Please Join Us as
Dr. Cristina Amon Presents:

Hierarchical Thermal Transport in
Nanoscale Semiconductors

Abstract: Thermal modeling of current and future electronics requires consideration of a broad range of spatial and temporal scales spanning six orders of magnitude. This talk describes hierarchical modeling of sub-continuum heat transfer with Boltzmann transport equation, as well as lattice Boltzmann and atomistic molecular dynamics approaches. It also outlines the challenges to model nanoscale thermal transport and to integrate solutions across multiple length scales ranging from nanometers to macro scales. For illustration purposes, relevant thermal behavior in thin films, self-heating in silicon-on-insulator transistors and transient electrostatic discharges are considered.

Cristina H. Amon, Distinguished Professor in mechanical engineering, and Dean of the Faculty of Applied Science and Engineering at the University of Toronto, has pioneered the development of Computational Fluid Dynamics (CFD) for formulating and solving thermal design problems with applications in hemodynamics mass transport in biological systems (aneurysms and intravenous blood oxygenators), in electronics cooling and transient thermal management of wearable computers, and in nano-scale heat transport in semiconductors. Her achievements in education cover the whole spectrum of integrating education, research and engineering practice. She was named one of America’s most important Hispanics in technology and business, and received the Engineers Canada Award for the Support of Women in the Engineering Profession in 2010. Additionally, she is a member of the National Academy of Engineering, Canadian Academy of Engineering and Spanish Royal Academy of Engineering.

Monday, April 18, 2011 - 3:30 PM – 4:30 PM
McArthur Engineering Annex – Room MEA202, Coral Gables

Light Refreshments will be provided
For more information, please contact Anne Schaefer at 305-284-2908 or Aschaerl@miami.edu