

## **ME DEPARTMENTAL SEMINAR**

**Friday, February 18, 2008**

**10:30 – 11:30 AM**

**2211 GG Brown**

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### **Nanoimprinting Technology and its Applications**



Nanoimprint lithography is an emerging technology for high-throughput patterning of nanoscale structures with high precision, and has attracted world-wide attention over the past decade. Nanoimprint lithography allows one to replicate topographically patterned templates at rates significantly faster than that which can be achieved with traditional techniques such as electron-beam lithography. In addition, nanoimprint resolution has been shown to be able to reach the sub- 5 nm range and allow the direct patterning of functional materials. For industrial applications, nanoimprint offers a relatively low-cost alternative to optical patterning of nanostructures where extremely high production levels are required to offset the mask costs. This talk will cover a range of topics in nanoimprint lithography including the basic principle, the material requirement for successful nanopatterning, and examples of applications in the area of photonics, organic photovoltaics, and photonic based sensor technologies. Finally I will discuss our latest effort in developing continuous roll-to-roll Nanoimprinting on flexible moving web as a step toward a practical nanomanufacturing process.