

UNIVERSITY OF TEXAS AT DALLAS - DEPARTMENT OF PHYSICS

PHYSICS COLLOQUIUM

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Wednesday, October 10, 2007; 4:00-5:00 PM
Kusch Auditorium, FN 2.102

Nanoscience Research at Clemson University

Professor A. M. Rao

Department of Physics and Astronomy, Clemson University

One-dimensional materials have attracted enormous interest because of their unique fundamental properties and potential technological applications. I'll discuss our recent research activities involving carbon nanotubes and bismuth nanorods, and introduce the harmonic detection of resonance (HDR) method which was developed at Clemson University for probing mechanical and gas sensing properties of micro- and nano-sized cantilevers. Thermal CVD-based methods for preparing nanotubes with controlled morphologies, and applications based on their ensuing properties will be also presented. Finally, strong spectroscopic evidences for quantum confinement in laser-produced bismuth nanorods will be presented.

About the speaker: Dr. Apparao M. Rao is currently a professor in the condensed matter physics group at Clemson University. He received his Ph.D. in physics from the University of Kentucky in 1989. He held a postdoctoral appointment with Prof. Mildred Dresselhaus at MIT until 1991. His current research is focused on understanding and controlling the synthesis of 1D nanostructured organic and inorganic materials. He has published more than 145 papers and 21 review articles and book chapters, and has 6 patents awarded. In 2006 Clemson University conferred on him a Best researcher award. Dr. Rao serves as an editorial board member for two international journals, and a scientific advisory board member for two companies.