**Talk:** Advanced Plasmonic Photoconductive Sources for Pulsed and Continuous-Wave Terahertz Generation

**Abstract:**

Terahertz technology has attracted extensive attention because of its unique applications in environmental monitoring, space explorations, chemical identification, security screening, medical imaging, and biological sensing. In the meantime, the practical feasibility of many terahertz systems is still limited by the relatively low power, low efficiency, and bulky nature of existing terahertz sources. In this talk, I will present some of our recent results on achieving high-performance terahertz sources to mitigate performance limitations of existing terahertz systems. By incorporating plasmonic contact electrodes on photoconductive antennas, we have successfully demonstrated high-performance photoconductive terahertz sources with record-high optical-to-terahertz conversion efficiencies and record-high power levels of several milliwatts. With this terahertz generation scheme, it offers a very promising solution for future high-performance and compact terahertz imaging and sensing systems.

**Short Bio:**

Shang-Hua Yang received his B.S. degree in electrical engineering from National Tsing Hua University, Taiwan, in 2007, M.S. degree in electrical engineering from National Chiao Tung University, Taiwan, in 2009, and Ph.D. degree in electrical engineering from the University of Michigan Ann Arbor in 2016. He is currently an assistant professor at electrical engineering department at National Tsing Hua University. Prof. Yang's research interests include microwave photonics, terahertz electronic devices, terahertz medical imaging, ultrafast electro-optics, and plasmonic photonics. He has authored and coauthored over 60 refereed papers in peer-reviewed journals and conference proceedings on these topics. Prof. Yang has received several prestigious awards and scholarships including the United Microelectronics Corporation Scholarship (2007), Rotary Education Foundation Best Student Award (2008), SPIE Scholarship in Optics and photonics (2012), IEEE Antennas and Propagation Society Doctoral Research Award (2014), Rackham Summer Graduate Student Award (2015), Taiwanese Government Scholarship to Study Abroad (2015), and Joan and Irvin Jacobs TIX Institute Industry Scholar (2017). He was also invited to attend the 66th Lindau Nobel Laureate Meeting in 2016.