

OSA & SPIE Purdue Student Chapter 2015 Seminar Sessions



Speaker: Prof. Mona Jarrahi (UCLA)

Title: Pushing the Limits of Terahertz Optoelectronics

About the lecture:

Although unique potentials of terahertz waves for chemical identification, material characterization, biological sensing, and medical imaging have been recognized for quite a while, the relatively poor performance, higher costs, and bulky nature of current terahertz systems continue to impede their deployment in field settings. In this talk, I will describe some of our recent results on developing fundamentally new terahertz electronic/optoelectronic components and imaging/spectrometry architectures to mitigate performance limitations of existing terahertz systems. In specific, I will introduce new designs of high-performance photoconductive terahertz sources that utilize plasmonic antennas to offer terahertz radiation at record-high power levels of several milliwatts – demonstrating more than three orders of magnitude increase compared to the state of the art. I will also briefly highlight our research activities on development of new types of high-performance terahertz passive components (e.g., modulators, tunable filters, and beam deflectors) based on novel reconfigurable meta-films.

Brief bio:



Mona Jarrahi received Ph.D. degree in Electrical Engineering from Stanford University in 2007. She served as a Postdoctoral Scholar at University of California Berkeley from 2007 to 2008. After serving as an Assistant Professor at University of Michigan, she joined University of California Los Angeles in 2013 as an Associate Professor of Electrical Engineering and the Director of the Terahertz Electronics Laboratory. In recognition of her outstanding achievements, Prof. Jarrahi has received numerous prestigious awards in her career including the Presidential Early Career Award for Scientists and Engineers (PECASE); Early Career Award in Nanotechnology from the IEEE Nanotechnology Council; Outstanding Young Engineer Award from the IEEE Microwave Theory and Techniques Society. She has also been named a Kavli Fellow by the National Academy of Sciences. Prof. Jarrahi is a senior member of IEEE, OSA, and SPIE societies and serves as a member of the Terahertz Technology and Applications Committee of IEEE Microwave Theory and Techniques, an editorial board member of Journal of Infrared, Millimeter and Terahertz Waves, a Distinguished Lecturer of IEEE Microwave Theory and Techniques Society, and a Visiting Lecturer of SPIE.

March 23th (Mon), 11am-noon @ BRK 2001

Snacks and beverages will be provided.