

MRSEC SEMINAR SERIES

Manipulating Light, Matter and Energy with Plasmonic Nanotechnology

Surface plasmons are coherent oscillations of delocalized electrons at the interface of two materials. They can couple with and manipulate light at the nanoscale beyond the free-space diffraction limit. We explore the plasmon-enhanced nanoscale light and its associated thermal, mechanical, electrical and chemical properties to innovate a wide range of optical nanotechnologies for applications in health, energy, manufacturing and national security. Herein, I present our progress in three areas: (i) optothermal manipulations of colloidal particles and biological cells; (ii) plasmon-induced resonant energy transfer and hot-electron injection; and (iii) moire metasurfaces and metamaterials.

Yuebing Zheng is an assistant professor of Mechanical Engineering and Materials Science and Engineering at the University of Texas at Austin. He joined UT Austin in fall 2013 after three years' postdoctoral research (with Prof. Paul S. Weiss) at the University of California, Los Angeles. He received his Ph.D. in Engineering Science and Mechanics (with Prof. Tony Jun Huang) from the Pennsylvania State University in 2010.

His research group engages in interdisciplinary research to innovate optical nanotechnologies in health, energy, manufacturing, and national security. He has authored and co-authored over 150 journal papers, conference proceedings, book chapters and patents.

Recent awards include NASA Early Career Faculty Award (2017), ONR Young Investigator Award (2017), Royal Society of Chemistry Emerging Investigator (2016), 3M Non-Tenured Faculty Award (2015), and Beckman Young Investigator Award (2014). He is an associate editor of Journal of Electronic Materials.

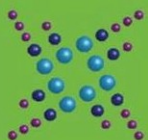


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4:00 p.m. - 5:00 p.m.



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