944.
- [C19] W. C. Tang, T. K. Tang, I. Chakraborty, and D. Bame "MEMS micro valves for spacecraft propulsion and organic material sensors," *Tech. Dig., Government Microcircuit Applications Conf.*, Arlington, VA, 16 – 19 Mar. 1998, pp. 259 – 261.
- [C18] W. C. Tang, "MEMS applications in space exploration," *Tech. Dig., SPIE Micromachining and Microfabrication Conf.*, Austin, TX, 29 – 30 Sep. 1997, paper # 3224-24, pp. 202 – 211.
- [C17] J. Mueller, W. C. Tang, W. J. Li, and A. P. Wallace, "Micro-fabricated accelerator grid system feasibility assessment for micro-ion engines," *Proc. 25th Int. Electric Propulsion Conf.*, Cleveland, OH, 24 – 28 Aug. 1997, paper # IEPC 97-071 (8 pages).
- [C16] J. Mueller, W. C. Tang, A. P. Wallace, W. J. Li, D. P. Bame, I. Chakraborty, and R. A. Lawton, "Design, analysis, and fabrication of a vaporizing liquid micro-thruster," *Proc. 33rd AIAA/ASME/SAE/ASEE Joint Propulsion Conf.*, Seattle, WA, 6 – 9 Jul. 1997, paper # AIAA 97-3054 (10 pages).

- [C15] W. C. Tang, "Overview of microelectromechanical systems and design processes," *Tech. Dig., 34th Design Automation Conf.*, 9 – 13 Jun. 1997, Anaheim, CA, pp 670 – 673.
- [C14] M. D. Porter, C.-J. Zhong, J. Ni, S. J. Coldiron, W. C. Tang, "Electrochemically-driven micropump for fluid flow and delivery: Toward a novel micropump design for miniaturized liquid chromatographic and flow injection analyses," *27th Int. Conf. Environmental Syst.*, Lake Tahoe, NV, 14 - 17 Jul. 1997, Paper No. 972420.
- [C13] D. G. McIntyre, S. J. Cunningham, J. S. Carper, P. D. Jaramillo, and W. C. Tang, "A methodology to study wafer level response of silicon microstructures to mechanical shock," *Tech. Dig., 1996 ASME Int. Mech. Eng. Congress and Exposition*, Atlanta, GA, 17 – 22 Nov. 1996, DSC-Vol. 59, pp 435 – 439.
- [C12] S. J. Cunningham, D. G. McIntyre, J. S. Carper, P. D. Jaramillo, and W. C. Tang, "Microstructures designed for shock robustness," *Proc. SPIE 2880, Microlithography and Metrology in Micromachining II*, 99, Sep. 13, 1996, Austin, TX, DOI: 10.1117/12.250971.
- [C11] W. C. Tang, "Surface micromachining review," *Tech. Dig., 28th Annual SCCAVS Symp. & Vacuum Equipment Exhibition*, 27 – 28 Sep. 1995, pp 8 – 10.
- [C10] C. H. Mastrangelo, X. Zhang, and W. C. Tang, "Surface micromachined capacitive differential pressure sensor with lithographically defined silicon diaphragm," *Tech. Dig., 8th Int. Conf. Solid-State Sensors and Actuators (Transducers '95, Eurosens IX)*, Stockholm, Sweden, 25 – 29 Jun. 1995, pp. 612 – 615.
- [C09] W. C. Tang, "Development process of automotive microsensors," *Tech. Dig., SPIE 1995 North American Conf. Smart Structures and Materials*, San Diego, CA, 22 Feb. – 3 Mar. 1995, pp. 251 – 257.
- [C08] X. Zhang and W. C. Tang, "Viscous air damping in laterally driven microresonators," *Tech. Dig., IEEE Micro Electro Mech. Syst. Workshop*, Kanagawa, Japan, 25 – 28 Jan. 1994, pp. 199 – 204.
- [C07] L. Tong, M. Mehregany, and W. C. Tang, "Amorphous silicon carbide films by plasma-enhanced chemical vapor deposition," *Tech. Dig., IEEE Micro Electro Mech. Syst. Workshop*, Fort Lauderdale, FL, 7 – 10 Feb. 1993, pp. 242 – 247.
- [C06] W. C. Tang, "Micro-engineered actuators—A review," *Tech. Dig., Electro Int.*, New York, New York, 16 – 18 Apr. 1991, pp 104 – 109.
- [C05] W. C. Tang, M. G. Lim, and R. T. Howe, "Electrostatically balanced comb drive for controlled levitation," *Tech. Dig., IEEE Solid-State Sensor and Actuator Workshop*, Hilton Head Island, SC, 4– 7 Jun. 1990, pp 23 – 27.
- [C04] R. A. Brennen, A. P. Pisano, and W. C. Tang, "Multiple mode micromechanical resonators," *Tech. Dig., IEEE Micro Electro Mech. Syst. Workshop*, Napa Valley, California, 11 – 14 Feb. 1990, pp. 9 – 14.
- [C03] W. Yun, W. C. Tang, and R. T. Howe, "Fabrication technologies for integrated microdynamic systems," *Tech. Dig., 3rd Toyota Conf.*, Aichi-ken, Japan, 22 – 25 Oct. 1989, pp. 17-1 – 17-15.
- [C02] W. C. Tang, T.-C. Nguyen, M. W. Judy, and R. T. Howe, "Electrostatic-comb drive for lateral polysilicon resonators," *Tech. Dig., 5th Int. Conf. Solid-State Sensors and Actuators (Transducers '89)*, Montreux, Switzerland, 25 – 30 Jun. 1989, pp. 138 – 140.

- [C01] W. C. Tang, T.-C. Nguyen, and R. T. Howe, "Laterally driven polysilicon resonant microstructures," *Tech. Dig., IEEE Micro Electro Mech. Syst. Workshop*, Salt Lake City, Utah, 20 – 22 Feb. 1989, pp. 53 – 59, DOI: 10.1109/MEMSYS.1989.77961.

Invited Lectures since 2000:

- [L51] W. C. Tang, "Neural Science at the micro and nano scales," *Invited Lecture, Am. Soc. Quality (ASQ)*, San Gabriel Valley Regional Section Meeting, virtual, Oct. 20, 2021.
- [L50] W. C. Tang, "Microfluidic Platforms for Studying the Electrophysiology of Neuronal Tissues in vitro," *Invited Lecture*, School of Science, Technology, and Health, Biola University, CA, USA, Feb. 27, 2020.
- [L49] W. C. Tang, "Micro-electromechanical Systems (MEMS) Technology and Applications," *Invited Keynote Address, APAC Innovation Summit 2016 Series – Sensors*, Hong Kong Science and Technology Park, Hong Kong, China, Aug. 25, 2016.
- [L48] W. C. Tang, "Microfluidic Platforms for Cellular Biomechanics as Diagnostic Tools," *Invited Keynote Address, 19th Nano Engin. Microsyst. Technol. Conf.*, Taipei, Taiwan, Aug. 13, 14, 2015.
- [L47] W. C. Tang, "Microfluidic platforms for cellular biomechanics as diagnostic tools," *Invited Talk, Seminar*, Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan, Jul. 20, 2015.
- [L46] W. C. Tang, "Characterization of Biological Material Properties at the Cellular Level," *Invited Keynote Address, 3rd Annu. World Congress of Adv. Mater. 2014 (WCAM 2014)*, Chongqing, China, Jun. 16 – 19, 2014.
- [L45] W. C. Tang, "Microfluidic Platforms for Cellular Biomechanics," *Invited Talk, Microfluidics@HK 2014 Conf.*, University of Hong Kong, Hong Kong, SAR, China, Jun. 3, 2014.
- [L44] W. C. Tang, "Cellular Biomechanics as Diagnostic Tools," *Invited Talk, Industrial Seminar at Kyoto University*, Kyoto, Japan, Mar. 20, 2014.
- [L43] W. C. Tang, "MEMS Microfluidic Platforms for Cancer Studies," *Invited Keynote Address, Symp. Adv. MEMS Sensor Technol., China Semiconductor Technol. Int. Conf. (CSTIC) 2014*, Shanghai, China, Mar. 16 – 17, 2014.
- [L42] S. Gupta, A. C. Baker, and W. C. Tang, "Microfluidic Platforms for Capturing Circulating Tumor Cells," *Invited Keynote Address, 2013 7th IEEE Int. Conf. Nano/Mol. Med. Engin. (IEEE-NANOMED 2013)*, Phuket, Thailand, Nov. 10 – 13, 2013.
- [L41] W. C. Tang, "Microfluidic Platforms for Cell Biomechanics Studies," *Invited Talk, Engineering Seminar*, University of Missouri - Columbia, Columbia, MO, USA, May 10, 2013.
- [L40] W. C. Tang, "Microfluidic Platforms for Cell Biomechanics Studies," *Invited Talk, Nano@Wayne Seminar*, Wayne State University, Detroit, MI, USA, Apr. 9, 2013.
- [L39] W. C. Tang, "Peripheral Nerve Interface Device for Robotic Arms," *Invited Keynote Address, 2011 IEEE Int. Conf. Robotics and Biometrics (ROBIO 2011)*, Phuket, Thailand, Dec. 7 – 11, 2011.

- [L38] H. C. Wong and W. C. Tang, "Correlating Simulation and experimental Data of Traction and Cell Speed as Functions of Substrate and Cell Stiffness," *Invited Talk, 2011 IEEE 11th Int. Conf. Bioinformatics and Bioengin. (BIBE 2011)*, Taichung, Taiwan, Oct. 24 – 26, 2011.
- [L37] W. C. Tang, "The future of Micro-electromechanical Systems," *Invited Keynote Address, Leaders Night 2011, Orange County Engin. Council*, Irvine, CA, USA, Sep. 20, 2011.
- [L36] W. C. Tang, "Microplatforms for Cell Biomechanics Studies," *Invited Talk, Berkeley Sensors and Actuators Center Seminar*, University of California, Berkeley, CA, USA, Nov. 17, 2009.
- [L35] W. C. Tang, "Microplatforms for Cell Biomechanics Studies," *Invited Talk, 7th Korea-U.S.A. Joint Symp. MEMS Bioengin. Technol.*, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Sep. 27 – 29, 2009.
- [L34] W. C. Tang, "Microfluidics and Microfabrications," *Invited Talk, Indo-US Workshop on Microfluidics and fabronics (Microfabrication)*, Kharagpur, India, Jan. 9 – 11, 2009.
- [L33] W. C. Tang, "Microfluidic Platform for Studying Cell Mechanics," *Invited Talk, 13th Int. Conf. Biomed. Engin. (13ICBME)*, Singapore, Dec. 3 – 6, 2008.
- [L32] W. C. Tang, "Implantable strain gauges for biological tissues," *Invited Talk, Cleveland FES and APT Center Neural Prosthesis Seminar*, Case Western Reserve University, Cleveland, OH, May 9, 2008.
- [L31] W. C. Tang, "Implantable strain gauges for biological tissues," *Invited talk, Engineering Seminar*, National Tsing Hua University, Hsinchu, Taiwan, Mar. 27, 2008.
- [L30] W. C. Tang, "Sensing with MEMS," *Invited Talk, Workshop on MEMS for Defense and Security Applications*, The MITRE Corporation, McLean, VA, USA, Feb. 28, 2008
- [L29] W. C. Tang, "Micro Strain Gauges for Biological Tissues," *Invited Keynote Address, Tech. Dig. 7th IEEE Int. Conf. Nanotechnol.*, Hong Kong, SAR, China, Aug. 2 - 5, 2007, pp. 106 - 107.
- [L28] W. C. Tang, "Microscale Biomechanics: Studies of Neurogenesis and Stem Cell Differentiation Under Micromechanical Influences," *Invited Plenary Address, Proc. 2005 IEEE Int. Conf. Robotics Biomimetics*, Hong Kong & Macau, SAR, China, Jun. 29 – Jul. 3, 2005, pp. 20 – 25.
- [L27] W. C. Tang, "MEMS platform for studying neurogenesis under controlled tension," *Invited Talk, 3rd Korea-USA Joint Symp. MEMS and BioSyst. Tech.* Daejeon, Korea, Jun. 9 – 11, 2005.
- [L26] W. C. Tang, "Nano-scale technology for bioinformatics applications," *Invited Talk, Proc., Modern Engin. Tech. Sem. 2004*, Taipei, Taiwan, Nov. 12 – 17, 2004, CD-ROM.
- [L25] W. C. Tang, "Status and future trends of MEMS research in the U.S. for biomedical applications," *Invited Talk, Proc., 10th Int. Micromachine/Nanotech Symp.*, Tokyo, Japan, Nov. 11, 2004, pp.
- [L24] W. C. Tang, "MEMS for Biomedical Applications," *Invited Talk, NSF Workshop on Control Micro/Nano Syst.*, Arlington, VA, Mar. 29, 2004
- [L23] W. C. Tang, "Electronic Devices Based on Carbon Nanotubes," *Invited Talk, Int. Conf. Industrial Appl. nanomater. Adv. Composites*, Hong Kong, SAR, China, Feb. 23 – 25, 2004.
- [L22] W. C. Tang, "MEMS Programs at DARPA," *Invited talk, Colloquium*, College of Information Science and Systems Engineering, University of Arkansas, Little Rock, AK, Mar. 15, 2002.

- [L21] W. C. Tang, "MEMS Program at DARPA: Current Thrust Areas and Future Vision," *Invited talk, American Physical Society.*, College Park, MD, Jan. 16, 2002.
- [L20] W. C. Tang, "MEMS Program at DARPA," *Invited talk, Departmental Seminar*, Department of Mechanical Engineering, Worcester Polytechnic Institute, Worcester, MA, Nov. 29, 2001.
- [L19] W. C. Tang, "MEMS Program at DARPA," *Invited lecture*, Washington DC / Northern Virginia chapter of the IEEE Antenna and Propagation Soc. Meet., Nov. 1, 2001.
- [L18] W. C. Tang, "MEMS Technology for Military Applications," *Keynote Address, Workshop on Microsyst. Technol. Appl.*, Redstone Arsenal, AL, Jul. 11 – 12, 2001.
- [L17] W. C. Tang, "MEMS Program at DARPA: Current and Future," *Invited talk, Int. Adv. Workshop on Future Trends in Microelectronics*, Island of Bendor, France, Jun. 24 – 29, 2001.
- [L16] W. C. Tang, "MEMS Programs at DARPA," *Invited talk*, Wayne State University Mechanical Engineering Seminar, Detroit, MI, Apr. 27, 2001.
- [L15] W. C. Tang, "MEMS Technology for Aerospace Applications," *Invited keynote address, Canada-Europe Forum on MEMS for Aerospace Appl.*, Ottawa, Ontario, Canada, April 12, 2001.
- [L14] W. C. Tang, "MEMS Programs at DARPA," *Invited talk, 2001 March Meet. American Physical Soc.*, Seattle, WA, Mar. 12 – 16, 2001.
- [L13] W. C. Tang, "Overview of DARPA MEMS Programs," *Invited talk, SPIE Int. Symp. Microelectronics and Assembly*, Singapore, Nov. 27 – Dec. 2, 2000.
- [L12] W. C. Tang, "Overview of DARPA MEMS Programs," *Invited talk*, Engineering Seminar, Nanyang Technical University, Singapore, Nov. 24, 2000.
- [L11] W. C. Tang, "MEMS at DARPA," *Invited talk, ANSYS 2000 Conf.*, Pittsburgh, PA, Aug. 28, 2000.
- [L10] W. C. Tang, "DARPA MEMS Program," *Invited talk, COTS MEMS Conf.*, Berkeley, CA, Aug. 3 – 4, 2000.
- [L09] W. C. Tang, "MEMS Program at DARPA," *Invited talk*, NASA/Goddard Space Flight Center, MD, Jun. 21, 2000.
- [L08] W. C. Tang, "MEMS Program at DARPA," *Invited talk*, Litton Company, Chantilly, VA, Jun. 20, 2000.
- [L07] W. C. Tang, "MEMS Program at DARPA," *Invited keynote address*, University of Colorado at Boulder CAMPmode Industrial Advisory Board Retreat, Estes Park, CO, May 17 – 19, 2000.
- [L06] W. C. Tang, "MEMS Program at DARPA," *Invited luncheon keynote address, 2nd Texas-Area Workshop on Microelectromech. Syst.*, Dallas, TX, May 16, 2000.
- [L05] W. C. Tang, "MEMS Program at DARPA," *Invited Panel Speaker*, Highlands Forum XIV, "The World of the Small," Pentagon City, VA, May 12 – 13, 2000.
- [L04] W. C. Tang, "US National Perspective on MEMS," *Invited talk*, Seminar, University of Tokyo, Tokyo, Japan, Apr. 14, 2000.
- [L03] W. C. Tang, "US National Perspective on MEMS," *Invited talk*, Seminar, Tohoku University, Sendai, Japan, Apr. 13, 2000.

- [L02] W. C. Tang, "US National Perspective on MEMS," *Invited Talk*, 6th World Micromachine Summit, Hiroshima, Japan, Apr. 10 – 12, 2000.
- [L01] W. C. Tang, "Is COTs appropriate for high-consequence systems?" *Invited Panel Speaker*, *Government Microcircuit Appl. Critical Tech. Conf. (GOMAC)*, Anaheim, CA, Mar. 20 – 23, 2000.

US Patents & Invention Disclosures

- [P12] W. C. Tang, A. W. Browne, M. J. Seiler, and Y. Xue, "3D printed micro-millifluidic bioreactors for long-term retinal organoid maintenance," U.S. Provisional Patent #63/241,142, Sep. 7, 2021.
- [P11] C. Bradley and W. C. Tang, "Biomedical device and clinical algorithm for NICU infants," U.S. Provisional Patent #62/967,455, Jan. 28, 2021.
- [P10] W. J. Agnew, W. C. Tang, Z. Siu, B. Chu, and J. Wang, "Cardiac energy harvesting device and methods of use," U.S. Provisional Patent #17/124,181, Dec. 16, 2020.
- [P09] W. C. Tang and Y. Li, "Diagnostic device and method for detecting malaria infection by saliva sample testing," U.S. Provisional Patent #62/356,848, Jun. 30, 2016.
- [P08] D. Pemba and W. C. Tang, "Multielectrode array and method of fabrication," U.S. Patent Application #20150126843, May 7, 2015.
- [P07] W. C. Tang and Y.-H Hsu, "Microfluidic devices and methods for malaria detection," U.S. Patent #8,628,972, Jan. 15, 2014.
- [P06] W. C. Tang, J. H. Fallon, W. E. Bunney, and R. Langan, "Neural probe array and method of use," U.S. Patent #8,452,418, May 28, 2013.
- [P05] W. C. Tang, J. Wu, and R. Hainley, "High density micromachined electrode arrays useable for auditory nerve implants and related methods," U.S. Patent #7,991,475, Aug. 2, 2011.
- [P04] X. Zhang, D. G. McIntyre, and W. C. Tang, "Fabrication method for encapsulated micromachined structures," U. S. Patent #6,146,917, Nov. 14, 2000.
- [P03] W. C. Tang, "Digital capacitive accelerometer," U. S. Patent #5,447,068, Sep. 5, 1995.
- [P02] W. C. Tang, "Digital capacitive accelerometer," U. S. Patent #5,353,641, Oct. 11, 1994.
- [P01] W. C. Tang and R. T. Howe, "Laterally driven resonant microstructures," U. S. Patent #5,025,346, Jun. 18, 1991.

Technical Reports:

- [R04] K. Shcheglov and W. C. Tang, "Chemical machining of microscopic holes and grooves in glass," *NASA Tech Brief*, vol. 34, No. 2, Feb, 2010, p. 32.
- [R03] I. Chakraborty, W. C. Tang, D. Bame, and T. Tang, "Normally closed, piezoelectrically actuated microvalve," *NASA Tech Brief*, vol. 25, No. 1, Jan. 2001, p. 39.
- [R02] G. Lin and W. C. Tang, "Improved sensor pills for physiological monitoring," *NASA Tech Brief*, vol. 24, No. 2, Feb. 2000, p. 54.
- [R01] G. Lin and W. C. Tang, "Wearable sensor patches for physiological monitoring," *NASA Tech Brief*, vol. 24, No. 2, Feb. 2000, p. 54.