The Nano Institute of Utah
and
The Department of Bioengineering

Present

Ling Zang, Ph.D.

USTAR Associate Professor of Nanotechnology
Department of Materials Science and Engineering at the
University of Utah

Thursday 11/10 at 11:30 - 12:30
1750 HSEB

"Amplified Optoelectronic Properties of Organic Nanowires and Applications in Trace Explosives Detection"

Dr. Zang moved to the University of Utah in august 2008 from Southern Illinois University Carbondale, where he was an associate professor of chemistry and biochemistry. He was previously an Alexander von Humboldt Fellow at Erlangen-Nuremberg University in Germany, NSF CAREER Award winner, and K. C. Wong Foundation Research Fellow. He also holds an adjunct professorship at the Key Laboratory of Photochemistry, Institute of Chemistry, Beijing. Dr. Zang's current research focuses on nanoscale imaging and molecular probing, organic semiconductors and nanostructures, optoelectronic sensors and nanodevices, with the long-term goal to achieve real applications in the areas of national security, renewable energy, and clean environment. Dr. Zang has been awarded various federal grants to support his broad range of research in nanoscience and nanotechnology. Beyond the regular faculty duty on campus, Dr. Zang also remains active in organizing and chairing the nanotechnology sessions of various national and international conferences, e.g., Beckman Frontiers of Science Symposium, National Academy of Sciences, AIChE Annual Meeting, SOLARIS international conference, NanoUtah Annual Conference, etc. Dr. Zang earned his B.S. in physical chemistry from Tsinghua University and Ph.D. in chemistry from the Chinese Academy of Sciences.

Abstract
Various well-defined nanowires have been fabricated. The organized intermolecular arrangement within nanowires enables long-range enhancement of exciton migration and charge transport. Combination of these two unique features leads to development of optoelectronic sensors for vapor detection of various explosives and organic amines. The sensing mechanism is primarily based on the modulation of fluorescence emission or the electrical conductivity of the nanowires upon interaction with gaseous analytes.