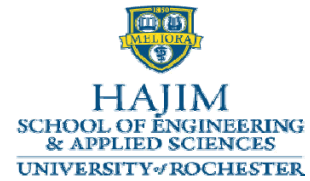


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## Professor John A. Rogers

Department of Materials Science & Engineering  
University of Illinois at Urbana/Champaign

### Microcell Photovoltaics

Wednesday, May 2, 2012

2:15 p.m.

101 Goergen Hall

Solar modules that involve large collections of small, ultrathin photovoltaic cells offer opportunities to address issues in materials utilization, light capture and cost in ways that would be impossible with conventional designs. This talk describes materials, assembly and optics aspects of this type of technology, implemented with monocrystalline silicon and epitaxial compound semiconductors derived from wafer-scale sources of material. We highlight recent work on (1) a composite luminescent concentrator photovoltaic system that embeds large scale, interconnected arrays of microscale silicon solar cells in thin matrix layers doped with lumino-phores and (2) releasable epitaxial assemblies for GaAs photovoltaics, and module designs that use small cells combined with focusing micro-optics. Highlights of commercialization efforts, including new world record efficiency results, will also be presented.