



# Columbia Optics and Quantum Electronics IGERT: Seminar



## Active nanophotonics: from coherent control of quantum emitters to plasmonic nanolasers



Chih-Kang (Ken) Shih

*Jane & Roland Blumberg Professor of Physics  
Department of Physics, The University of Texas at Austin,  
shih@physics.utexas.edu*

**Date/Time:** Tuesday, February 5<sup>th</sup>, 11 – 12 noon

**Location:** Interschool Lab, 7th floor Schapiro

**Abstract:** Light-matter interaction at nanometer scale is emerging as one of the most exciting fields in nanoscience. In combination with the advanced materials synthesis technique to tailor novel low-dimensional electronic systems, new doors are open toward design and realization of nanophotonic devices with novel functionalities. Here I will present two areas that have been pursued in my research group: (a) coherent control of semiconductor quantum dots as quantum light sources for quantum information applications; and (b) realization of plasmonic nanolasers that break the diffraction limit.

**Biography:** Ken Shih is the Jane & Roland Blumberg Professor of Physics at The University of Texas at Austin. He received his Ph.D. in 1988 at Stanford University. He was a postdoctoral researcher at IBM Watson Research Center until 1990 when he joined the University of Texas as an Assistant Professor. He became a full Professor in 2000. His research interests include ultrathin film growth, quantum phenomena in low-dimensional electronic systems, optical spectroscopy, and electronic properties of semiconductor nanostructures.