

EE 298-12  
Solid State Technology and Devices Seminar

Friday, 27 September 2013  
1-2pm  
Hogan Room - 521 Cory Hall

**Engineering Light-matter Interactions at the Nanoscale**

**Kenneth Crozier**  
**Harvard University**

**ABSTRACT:**

Optical methods are challenging to apply at the nanoscale, due to the large mismatch between the optical wavelength and the sizes of objects such as nanoparticles and molecules. In this talk, I will describe research projects that have addressed this challenge via the use of metal nanostructures that function as antennas at visible and near-infrared wavelengths. Applications in spectroscopy and optical manipulation will be described. In addition, I will describe work where the interaction between light and nanoscale objects has been harnessed to yield properties, specially the color of silicon.

**Bio:**

Kenneth Crozier is an Associate Professor of Electrical Engineering at Harvard University. His research interests are in nano- and micro-optics, with an emphasis on plasmonics for surface enhanced Raman spectroscopy and optical forces, optofluidics and semiconducting nanowires. He received his undergraduate degrees in Electrical Engineering (first class honors, with medal) and Physics at the University of Melbourne. He received his PhD in Electrical Engineering from Stanford University in 2003. In 2008, he was a recipient of an NSF CAREER award and a Loeb Chair at Harvard.