

University of Pittsburgh

Petersen Institute of NanoScience and Engineering Seminar

- Speaker:** Professor Brian Korgel
Department of Chemical Engineering, University of Texas, Austin
- Title:** *Semiconductor Nanowires and Nanocrystals for Transistor and Photovoltaic Applications*
- Time/Date:** 12:00 noon, Friday, April 24, 2009
(refreshments at 12:00noon - 12:15pm)
- Place:** Kresge Conference Center, 1175 Benedum Hall

We have been working for several years to develop robust solution-based routes to the synthesis of nanocrystals and nanowires of many different semiconductors and metals. The general concept we pursue is to synthesize nanomaterials with unique size-tunable optical, electronic and optoelectronic properties and then manipulate them like building blocks into devices and materials with the potential to displace existing technologies. This talk will focus on the details of the wet chemical synthesis of silicon and germanium nanowires and copper-indium-gallium-selenide (CIGS) nanocrystals and their application as new materials for transistor and photovoltaic devices.

Biographical Sketch

Dr. Brian A. Korgel is Cockrell School of Engineering Temple Professor #1 and Matthew Van Winkle Regents Professor of Chemical Engineering at the University of Texas at Austin. He received his PhD in chemical engineering at UCLA in 1997, where he earned recognition as a UCLA Alumni Distinguished Scholar and joined the faculty at UT Austin in 1998 after a one and a half year post doctoral position in the Department of Chemistry at University College Dublin in Ireland. In 2007, he was a Senior Fulbright Fellow to Spain at the University of Alicante in the Department of Applied Physics and in 2008 was Visiting Professor in the Department of Physics at the Université Josef Fourier in France. His research is in the field of nanomaterials chemistry and engineering and is widely recognized, with more than 130 journal publications and 100 international invited seminars and lectures. He also serves as Associate Editor for the *Journal of Crystal Growth* and *Materials Science and Engineering: R* and is a member of the editorial advisory boards of the journals *Chemistry of Materials* and the *Journal of Colloid and Interface Science*. Additionally, Korgel has been influential in nanoscience education in Texas and the commercialization of new technologies invented at UT Austin. He founded the Doctoral Portfolio Program in Nanoscience and Nanotechnology at UT Austin (one of the first nanoscience PhD programs in the USA) and served for four years as an advisor on the Texas Nanotechnology Foundation Scientific Review Board. He has also co-founded two startup

companies: Innovalight in 2002 and Piñon Technologies in 2007. Innovalight is a venture-backed company now located in Santa Clara, CA, which among its various accolades was selected for a Technology Pioneer Award with the World Economic Forum in 2006 and a Red Herring R&D 100 Award in 2007. Piñon is located in Austin, TX, and is focused on the development of nanocrystal and nanowire technologies.