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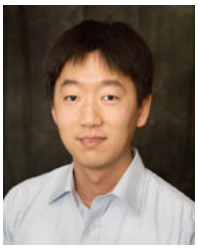

Education

2004–2010 **Ph.D.**, *Purdue University*, West Lafayette, IN, USA.
Dissertation topic: High-Q RF-MEMS Tunable Resonators and Filters for Reconfigurable Radio Frequency Front-Ends
Co-Advisors: Linda P. B. Katehi and Dimitrios Peroulis

2000–2004 **B.Eng**, *Zhejiang University*, Hangzhou, China.
College of Information Science and Electronics Engineering

Experiences

2017–Present **Associate Professor**, *University of California*, Davis, CA.

2012–2017 **Assistant Professor**, *University of California*, Davis, CA.

2010–2011 **Postdoctoral Researcher**, *Purdue University*, West Lafayette, IN.

2005–2010 **Graduate Research Assistant**, *Purdue University*, West Lafayette, IN.

2004–2005 **Graduate Teaching Assistant**, *Purdue University*, West Lafayette, IN.

Research Interests

- Micro/Nano-ElectroMechanical (M/NEMS) Systems and RF-MEMS
- High frequency (RF to THz) integrated circuits and antennas
- Applications of high-frequency electronics in communication and sensing
- Small unmanned aerial vehicles (UAV)

Teaching

- EEC 130A: Introductory Electromagnetics I
- EEC 134AB: Design of RF Systems
- EEC 229: RF-MEMS and Adaptive Wireless Systems
- EEC 289N: Design of RF and Microwave Filters

Honors and Awards

2013 **Hellman Foundation Fellow**, *University of California Davis*.
Awarded to ∼10 UC Davis assistant professors each year

2009 **IEEE Antenna-Propagation Society Graduate Fellowship** .

2004 **Graduation with Honors**, *Chu Kochen Honors Class, Zhejiang University*.

Publications

Journal Publications

[J22] Hao Wang, Jingjun Chen, Hooman Rashtian, and Xiaoguang Liu, "High-Efficiency Millimeter-wave Single-ended and Differential Fundamental Oscillators in CMOS," Accepted, *IEEE Journal of Solid-state Circuits*, 2018.

[J21] Md. Naimul Hasan, Shahrokh Saeedi, Qun Jane Gu, Hjalti H. Sigmarsson, and Xiaoguang Liu, "Design Methodology of Reconfigurable N-path Filter with Center Frequency and Bandwidth Tuning," Accepted, *IEEE Transactions on Microwave Theory and Techniques*, 2018.

[J20] Bo Yu, Yu Ye, Xuan Ding, Yuhao Liu, Zhiwei Xu, Xiaoguang Liu, and Qun Jane Gu, "Ortho-Mode Sub-THz Interconnect Channel for Planar Chip-to-chip Communications," *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, no. 4, pp. 1864–1873, Apr., 2017.

[J19] Yuhao Liu, Jiansong Liu, Bo Yu, and Xiaoguang Liu, "A Compact Single-Cantilever Multicontact RF-MEMS Switch With Enhanced Reliability„" IEEE Microwave and Wireless Components Letters, vol. 28, no. 3, pp. 191–193, Mar., 2018.

[J18] Yuhao Liu, Yusha Bey, and Xiaoguang Liu, "High-Power High-Isolation RF-MEMS Switches with Enhanced Hot-switching Reliability Using A Shunt Protection Technique," IEEE Transactions on Microwave Theory and Techniques, vol. 65, no. 9, pp. 3188–3199, Apr., 2017.

[J17] Yan Wang, Ben Tobias, Yu-Ting Chang, Jo-Han Yu, Meijiao Li, Fengqi Hu, Ming Chen, Manish Mamidanna, T. Phan, Anh-Vu Pham, Jane Q. Gu, Xiaoguang Liu, Yilun Zhu, Calvin W. Domier, L. Shi, E. Valeo, G. J. Kramer, D. Kuwahara, Y. Nagayama, A. Mase, and Neville C. Luhmann Jr., "Millimeter-wave Imaging of Magnetic Fusion Plasmas, Technology Innovations Advancing Physics Understanding," Nuclear Fusion, vol. 57, pp. 29703, Mar., 2017.

[J16] M. Naimul Hasan, Qun Jane Gu, and Xiaoguang Liu, "Tunable Blocker-Tolerant On-chip Radio Frequency Front-end Filter with Dual Adaptive Transmission Zeros for Software Defined Radio Applications," IEEE Transactions on Microwave Theory and Techniques, vol. 64, no. 12, pp. 4419–4433, Oct., 2017.

[J15] Yuhao Liu, Yusha Bey, and Xiaoguang Liu, "Extension of the Hot-Switching Reliability of RF-MEMS Switches Using A Series Contact Protection Technique," IEEE Transactions on Microwave Theory and Techniques, vol. 64, no. 10, pp. 3151–3162, Oct, 2016.

[J14] Akash Anand and Xiaoguang Liu, "Reconfigurable Planar Capacitive Coupling in Substrate-Integrated Coaxial-Cavities Filters," IEEE Transactions on Microwave Theory and Techniques, vol. 64, no. 8, pp. 2548–2560, Aug, 2016.

[J13] Bo Yu, Yuhao Liu, Yu Ye, Xiaoguang Liu, and Qun Jane Gu, "Low-loss and Broadband G-Band Dielectric Interconnect for Chip-to-Chip Communication," IEEE Microwave and Wireless Components Letters, vol. 26, no. 7, pp. 478–480, Jul, 2016.

[J12] Bo Yu, Yuhao Liu, Yu Ye, Junyan Ren, Xiaoguang Liu, and Jane Q. Gu, "High-Efficiency Micromachined Sub-THz Channels for Low-Cost Interconnect for Planar Integrated Circuits," IEEE Transactions on Microwave Theory and Techniques, vol. 64, no. 1, pp. 96–105, Jan, 2016.

[J11] Young Seek Cho, Himanshu Joshi, Xiaoguang Liu, Hjalti H. Sigmarsson, William J. Chappell, and Dimitrios Peroulis, "Development of 6–12 GHz evanescent-mode two-pole low-loss tunable bandpass filter," Microwave and Optical Technology Letters, vol. 57, no. 10, pp. 2418–2422, Oct, 2015.

[J10] Joshua Small, Adam Fruehling, Anurag Garg, Xiaoguang Liu, Dimitrios Peroulis, "Real-time DC-dynamic biasing method for switching time improvement in severely underdamped fringing-field electrostatic MEMS actuators," Journal of Visualized Experiments, Vol. 90, e51251, Aug, 2014.

[J9] Akash Anand, Joshua Small, Dimitrios Peroulis, Xiaoguang Liu, "Theory and Design of Octave Tunable Filters with Lumped Tuning Elements," IEEE Transactions on Microwave Theory and Techniques, vol. 62, no. 12, pp. 4353–4364, Dec, 2013.

[J8] Joshua Small, Adam Fruehling, Anurag Garg, Xiaoguang Liu, and Dimitrios Peroulis, "DC-dynamic biasing for >50× switching time improvement in severely under-damped fringing-field electrostatic MEMS actuators," Journal of Micromechanics and Microengineering, vol. 22, 125029, 2012.

[J7] Kenle Chen, Xiaoguang Liu, and Dimitrios Peroulis, "Widely-Tunable High-Efficiency Power Amplifier with Ultra-Narrow Instantaneous Bandwidth," IEEE Transactions on Microwave Theory and Techniques, vol. 60, No. 12, pp. 3787–3797, Dec, 2012.

[J6] Joshua Small, Wasim Irshad, Adam Fruehling, Anurag Garg, Xiaoguang Liu and Dimitrios Peroulis, "Electrostatic fringing-field actuation for pull-in free RF-MEMS analogue tunable resonators," Journal of Micromechanics and Microengineering, vol. 22, No. 9, Sep, 2012.

[J5] Xiaoguang Liu, Linda P. B. Katehi, William J. Chappell, and Dimitrios Peroulis, "Power Handling of High-Q MEMS Tunable Evanescent-mode Resonators and Filters," IEEE Transactions on Microwave Theory and Techniques, vol. 60, no. 2, pp. 270–283, Feb, 2012.

[J4] Xiaoguang Liu, Joshua Small, David Berdy, Linda Katehi, William J. Chappell, and Dimitrios Peroulis, "Impact of Mechanical Vibration on the Performance of RF MEMS Evanescent-mode Tunable Resonators," IEEE Microwave and Wireless Component Letters, vol. 21, No. 8, pp. 406–408, Aug, 2011.

[J3] Kenle Chen, Xiaoguang Liu, Andrew Kovacs, and Dimitrios Peroulis, "Anti-Biased Electrostatic RF MEMS Varactors and Filters," IEEE Transactions on Microwave Theory and Techniques, vol. 58, no. 12, pp. 3971–3981, Dec, 2010.

[J2] Xiaoguang Liu, Linda P. B. Katehi, and Dimitrios Peroulis, "Novel Dual-Band Microwave Filter using Dual-Capacitively-Loaded Cavity Resonators," IEEE Microwave and Wireless Component Letters, vol. 20, no. 11, pp. 610–612, Nov, 2010.

[J1] Xiaoguang Liu, Linda P. B. Katehi, William J. Chappell, and Dimitrios Peroulis, "High-Q Tunable Microwave Cavity Resonators and Filters using SOI-based RF MEMS Tuners," IEEE/ASME Journal of Microelectromechanical Systems, vol. 19, no. 4, pp. 774–784, Aug, 2010.

Conference Publications

[C60] Bo Yu, Yu Ye, Xuan Ding, Xiaoguang Liu, Jane Q. Gu, "Sub-THz Interconnect for Planar Chip-to-Chip Communications," IEEE Radio & Wireless Symposium (RWS), Jan., 2018.

[C59] Jeronimo Segovia-Fernandez, James Do, Xiaonan Jiang, Yuhao Liu, Julius M. Tsai, Hooman Rashtian, Xiaoguang Liu, David A. Horsley, "Monolithic AlN MEMS-CMOS Resonant Transformer for Wake-up Receivers," IEEE International Ultrasonics Symposium, Sep., 2017.

[C58] Yingsong Li, Songjie Bi, Xiaoguang Liu, "A Modified Bow-Tie Antenna for Contact-Based Heartbeats Detection Applications," IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, Jul., 2017.

[C57] Kai Yu, Xiaoguang Liu, Yingsong Li, "Mutual Coupling Reduction of Microstrip Patch Antenna Array Using Modified Split Ring Resonator Metamaterial Structures," IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, Jul., 2017.

[C56] Kai Yu, Yingsong Li, Xiaoguang Liu, "A High Gain Patch Antenna Using Near Zero-Index Metamaterial Coating," IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, Jul., 2017.

[C55] Scott Block, Xiaonan Jiang, Can Cui, Jeronimo Segovia Fernandez, Rajeevan Amirtharajah, David Horsley, Hooman Rashtian, Xiaoguang Liu, "A 100-nW CMOS Wake-Up Receiver with -60-dBm Sensitivity Using AlN High-Q Piezoelectric Resonators," IEEE International Symposium on Circuits and Systems (ISCAS), Jun., 2017.

[C54] Md. Naimul Hasan, Xiaoguang Liu, "Tunable RF Front-end Filter with Wideband Blocker Suppression for Multi-Standard Applications," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2017.

[C53] Hao Wang, Daniel Kuzmenko, Bo Yu, Yu Ye, Jane Gu, Hooman Rashtian, Xiaoguang Liu, "A Compact 213-GHz CMOS Fundamental Oscillator with 0.56-mW Output Power and 3.9% Efficiency using a Capacitive Transformer," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2017.

[C52] Bo Yu, Yu Ye, Xuan Ding, Xiaoguang Liu, Jane Q. Gu, "Dielectric Waveguide Based Multi-Mode sub-THz Interconnect Channel for High Data-Rate High Bandwidth-Density Planar Chip-to-Chip Communication," **(Best Student Paper, Third Place)** IEEE MTT-S International Microwave Symposium (IMS), Jun., 2017.

[C51] Bo Yu, Yu Ye, Xuan Ding, Xiaoguang Liu, Jane Q. Gu, "High Energy-Efficiency High Bandwidth-Density Sub-THz Interconnect for the Last-Centimeter Chip-to-Chip Communications," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2017.

[C50] Md Naimul Hasan, Mahmoud Nafe, Xiaoguang Liu, "Design of All Passive Blocker-Tolerant Reconfigurable RF Front-end Filter," IEEE Wireless and Microwave Technology Conference (WAMICON), Apr., 2017.

[C49] Hao Wang, Akash Anand, Xiaoguang Liu, "A Miniature 800-1100-MHz Tunable Filter with High-Q Ceramic Coaxial Resonators and Commercial RF-MEMS Tunable Digital Capacitors," IEEE Wireless and Microwave Technology Conference (WAMICON), Apr., 2017.

[C48] Fengqi Hu, Meijiao Li, Calvin W. Domier, Xiaoguang Liu, Neville C. Luhmann, Jr., "Microwave Imaging Radar Reflectometer System Utilizing Digital Beam Forming," APS Division of Plasma Physics Meeting 2016, Oct, 2016.

[C47] Bo Yu, Yu Ye, Xiaoguang Liu, and Qun Jane Gu, "Microstrip line based sub-THz interconnect for high energy-efficiency chip-to-chip communications," 2016 IEEE International Symposium on Radio-Frequency Integration Technology (RFIT), Aug, 2016.

[C46] Bo Yu, Yu Ye, Xiaoguang Liu, and Qun Jane Gu, "Sub-THz interconnect channel for planar chip-to-chip communication," IEEE International Symposium on Electromagnetic Compatibility (EMC), Jul, 2016.

[C45] Md. Naimul Hasan, Qun Jane Gu, and Xiaoguang Liu, "Tunable Blocker-Tolerant RF Front-end Filter with Dual Adaptive Notches for Reconfigurable Receivers," IEEE MTT-S International Microwave Symposium (IMS), May, 2016.

[C44] Akash Anand and Xiaoguang Liu, "Metallic Air Cavities Integrated with Surface Mount Tuning Components for Tunable Evanescent-Mode Resonators," IEEE MTT-S International Microwave Symposium (IMS), May., 2016.

[C43] James Chen, Akash Anand, Marvin D. Benge, Hjalti Sigmarsson, and Xiaoguang Liu, "An Evanescent-mode Tunable Dual-band Filter with Independently-Controlled Center Frequencies," IEEE MTT-S International Microwave Symposium (IMS), May., 2016.

[C42] Md. Naimul Hasan, Qun Jane Gu, and Xiaoguang Liu, "Reconfigurable Blocker-Tolerant RF Front-End Filter with Tunable Notch for Active Cancellation of Transmitter Leakage in FDD Receivers," **(Student Paper Competition Finalist)**, IEEE MTT-S International Symposium on Circuits and Systems (ISCAS), May., 2016.

[C41] James T. S. Do and Xiaoguang Liu, "A High-Q W Band Tunable Bandpass Filter," IEEE MTT-S International Microwave Symposium (IMS), May., 2016.

[C40] Songjie Bi, Juan Zeng, Marzhan Bekbalanova and Xiaoguang Liu, "Contact-based Radar Measurement of Cardiac Motion—A Position and Polarization Study," IEEE Topical Conference on Biomedical Wireless Technologies, Networks & Sensing Systems, Jan., 2016.

[C39] Hooman Rashtian, Jane Q. Gu, Xiaoguang Liu, "A 200-GHz Triple-Push Oscillator in 65-nm CMOS with Design Techniques for Enhancing DC-to-RF Efficiency, " IEEE Topical Meetings on Silicon Monolithic Integrated Circuits in RF Systems (SiRF), Jan., 2016.

[C38] Md. Naimul Hasan, Sudhir Aggarwal, Qun Jane Gu, and Xiaoguang Liu, "Tunable N-Path RF Front-end Filter with an Adaptive Integrated Notch for FDD/Co-Existence," IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), Aug., 2015.

[C37] Meijiao Li, Calvin Domier, Xiaoguang Liu, and Neville Luhmann, "Wide Band MM-Wave, Double-sided Printed Bow-Tie Antenna for Phased Array Applications," (**Student Paper Competition Honorable Mention**) IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting, Jul., 2015

[C36] **(Invited)** Yuhao Liu, Hao Wang, Yusha Bey, and Xiaoguang Liu, "A Novel RF-MEMS Shunt Capacitive Switch Design for Dielectric Charging Mitigation," IEEE International Microwave Workshop Series on Advanced Materials and Processes for RF and THz Applications, Jul, 2015.

[C35] Akash Anand, and Xiaoguang Liu, "Capacitively Coupled Coaxial-Cavity Bandstop Filters with Tunable Center Frequency and Bandwidth," IEEE MTT-S International Microwave Symposium (IMS), May, 2015.

[C34] Danqing Fu, Yusha A. Bey, Calvin Domier, Neville C. Luhmann Jr., and Xiaoguang Liu, "A Q-Band RF-MEMS Tapered True Time Delay Line for Fusion Plasma Diagnostics Systems," IEEE MTT-S International Microwave Symposium (IMS), May, 2015.

[C33] Qianteng Wu, and Xiaoguang Liu, "A 3.4–3.6-GHz High Efficiency Gallium Nitride Power Amplifier Using Bandpass Output Matching Network," IEEE MTT-S International Microwave Symposium (IMS), May, 2015.

[C32] James T.S. Do, and Xiaoguang Liu, "A 75-110GHz Micro-Machined High-Q Tunable Filter," IEEE Wireless and Microwave Technology Conference (WAMICON), Apr, 2015.

[C31] **(Invited)** Xiaoguang Liu, "Tunable RF and Microwave Filters," IEEE Wireless and Microwave Technology Conference (WAMICON), Apr, 2015.

[C30] Songjie Bi, Dennis Matthews, and Xiaoguang Liu, "An experimental study of 2-D cardiac motion pattern based on contact radar measurement," IEEE Wireless and Microwave Technology Conference (WAMICON), Apr, 2015.

[C29] Chan Ho Kim, Kai Chang, and Xiaoguang Liu, "Varactor Tuned Ring Resonator Filter With Wide Tunable Bandwidth," IEEE Radio and Wireless Symposium (RWS), Jan, 2015.

[C28] Qi Jiang, Danqing Fu, Fengqi Hu, Meijiao Li, Calvin W. Domier, Xiaoguang Liu, Neville C. Luhmann, "Mixer and beamforming advances in millimeter-wave imaging," International Conference on Infrared, Millimeter, and Terahertz waves (IRMMW-THz), Sep, 2014.

[C27] Md. Naimul Hasan, Sudhir Aggarwal Qun Jane Gu, and Xiaoguang Liu, "Reconfigurable N-path RF front-end filter with improved blocker rejection," IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), Aug, 2014.

[C26] Akash Anand and Xiaoguang Liu, "Substrate-Integrated Coaxial-Cavity Filter With Tunable Center Frequency and Reconfigurable Bandwidth," **(Best student paper)** IEEE Wireless and Microwave Technology Conference (WAMICON), Jun, 2014.

[C25] Yuhao Liu, Yusha Bey, Xiaoguang Liu, "Single-Actuator Shunt-Series RF-MEMS Switch," IEEE MTT-S International Microwave Symposium (IMS), Jun, 2014.

[C24] Bo Yu, Yuhao Liu, Xing Hu, Xiaoxin Ren, Xiaoguang Liu, Qun Jane Gu, "Micromachined Sub-THz Interconnect Channels for Planar Silicon Processes," IEEE MTT-S International Microwave Symposium (IMS), Jun, 2014.

[C23] Bo Yu, Yuhao Liu, Xing Hu, Xiaoxin Ren, Xiaoguang Liu, Qun Jane Gu, "Micromachined Silicon Channels for THz Interconnect," **(Best conference paper)** IEEE Wireless and Microwave Technology Conference (WAMICON), Jun, 2014.

[C22] Akash Anand, Yuhao Liu, and Xiaoguang Liu, "Substrate Integrated Octave-Tunable Bandstop Filter with Surface Mount Varactors," IEEE MTT-S International Wireless Symposium (IWS), Apr, 2014.

[C21] Yuhao Liu, Akash Anand, Xiaoguang Liu, "Design of Low Phase-Noise Voltage-Controlled Oscillator Using Tunable Evanescent-Mode Cavity," IEEE Radio and Wireless Symposium (RWS), Jan, 2014.

[C20] Akash Anand, Joshua Small, Muhammad Shoaib Arif, Michael Sinani, Dimitrios Peroulis, and Xiaoguang Liu, "A Novel High-Qu Octave-Tunable Resonator with Lumped Tuning Elements," IEEE MTT-S International Microwave Symposium (IMS), Jun, 2013

[C19] Eric Naglich, Xiaoguang Liu, Dimitrios Peroulis, and William Chappell, "MEMS-Tunable Highly-Loaded Cavity Bandstop Filters for X Band and Beyond," Government Microcircuit Applications and Critical Technologies (GOMACTech) Conference, Mar, 2013

[C18] Akash Anand, Joshua Small, Hjalti Sigmarsson, Xiaoguang Liu, "Tunable RF Filters Based on Radially Loaded Evanescent-mode Cavity Resonators," USNC-URSI National Radio Science Meeting, Jan, 2013

[C17] Joshua S. Benjestorf, and Xiaoguang Liu, "Non-Mating Connector (NMC) for USB 3.0 - A Quality Waterproof Connection," International Conference on Consumer Electronics, Jan, 2013

[C16] Xiaoguang Liu, Eric Naglich, and Dimitrios Peroulis, "Non-linear Effects in MEMS Tunable Bandstop Filters," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2012.

[C15] **(Invited)** Xiaoguang Liu and Dimitrios Peroulis, "Tunable 3-D MEMS Components for Reconfigurable RF Front-Ends," IEEE International Symposium on Antennas and Propagation, Jul, 2011.

[C14] Xiaoguang Liu, Adam Fruehling, Linda Katehi, William J. Chappell and Dimitrios Peroulis, "Capacitive Monitoring of Electrostatic MEMS Tunable Evanescent-mode Cavity Resonators," European Microwave Symposium, Oct., 2011.

[C13] Muhammad S. Arif, Xiaoguang Liu, Wasim Irshad, William J. Chappell, and Dimitrios Peroulis, "A High-Q Magnetostatically-tunable All-silicon Evanescent Cavity Resonator," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2011.

[C12] Kenle Chen, Xiaoguang Liu, William J. Chappell, and Dimitrios Peroulis, "Integrated Design of Power Amplifier and Narrowband Filter using High-Q Evanescent-Mode Cavity Resonator," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2011.

[C11] Xiaoguang Liu, Kenle Chen, Linda P. B. Katehi, William J. Chappell and Dimitrios Peroulis, "System-level Characterization of Bias Noise Effects on Electrostatic RF MEMS Tunable Filters," International Conference on Micro Electro Mechanical Systems (MEMS), Jan., 2011.

[C10] Wesley N. Allen, Xiaoguang Liu, and Dimitrios Peroulis, "Hermetically-Sealed Evanescent-mode Resonators Utilizing Packaging as Cavities," IEEE Radio and Wireless Symposium (RWS), Jan., 2010

[C9] Wesley N. Allen, Joshua Small, Xiaoguang Liu, and Dimitrios Peroulis, "Bandwidth-optimal Single Shunt-capacitor Matching Networks for Parallel RF Loads of Q $\gg$ 1," Asia-Pacific Microwave Conference (APMC), Dec., 2009

[C8] Joshua Small, Xiaoguang Liu, and Dimitrios Peroulis, "Electrostatically Tunable Analog Single Crystal Silicon Fringing Field MEMS Varactors," Asia-Pacific Microwave Conference (APMC), Dec., 2009

[C7] Xiaoguang Liu, Linda P. B. Katehi, and Dimitrios Peroulis, "Non-toxic Liquid Metal Microstrip Resonators," Asia-Pacific Microwave Conference (APMC), Dec., 2009

[C6] Xiaoguang Liu, Linda P. B. Katehi, William J. Chappell, and Dimitrios Peroulis, "Power Handling Capability of High-Q Evanescent-mode RF MEMS Resonators with Flexible Diaphragm," Asia-Pacific Microwave Conference (APMC), Dec., 2009

[C5] Anurag Garg, Joshua Small, Ajit Mahapatro, Xiaoguang Liu, and Dimitrios Peroulis, "Impact of Sacrificial Layer Type on Thin Film Metal Residual Stress," IEEE Sensors Conference, Oct., 2009

[C4] Xiaoguang Liu, Linda P. B. Katehi, William J. Chappell, and Dimitrios Peroulis, "A 3.4–6.2 GHz Continuously Tunable Electrostatic MEMS Resonator with Quality Factor of 460–530," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2009

[C3] Xin Wang, Hao-Han Hsu, Xiaoguang Liu, Wesley N. Allen, Linda P. B. Katehi, and Dimitrios Peroulis, "Frequency- and Time- Domain Adaptive RF Front-ends and Antennas," IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems, Aug., 2008

[C2] Anurag Garg, Joshua Small, Xiaoguang Liu, and Dimitrios Peroulis, "Post-release Displacement Uncertainty of Micro-Cantilevers due to Anchor Over/Under Etching," ASME International Mechanical Engineering Congress and Exposition, Oct., 2008

[C1] Xiaoguang Liu, Linda P. B. Katehi, and Dimitrios Peroulis, "MEMS Liquid Metal Through-Wafer Microstrip to Microstrip Transition," IEEE MTT-S International Microwave Symposium (IMS), Jun., 2008

Invited Talks, Seminars, and Workshops

[S10] "Optimal Design of Integrated Millimeter-wave Oscillators for Power and Efficiency," IEEE International Wireless Symposium (IWS), May., 2018

[S9] "Pushing the Limit of Integrated Millimeter-wave Signal Generation with Applications in High-Speed Interconnects," Chinese Academic of Sciences, Beijing, Feb., 2018

[S8] "Optimal Design of Integrated Millimeter-wave Oscillators for Power and Efficiency," IEEE Radio and Wireless Week (RWW), Jan., 2018

[S7] "High-Power Handling RF-MEMS Switches," IEEE International Microwave Symposium Workshop "Passive Integrated Circuits", Jun., 2017

[S6] "Tunable RF/Microwave MEMS Filters," 2012 Microwave Update (MUD), Santa Clara, Oct. 20^{th}, 2012.

[S5] "FMCW Radar as a Microwave Education Tool," 2012 Microwave Update (MUD), Santa Clara, Oct. 20^{th}, 2012.

[S4] "3-D RF-MEMS Devices for Reconfigurable Radio Front-ends," Invited Seminar, Texas Tech University, Nov. 11^{th}, 2011.

[S3] "RF-MEMS: Lessons and Prospects," Invited Seminar, University of California, Davis, Sept.23^{rd}, 2011.

[S2] "Power Handling and Dynamic Monitoring of MEMS Evanescent-mode (EVA) Tunable Resonators/Filters," (with Dimitrios Peroulis) Workshop WMJ: Recent Advances in Reconfigurable Filters, 2010 IEEE MTT-S International Microwave Symposium, May, 2010.

[S1] "Evanescent Cavity-Based Tunable RF MEMS Filters," (with Dimitrios Peroulis) Workshop WFD: Emerging Applications of RF-MEMS, 2009 IEEE MTT-S International Microwave Symposium, Jun. 2009.

Patents

[P8] Xiaoguang Liu, Xudong He, Yuehui Ouyang, "Tunable Filter," US Provisional Patent Application No.: 62/645,489, 2018

[P7] Chang Liu, Xiaoguang Liu, "A Quarter-rate Serial Link Receiver with Low Aperture Delays," US Provisional Patent Application No.: 62/655,064, 2018

[P6] Dennis Matthews, Xiaoguang Liu, Songjie Bi, "Portable Heart Motion Monitor," US Patent Application No.: 2015/035,9463

[P5] Joshua Hihath, Xiaoguang Liu, Maria L. Marco,"On-chip Platform for Single-Molecule Electrical Conductance Measurements," US Patent Application No.: US 2015/646,956

[P4] Qun Gu, Xiaoguang Liu, Neville C. Luhmann, JR., Bo Yu, "Sub-terahertz/terahertz Interconnect,", US Patent No.: US 9,978,676, May, 2018

[P3] Dimitrios Peroulis, Akash Anand, Joshua Azariah Small, Xiaoguang Liu, Muhammad Shoaib Arif, Mihal Sinani,"Tunable cavity resonator having a post and variable capacitive coupling," US Patent No.: US 9,325,052, Apr, 2016

[P2] Dimitrios Peroulis, Adam Fruehling, Joshua Azariah Small, Xiaoguang Liu, Wasim Irshad, and Muhammad Shoaib Arif, "Tunable Cavity Resonator Including A Plurality of MEMS Beams," US Patent No.: US 9,166,271, Oct, 2015

[P1] Himanshu Joshi, Hjalti Hreinn Sigmarsson, Dimitrios Peroulis, William J Chappell, and Xiaoguang Liu, "Tunable Evanescent-Mode Cavity Filter,", US Patent No.: US 9,024,709, May, 2015

Service

2009–Present **Technical reviewer**.

- AEÜ – International Journal of Electronics and Communications
- IEEE Access
- IEEE Communications Magazine
- IEEE Electron Device Letters
- IEEE Journal on Emerging and Selected Topics in Circuits and Systems
- IEEE/ASME Journal of Microelectromechanical Systems
- IEEE Microwave and Wireless Component Letters
- IEEE Transactions on Components, Packaging and Manufacturing Technology
- IEEE Transactions on Instrumentation and Measurement
- IEEE Transactions on Microwave Theory and Techniques
- IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control
- IET Electronics Letters
- IET Microwaves, Antennas & Propagation
- IMAPS Journal of Microelectronics and Electronic Packaging
- International Journal of Circuit Theory and Applications
- Sensors
- Sensors & Actuators: A. Physical

2017–Present **Steering committee**, *2018 IEEE Wireless and Microwave Technology Conference (WAMICON).*

2017–Present **Steering committee**, *2018 IEEE MTT-S International Microwave Symposium (IMS).*

2014–2016 **Steering committee**, *2016 IEEE MTT-S International Microwave Symposium (IMS).*

2014–2017 **Technical program co-chair**, *2015–2017 IEEE Wireless and Microwave Technology Conference (WAMICON).*

2012–2013 **Steering committee**, *2013 IEEE MTT-S International Microwave Symposium (IMS).*

2012–2013 **Technical Reviewer Committee**, *IEEE Wireless and Microwave Technology Conference (WAMICON).*

2012, 2017 **Panel reviewer**, *National Science Foundation (NSF).*

2010–2012 **Technical Reviewer Committee**, *Asia Pacific Microwave Conference (APMC).*

2006–2007 **President**, *Purdue University Chinese Students and Scholars Association (PUCSSA).*

Mentoring

Current Students and Researchers

2012– **Akash Anand** *Ph.D.*

2012– **Songjie Bi** *Ph.D.*

2016– **Jingjun Chen** *M.S*

2016–	**Joseph Cooney**	*M.S*
2016–	**James T.S. Do**	*Ph.D.*
2017–	**Xiaomeng Gao**	*Postdoc*
2016–	**Kiran Iyer**	*M.S*
2017–	**Xiaonan Jiang**	*Ph.D.*
2015–	**Daniel Kuzmenko**	*Ph.D.*
2017–	**Chang Liu**	*Postdoc*
2016–	**Mahmoud Ali Nafe**	*Ph.D.*
2016–	**Hind Reggad**	*Ph.D.*
2014–	**Hao Wang**	*Ph.D.*
2013–	**Bo Yu**	*Ph.D., co-advised with Prof. Jane Q. Gu*
2016–	**Li Zhang**	*M.S*

Past Students and Researchers

2018	**Asem Elshimi**	*M.S.*
2012–2017	**Md. Naimul Hasan**	*Ph.D., co-advised with Prof. Jane Q. Gu*
2011–2017	**Fengqi Hu**	*Ph.D., co-advised with Prof. Neville C. Luhmann, Jr.*
2011–2017	**Meijiao Li**	*Ph.D., co-advised with Prof. Neville C. Luhmann, Jr.*
2012–2017	**Yuhao Liu**	*Ph.D.*
2013–2016	**Hooman Rashtian**	*Postdoc*
2015–2015	**Juan Zeng**	*Postdoc*
2013–2015	**Minjie Zhu**	*M.S.*
2013–2015	**Samuel Cheung**	*M.S.*
2013–2015	**Qianteng Wu**	*M.S.*
2012–2014	**Danqing Fu**	*Ph.D., co-advised with Prof. Neville C. Luhmann, Jr.*
2013–2014	**Yaping Liang**	*Postdoc*
2013–2014	**Chan-Ho Kim**	*Postdoc*
2012–2014	**Yusha Bey**	*Postdoc*

Funded Research Projects

2017–2019 **STTR Phase II: Radar-based Contact-mode Heart Health Monitoring**, *National Science Foundation*, Lead PI, Total: $750 000; UCD: $350 000.

2017–2019 **SPAR Phase I & II: Low Power Plug-and-Play RF Front-End Signal Processing for High Gain Spread Spectrum Communications and Jamming Rejection**, *Defense Advanced Research Projects Agency*, Lead PI, Total: $1 161 000; UCD: $780 000.

2017–2019 **Wearable Cardiac Arrhythmia Monitor based on Low-Power Radar Principle**, *Philipines-Califronia Advanced Research Institutes*, Lead PI, Total: $181 000; UCD: $181 000.

2017–2018 **REnewALL—21st Century Solutions for 20th Century Wind Projects**, *California Energy Commission*, Co-PI, Total: $935 000; UCD: $935 000.

2016–2017 **Ultra-low-power Sensors using Aluminum Nitride Micro-Electromechanical (MEMS) Resonators**, *Catalyst Foundation*, Lead PI, Total: $20 000; UCD: $20 000.

2016–2017 **Monitoring of Atrial Fibrillation Using Ultrawideband Micro-Impulse Radar (MIR) - Extension**, *Tahoe Institute of Rural Health Research*, Lead PI, Total: $172 000; UCD: $172 000.

2016–2017 **NZERO Phase I: Ultralow Power Microsystems via an Integrated Piezoelectric MEMS-CMOS Platform**, *Defense Advanced Research Projects Agency*, Co-PI, Total: $650 000; UCD: $400 000.

2016–2016 **STTR Phase I: Ka-Band, kW Power, GaN Amplifier with Sequential Combining**, *Missile Defense Agency*, Co-PI, Total: $30 000; UCD: $30 000.

2015–2016 **Monitoring of Atrial Fibrillation Using Ultrawideband Micro-Impulse Radar (MIR) - Extension**, *Tahoe Institute of Rural Health Research*, Lead PI, Total: $20 000; UCD: $20 000.

2015–2016 **MRI: Acquisition of a Plasma Enhanced Chemical Vapor Deposition (PECVD) Tool with Inductively Coupled Plasma (ICP)**, *National Science Foundation*, Co-PI, Total: $490 000; UCD: $490 000.

2015–2015 **Spacecraft-Inspection Cubesat**, *National Aeronautics and Space Administration*, Co-PI, Total: $77 000; UCD: $77 000.

2014–2015 **STTR Phase I: Radar-based Contact-mode Heart Health Monitoring**, *National Science Foundation*, Lead PI, Total: $80 000; UCD: $80 000.

2014–2017 **EARS: Reconfigurable Bandpass Receivers for Software-Defined Radio Applications**, *National Science Foundation*, Lead PI, Total: $500 000; UCD: $500 000.

2014–2014 **Agilent Modular VSA/G Contest Runner-Up Award**, *Agilent Technologies*, Lead PI, Total: $14 000; UCD: $14 000.

2013–2014 **Monitoring of Atrial Fibrillation Using Ultrawideband Micro-Impulse Radar (MIR) - Extension**, *Tahoe Institute of Rural Health Research*, Lead PI, Total: $20 000; UCD: $63 000.

2012–2013 **Interference Tolerant Wireless Systems**, *Hellman Foundation*, Lead PI, Total: $29 000; UCD: $29 000.

2012–2014 **Development of a MEMS Integrated Inductor**, *Pine Tree Technologies*, Lead PI, Total: $120 000; UCD: $120 000.

2012–2013 **Investigation of Novel Microwave Ablation Techniques for Caner Treatment**, *American Cancer Society Institutional Research Grant*, Lead PI, Total: $36 000; UCD: $36 000.

2012–2013 **Highly Tunable High-Q Varactors Based on Thick-film Piezoelectric Actuators**, *UC Davis Academic Senate*, Lead PI, Total: $25 000; UCD: $25 000.

2012–2012 **A Microwave Filter Broadly Tunable With a Surface Acoustic Wave**, *Defense Advanced Research Projects Agency*, Lead PI, Total: $48 000; UCD: $48 000.