USC Viterbi
School of Engineering
Ming Hsieh Department of
Electrical and Computer Engineering

Ming Hsieh Institute Seminar Series

Semiconductors and Microelectronics Technology

MEMS for Next Generation Radio Frequency and Biomedical Applications

Azadeh Ansari
School of Electrical and Computer Engineering
Georgia Institute of Technology

Date: Thursday, Nov. 21st, 2024
Time: 2:15pm– 3:30pm PT
Location: EEB 248

Abstract: With the ever-increasing number of wireless devices, the frequency spectrum is getting more crowded and the need for signal filtering at emerging wireless bands is ever more critical. Recent advances in thickness downscaling of piezoelectric transducers have opened up new horizons for resonator operation at the millimeter wave frequencies; and enabled the use of nonlinearities in nanomechanical devices. I will present my group's work on developing novel Aluminum Scandium Nitride acoustic resonators, as well as nanomechanical frequency combs.

In the second part of the talk, I will present my group's work on the fabrication, actuation and control of micro robotics systems. The recent advances in the nanofabrication and 3D printing at the nanoscale offer robotic solutions at exceedingly small scales that are instrumental for biomedical applications.

Biography: Azadeh Ansari is an Associate Professor in the School of Electrical and Computer Engineering at Georgia Tech. Her research focuses on resonant MEMS, acoustics, micromachined integrated sensors, and micro-robotics. She earned the M.S and Ph.D. degrees in Electrical Engineering from University of Michigan, Ann Arbor in 2013 and 2016. Prior to joining Georgia Tech, she was a postdoctoral scholar in the Physics Department at Caltech. She is the recipient of the 2023 IEEE Transducers Early Career Award, 2021 Roger Webb Outstanding Junior Faculty Award from Georgia Tech, 2020 NSF CAREER award, 2017 ProQuest Distinguished Dissertation Award from the University of Michigan, as well as 2016 University of Michigan Richard and Eleanor Towner Prize for outstanding Ph.D. research.

Hosted by Prof. J. Joshua Yang, Prof. Chongwu Zhou, Prof. Stephen Cronin, and Prof. Wei Wu.
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