



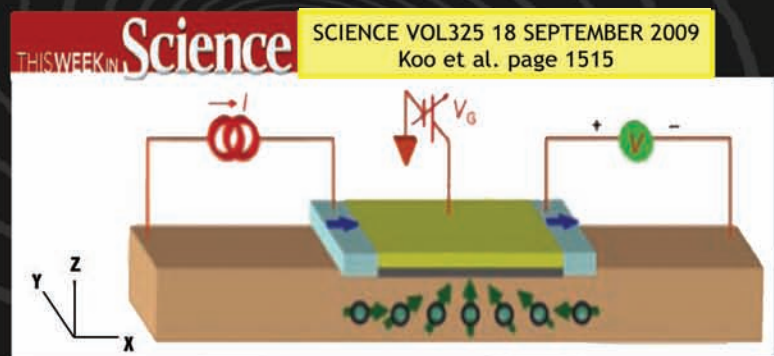
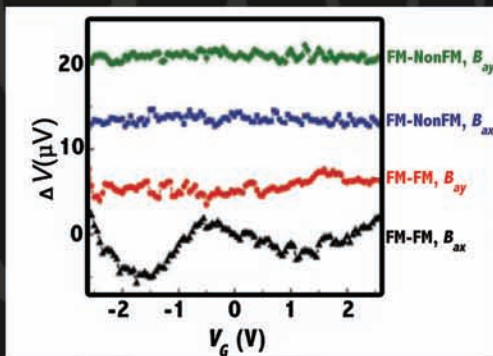
ECE Distinguished Lecture

Supriyo Datta, Purdue University

Thursday, April 29th, 2010, 3:00pm Elings Hall, Room 1601

“Spin Transistor and Beyond”

Electronic devices have traditionally been based on controlling the flow of charge. However, electrons carry both charge and "spin", the latter being responsible for magnetic phenomena. In the last ten years there have been significant advances in our ability to control the spin current in electronic devices, which also shed light on the subtleties of the quantum world and how quantum objects like spin interact with everyday objects like magnets. Assuming no background or prior acquaintance, this talk will present a general introduction to these recent developments (like the attached example recently published in Science) and suggest possible ways to harness them for a new class of information processing devices (Behin Aein et al., Nature Nanotechnology, 5, 266 (2010)).



Supriyo Datta is the Thomas Duncan Distinguished Professor of Electrical and Computer Engineering at Purdue University. The approach pioneered by his group for the description of quantum transport far from equilibrium has been widely adopted in the field of nanoelectronics, as described in his books *Electronic Transport in Mesoscopic Systems* (Cambridge 1995) and *Quantum Transport: Atom to Transistor* (Cambridge 2005). He is also well known for his contributions to molecular and spin electronics and has received IEEE Technical Field awards both for research and for graduate teaching.