



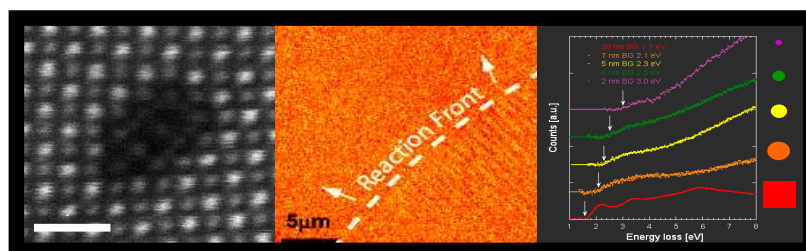
## FACULTY SEMINAR

### (Scanning) Transmission Electron Microscopy with High Spatial, Temporal and Spectroscopic Resolution

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The last few years have seen a paradigm change in (scanning) transmission electron microscopy with unprecedented improvements in spatial, spectroscopic and temporal resolution being realized by aberration correctors, monochromators and pulsed photoemission sources. Spatial resolution now extends to the sub-angstrom level, spectroscopic resolution into the sub-100meV regime and temporal resolution to the nanosecond scale. However, while these instrumentation developments have brought notable successes in materials analysis, they have also challenged the established experimental protocols and our fundamental understanding of both imaging and spectroscopy in the (S)TEM. In this presentation, examples of where the new instrumentation has successfully been used to address materials issues in nanoscale systems will be described. Additionally, the challenges associated with the routine use of the new (S)TEMs for reliable quantitative imaging and spectroscopy will be discussed. Finally, a personal perspective on the technology that will shape (S)TEM capabilities in the next few years will be presented.



**Date and Time : 26 June 2009, 10:30 am**  
**Place: B-Building Conference Room**



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