



**MATERIALS DEPARTMENT / MRL
JOINT COLLOQUIUM**

Friday, October 30, 2009, 4:00 PM, MRL 2053



PLEASE NOTE ROOM CHANGE

**“Scanning Transmission Electron Microscopy: Quantitative
Comparisons between Theory and Experiment”**

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Abstract

Quantitative imaging at the atomic scale remains an active area of research within the electron microscopy community. One of the most promising techniques is high angle annular dark-field scanning transmission electron microscopy (HAADF STEM) where the image intensity depends on the atomic species present. If quantitative information is to be extracted from atomic resolution HAADF STEM images, however, then complete understanding of the electron scattering theory is required.

In this presentation, we will discuss the experimental methods to unambiguously compare theory and experiment. Moreover, we will address the question of the dependence of the signal on atomic number and will demonstrate that excellent agreement can be achieved between experiment and image simulation theory. Emphasis will be placed on the use of quantitative HAADF STEM to solve material science problems.

Host: Professor Susanne Stemmer

LIGHT REFRESHMENTS WILL BE SERVED PRIOR TO THE SEMINAR AT 3:45PM