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## The NNN Newsletter

### [Call for Abstracts](#)



As the number of nanotechnology enabled products and processes continue to grow, nanomanufacturing remains the essential bridge between the discoveries of the nanosciences and real-world nanotechnology products.

Nanomanufacturing is the controllable manipulation of materials structures, components, devices, and systems at the nanoscale (0.1 to 100 nanometers) in one, two, and three dimensions for large-scale reproducibility of value-added components and products. To accelerate the proliferation of nanotechnology enabled products the scientific community is witnessing a revolution of new process methodologies, tools, materials, and systems that are becoming established within the global manufacturing base. Processes previously considered fundamental science are now becoming key enablers to solve critical issues in the evolution of many products, as well as facilitate the realization of completely new products that will have significant impact on society. These processes include bottom-up directed assembly, top-down high resolution patterning and manipulation, molecular and biological systems engineering, and hierarchical integration with larger scale systems. As dimensional scales of materials and molecular systems approach the nanoscale, the conventional rules governing the behavior and properties of these components, devices, and systems change significantly. As such, many new products and processes seek to exploit these properties in order to realize a final product enabled by the collective performance of the nanoscale building blocks.

The National Nanomanufacturing Network (NNN) is pleased to announce a **Call for Abstracts** for **The Nanomanufacturing Summit 2009**, to be held in Boston, May 27-29, 2009. Technical contributions in the area of nanomanufacturing related sciences are being solicited from experts and organizations in the field, along with the broader nanomanufacturing community, including technical, business, regulatory, and standards areas. Abstracts for papers are being solicited for these key focus areas and topics having an emphasis on nanomanufacturing approaches, applications, and research challenges. The technical program tracks and session sub-topics are further detailed on the [conference website](#). The program agenda offers an impressive list of invited and keynote speakers covering a range of current and future nanomanufacturing themes, along with a growing list of sponsors having core programs in nanomanufacturing research and development. Conference presentations will include updates on established techniques and practices, overviews of future trends and roadmaps, and reports of emerging processes, materials, and applications. We look forward to the contributions from the

## Upcoming Events

January 7 - 9, 2009

[Bionanotechnology II](#)

January 24 - 29, 2009

[MOEMS and NEMS 2009](#)

January 27 - 28, 2009

[Biomufacturing Summit 2009](#)

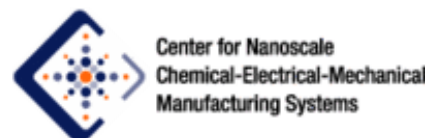
January 27 - 30, 2009

[Symposium on Surface and Nanoscience](#)

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## Affiliated Centers



community at large, along with your participation in this event.

Regards,  
Jeff Morse, Managing Director,  
National Nanomanufacturing Network

[Learn more about the NNN...](#)

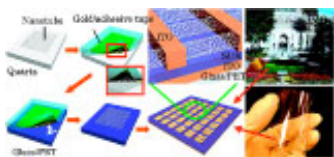
## NNN Researchers Collaborate on Characterization Technique



Researchers from SINAM and the CHM developed a non-contact thermal characterization technique based on thermoreflectance, which can be used to identify the thermal conductivities of thin films, nanostructured materials, and solids.

This complimentary collaboration successfully engaged expertise from separate NSF Nanoscale Science and Engineering Centers in order to provide an advanced capability. [More...](#)

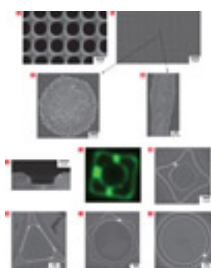
## Advancing Toward Transparent Electronics



There continues to be a large focus on improved materials for transparent electronic devices with the goal of increased carrier mobility and low processing temperature. Recent work by

Ishikawa, et. al., report several remarkable results associated with their investigation of using aligned single wall carbon nanotubes to create transparent thin film transistor arrays. [More...](#)

## Self-Assembled Nanoparticle Superlattices by Moulded Microdroplet Techniques



New research published in *Nature Nanotechnology* demonstrates a superlattice patterning technique that shows promise for specific patterns and shapes in two and three dimensional configurations. The method incorporates a top-down patterning approach with a bottom-up method of nanoparticle self-assembly. [More...](#)

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