

SEMINAR ANNOUNCEMENT
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11:00am – 12:00 noon
EMSL Boardroom

Nanoscale High Field Chemistry With the Atomic Force Microscope and Patterning

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Facile and affordable processes for the fabrication of nanostructures are fundamental to future endeavors in nanoscale science and engineering. The atomic force microscope was designed primarily for imaging, and has evolved into a versatile tool for nanoscale surface modification. We have developed an AFM based scheme capable of direct writing of glassy carbon nanowires as fast as 1 cm/s. In brief, when a bias is applied across the tip-sample gap a molecular precursor undergoes high field reactions that result in the deposition of a cross-linked product on the surface. In order to gain a deep understanding of the reactions involved, a thorough study of the nanoscale surface product is required. This understanding will allow expanding the scope of this patterning strategy to the deposition of a wide variety of materials by using appropriately designed precursors.