



*Cosponsored with:
Department of Electrical Engineering*

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***Laser Based Nanomanufacturing of Electronics
and Energy Systems***

This talk presents an overview of work on the nanomanufacturing of electronics and energy systems. By tightly focusing pulsed laser radiation to nanometric dimensions we have been able to induce materials modification processes at extremely small scales. Applications in nanoprocessing, nanomachining, nanolithography and nanodeposition have been demonstrated. Interactions of pulsed laser radiation with nanostructures are investigated and shown to substantially improve material characteristics. Laser annealing of nanoscale precursors is utilized to produce single crystalline domains on non-participating substrates. New concepts have been introduced for the high throughput, directed growth and assembly of nanostructures.

Maskless fabrication of functional devices on flexible substrates has been conducted by utilizing nanoparticles in conjunction with laser processing and high-resolution nanoimprinting. High-performance electronics and solar cells have been realized on flexible substrates. Laser processing combined with high throughput printing and imprinting has the potential to enable an integrated approach for the scalable manufacturing of optimized energy systems.

**Friday, November 4, 2011
3:00 pm - Room 151, Jorgensen Hall**

**Host:
Dr. Yongfeng Lu
Department of
Electrical Engineering**

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