Center for Molecular and Engineering Thermodynamics

CMET Seminar

- **Tuesday, January 29, 2008**
- **10:30 A.M.** (refreshments available at 10:15 A.M.)
- **102/103 Colburn Lab**

Eric K. Lin

Chief, Polymers Division
National Institute of
Standards and Technology

"Identifying the Materials Limits of Chemically Amplified Photoresists"

The development of new lithography approaches and materials to fabricate ever smaller feature sizes is the key enabler and driver for the continued performance increases of integrated circuits. Although the leading technology, chemically amplified photoresists, is amazingly capable of fabricating sub-65 nm features, there are numerous technical hurdles facing the fabrication of sub-50 nm features with sufficient resolution and reproducibility. We address fundamental questions facing chemically amplified photoresist materials about their intrinsic limits for nanoscale patterning. I will highlight aspects of our work including the direct measurement of the reaction-diffusion front with nanometer resolution and identification of a "residual swelling fraction" during the development process. Insights from these studies can provide potential guidelines and opportunities for the further extension of chemically amplified photoresist technology into the future.

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