



Seminar

# “Visualizing Order Parameter Landscapes in Heterogeneous Superconductor Thin Films: Geometric Influences on Proximity Effects”

## Prof. Chih-Kang Shih

Department of Physics, The University of Texas at Austin

**Time: 2:00 pm, May. 23. 2011 (Monday)**

**时间: 2011年5月23日 (周一) 下午 2:00**

**Venue: Conference Room A (607), No. 5 Science Building**

**地点: 理科五号楼607会议室**

### Abstract

How does superconducting order propagate spatially in a heterogeneous superconductor system? This question is central to understanding the coherence and robustness of the superconducting state in the presence of significant proximity effects. In order to address this fundamental question, we use a low-temperature scanning tunneling microscope to measure the temperature-dependent landscapes of tunneling gaps in real space for various thin-film heterogeneous superconductor systems. Our results quantify the one-dimensional to two-dimensional crossover in superconducting-normal-superconducting junctions, and have implications for devices designed with nano-scale superconducting components.

### About the Speaker

Prof. Chih-Kang Shih obtained his PhD degree in Applied Physics from Stanford University in 1988. After postdoctoral positions at IBM Thomas J. Watson Research Center at Yorktown Heights, he joined the faculty at The University of Texas at Austin where he is currently a Professor of Physics department. His current research is focused on (1) structural, electronic and optical properties of semiconductor nanostructures; (2) quantum information processing and coherence/decoherence in semiconductor quantum dots; (3) quantum engineering of metallic nanostructures and (4) collective and quasiparticle properties in nanostructures. Now, he is a fellow of the American Physical Society, the American Vacuum Society and the Materials Research Society.