PURDUE UNIVERSITY Discovery Park nanoHUB: online simulation and more

NCN/INAC Tutorial Lecture

Atomistic Alloy Disorder in Nanostructures

Wed. Feb. 7, 2007, 2:00 – 3:00pm, EE 317

NETWORK FOR COMPUTATIONAL NANOTECHNOLOGY

ABSTRACT

Electronic structure and quantum transport simulations are typically performed in perfectly ordered semiconductor structures. Bands and modes are defined resulting in quantized conduction and discrete states. But what if the material is fundamentally disordered? What if the disorder is at the same length scale as the device itself? This presentation will provide an introduction to the intriguing physics of disordered systems in bulk, quantum dots, nanowires, and quantum wells. The general tool electronic structure tool NEMO 3-D is used for the simulation of atomistically disordered systems that are of realistically large length-scales containing millions of atoms.

Note: this seminar is being taped for the nanoHUB's Nanotechnology 501 Seminar Series at
http://www.nanohub.org/education/nanotechnology501

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Gerhard Klimeck is the Technical Director of the Network for Computational Nanotechnology at Purdue University and a Professor of Electrical and Computer Engineering since Dec. 2003. He was the Technical Group Supervisor at the NASA Jet Propulsion Laboratory. His research interest is in the modeling of nanoelectronic devices, parallel cluster computing, and genetic algorithms.

WHEN

Wednesday, February 7, 2007
2:00pm to 3:00pm

WHERE

Room 317, Electrical Engineering Building
Purdue University, West Lafayette, IN 47907

The Network for Computational Nanotechnology is supported by the National Science Foundation, Indiana 21st Century Fund, and ARO. It has a vision to pioneer the development of nanotechnology from science to manufacturing through innovative theory, exploratory simulation, and novel cyberinfrastructure.