



NSAC-NCN Seminar Series

“Nano solutions to our impending energy crisis”

Prof. Ali Shakouri, Director, Birck Nanotechnology
Center, Purdue University

Date: Wednesday, February 15, 2012

Time: 12:00 PM-1:00 PM

Venue: Birck 1001



Abstract: In this talk we review some of the advances in nanoscale energy conversion devices and discuss about the challenges and opportunities to provide a clean energy infrastructure. Couple of examples from solar and thermoelectric materials, devices and systems will be given and the scale of the necessary change will be discussed.

Bio: Ali Shakouri is the Director of Birck Nanotechnology Center and is a Professor of Electrical and Computer Engineering at Purdue University. He received his master's and doctoral degrees from the California Institute of Technology in 1995 and his bachelor's degree in engineering from Telecom ParisTech in France in 1990. From 1995-1998 he was an Assistant Research Engineer at the University of California, Santa Barbara. He then became a faculty member at the University of California, Santa Cruz in electrical engineering in 1998 and rose through the ranks to professor. He joined the faculty at Purdue University in October 2011.

Dr. Shakouri's research focuses on nanoscale heat and current transport in semiconductor devices, high-resolution thermal imaging, micro refrigerators on a chip and waste-heat recovery. At the University of Santa Cruz, he directed the Thermionic Energy Conversion Center, a multiuniversity collaboration including Purdue that is working to improve direct thermal to electric energy conversion technologies. Project researchers are exploring the capacity of nanostructured materials to channel the random jostling of heat energy into the orderly flow of electricity. The research has applications in advancing technology for electric-powered ships and other electric vehicles.

Dr. Shakouri received a Packard Fellowship in Science and Engineering in 1999 and a NSF Career Award in 2000. He is the author or co-author of 6 book chapters, 115 papers in reviewed journals and 117 papers in refereed proceedings. He has also presented numerous invited lectures nationally and internationally.