

UCLA Nanosystems Seminar Series Presents:

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Northeastern University**

**“Nanomanufacturing Using Nanotemplates for
Directed Assembly of Nanoelements”**

The electronics industry is looking for new nanoscale technologies that will be energy efficient with high performance, scalable with gain and operational reliability at room temperature that are preferably compatible with CMOS process and architecture. Proposed nanoelectronic devices using technologies beyond currently-deployed are many; mechanical or molecular switches, spin logic, phase logic, molecular devices, cross-bar devices, cross-net devices, etc. Manufacturing of these involves very diverse fabrication and assembly techniques that may involve top-down, bottom or both. There is a need to develop heterogeneous process integration such as combination of hierarchical directed assembly techniques with other processing techniques. High-throughput hierarchical directed assembly and nanoscale components and interconnect reliability will also be essential in going beyond silicon. Another important nanomanufacturing issue is nanoscale defect mitigation and removal and defect tolerant materials, structures and processes in addition to nanoscale metrology tools, such as in-line or in-situ monitoring and feedback. Fundamental understanding and novel technology in high rate, high volume integration and assembly of robust tools and processes are addressed. Nanotemplates and tools are used to accelerate the creation of highly anticipated commercial products and will enable the creation of an entirely new generation of applications. This requires understanding what is essential for a rapid multi-step, high volume/high rate processes, as well as for accelerated-life testing of nanoelements and defect-tolerance.

**Tuesday, May 10
5:00 PM**

**Lecture Hall CS 50
UCLA Court of Sciences**

**Reception Immediately Following
2033 Young Hall**

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