

# FUNDAMENTALS OF NANO-ELECTRONICS

Online course broadly accessible to students in any branch of science or engineering

Registration opens Nov 1, 2011



## Starting January 2012 PART I: BASIC CONCEPTS

Week 1  
The New "Ohm's Law"

Week 2  
Quantum of Conductance

Week 3  
The Nanotransistor

Week 4  
The Spinning Electron

Week 5  
Electricity from Heat

## Coming in March 2012 PART II: QUANTUM MODELS

See schedule online

Enrollment is Limited  
[HTTP://NANO HUB.ORG/U](http://nanohub.org/u)



For a nominal registration fee, students will gain access to:

- Letter of recognition for successfully completing the course. Special recognition for top 25%.
- Online forum to interact with faculty & other students.
- Lectures distilling the essential concepts of nanoelectronics into concise 5-week modules.
- Lecture notes (300+ pages) from Prof. Datta's forthcoming book.
- Homework exercises with solutions, MATLAB codes, and video tutorials.
- Continuing Education Units available (for additional fee).

## INSTRUCTOR

Supriyo Datta

Datta is the Thomas Duncan Distinguished Professor at Purdue University. His books—*Electronic Transport in Microscopic Systems* (Cambridge, 1995) and *Quantum Transport: Atom to Transistor* (Cambridge, 2005)—are



standard texts in the field of nanoelectronics. He is a Fellow of the IEEE and the American Physical Society and

has received many awards, most recently the Procter Prize for "outstanding contribution to scientific research and has demonstrated an ability to communicate the significance of this research in other disciplines."

“His amazingly simple style of teaching has helped me clear a lot of concepts.”