# Munushian Visiting Lecturer Series

# Wednesday, April 25, 2007

## Dr. Mildred Dresselhaus

Institute Professor,
Massachusetts Institute of Technology

## *"Photophysics of Carbon Nanotubes"*

Hedco Neuroscience Building (HNB 100)
**Lecture** 11:00 AM
Hosted by Prof. Hossein Hashemi

Abstract

The use of resonance Raman spectroscopy to reveal the remarkable optical properties of carbon nanotubes arising from their one-dimensionality will be briefly reviewed. Particular emphasis will be given to the difference in behavior between semiconducting and metallic nanotubes and the dependence of these behaviors on diameter and chirality. Some of the recent advances in single nanotube photophysics based on both resonance Raman spectroscopy and photoluminescence will be discussed. A brief summary will then be given of current photophysics research directions pursued in my research group.

Bio

Mildred Dresselhaus is an Institute Professor of Electrical Engineering and Physics at MIT. She is a member of the National Academy of Sciences, the National Academy of Engineering, and has served as President of the American Physical Society, Treasurer of the National Academy of Sciences, President of the American Association for the Advancement of Science (AAAS), and on numerous advisory committees and councils. Dr. Dresselhaus has received numerous awards, including the National Medal of Science and 22 honorary doctorates worldwide. She is the co-author of four books on carbon science and is particularly well known for her work on carbon nanotubes and other nanostructural systems. Her research over the years has covered a wide range of problems in Condensed Matter and Materials Physics. She is presently co-chair of a National Academy Decadel Study of Condensed Matter and Materials Physics and is coming out this year with two new books, one entitled "Applications of Group Theory to the Physics of Condensed Matter" and the second entitled "Carbon Nanotubes: New Topics in the Synthesis, Structure, Properties and Applications." In February she was named the North American Laureate for the 2007 L'Oreal-UNESCO Award for Women in Science.