



# MRL

FREDERICK SEITZ MATERIALS RESEARCH LABORATORY



**10:00 AM, Friday, October 3, 2008  
Room 280 MRL**

## **The Use of Thermogravimetry (TGA) and Differential Scanning Calorimetry (DSC) In the Thermal Characterization of Materials**

**Dr. Kadine Mohomed**  
Applications Support Manager  
TA Instruments

TA Instruments will present a technical seminar encompassing the use of thermal characterization techniques that can be used to determine material properties. The techniques that will be discussed will include thermogravimetry (TGA) and differential scanning calorimetry (DSC). Various aspects of TGA, in particular high temperature TGA, high pressure TGA, and sorption/desorption of moisture or solvents will be detailed. Thermogravimetric Analysis (TGA) measures the amount and rate of change in the weight of a material as a function of temperature or time in a controlled atmosphere. Measurements are used primarily to determine the composition of materials and to predict their thermal stability and decomposition kinetics. The technique can characterize materials that exhibit weight loss or gain due to decomposition, oxidation, or dehydration.

DSC measures endothermic and exothermic transitions in a material as a function of temperature and time. It can be used in the identification of amorphous & crystalline material, identification of phase transitions and changes of state, the measurement of specific heat capacity, heats of fusion & reactions, oxidative/thermal stability and reaction kinetics. The details of data analysis and method development will also be covered.

*Facilites Seminar Series*