National Nanomanufacturing Network Newsletter

Volume 3 Issue 5 - May 2010

The NNN Newsletter

Nanomanufacturing Information Survey

During April and May, the NNN conducted a "Nanomanufacturing Information Survey" among nanotechnology professionals in an effort to understand how people inform themselves about advances in nanomanufacturing and to determine what kinds of information content and formats are most valued. In doing so, the survey provides a snapshot of the current landscape of nanomanufacturing community.

Findings from this survey indicate that nanomanufacturing professionals, largely from industry, seek practical, reliable, and technical information on the implementation or integration of nanomanufacturing processes. Ongoing research into the fundamental science of nanomaterials properties and behaviors will contribute to sought after studies on reproducibility and scale-up of advanced processes. Beyond technical implementation, commercialization and cost analyses were identified as being critical pieces of information that are currently difficult to find or to filter out from available information.

Overall, the range of application areas and activities reported in this survey underscores the notion that nanomanufacturing is truly a bridge between discovery and implementation, a crossroads of research and development that reaches across all areas of application and encompasses supplementary functions such as regulation and informatics. In addition, it provides a snapshot of the current range of application areas active in nanomanufacturing, while also indicating to us that nanomanufacturing is still a nascent area of expertise, one that will develop as nanotechnologies mature and make their way to the marketplace with increasing frequency.

More...

Regards,
Jeff Morse, Managing Director,
National Nanomanufacturing Network

Learn More about the National Nanomanufacturing Network

Upcoming Events

June 2 - 4, 2010
Nanotoxicology 2010

June 8 - 10, 2010
Nanomaterials 2010

June 15 - 17, 2010
International Conference on Green Remediation

June 21 - 24, 2010
NSTI Nanotech Conference & Expo 2010

June 22 - 24, 2010
New England Nanomanufacturing Summit 2010

View Full Calendar

Upcoming Calls

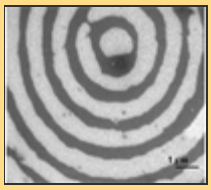
ASAP!
New England Nanomanufacturing Summit 2010
Deadline for abstracts

June 22, 2010
MRS Fall Meeting
Deadline for abstracts

June 28, 2010
SPIE Nanoscience + Engineering
Deadline for manuscripts

NNN Test Bed Reviews May 2010

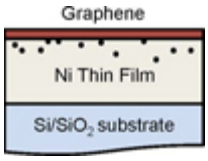
NSF Center for High-rate Nanomanufacturing
Northeastern University, University of Massachusetts Lowell



Multi-scale Directed Assembly of Polymer Blends Using Chemically Functionalized Nanotemplates

Nanoscale patterned polymeric structures with multiple surface functionalities can be used for the fabrication of microphotonic arrays, biosensors, and semiconductor integrated circuits. The directed assembly of polymer blends into nanoscale structures offers an advantage in that a wide array of polymers and molecular weights are readily available for use. In contrast to block copolymers, blends have greater flexibility in forming non-uniform structures and are not constrained in terms of domain size by the block length. Additionally, the use of chemically functionalized nanotemplates can be exploited to direct the nanoscale assembly of polymer blends into non-uniform patterns in relatively short timescales. The use of a short solvent annealing step allows the preparation of non-uniform geometries and multiple length scales in a single template. More....

Large Area Synthesis of Graphene Sheets by Metal-Catalyzed Crystallization



Methods of graphene production have emerged from the initial methods of generating small amounts for research studies—typically by mechanically exfoliating monolayers from bulk graphite—to alternative approaches conducive with large area processing. One approach, using chemical vapor deposition (CVD), takes advantage of existing process tools, yet suffers from difficulty in controlling the number of graphene layers over large areas due to the sensitivity of various process parameters. Recently, Zheng and colleagues describe a method to synthesize large-area, transferrable graphene films by metal-catalyzed crystallization of amorphous carbon (a-C) through thermal annealing. More....

NIST 2010 TIP Competition

Through July 15th, NIST is accepting proposals for the 2010

July 30, 2010
3rd Annual Nanotechnology Symposium
Deadline for abstracts

August 30, 2010
BIT's 1st Annual World Congress of Nanomedicine
Deadline for poster abstracts

Recently Published

From Our Affiliates

Placement of alkanethiol-capped Au nanoparticles using organic solvents
Journal of Colloid and Interface Science 346(1):17-22

Effect of Different Deposition Mediums on the Adhesion and Removal of Particles
Journal of the Electrochemical Society 157(6):H662-H665

GaAs Photovoltaics and Optoelectronics Using Releasable Multilayer Epitaxial Assemblies
Nature 465(7296): 329-U80

Free Folding of Suspended Graphene Sheets by Random Mechanical Stimulation
Physical Review Letters 104(16): 166805

Affiliated Centers

CHM
Center for Hierarchical Manufacturing
University of Massachusetts Amherst

Center for High-rate Nanomanufacturing

Center for Nanoscale Chemical-Electrical-Mechanical Manufacturing Systems

SINAM
CENTER FOR SCALABLE AND INTEGRATED NANOMANUFACTURING

Technology Innovation Program. The new TIP competition offers cost-shared funding for innovative research on "Manufacturing and Biomanufacturing: Materials Advances and Critical Processes." The TIP program is designed to address societal challenges by supporting technology innovation in areas of critical national need. Individual companies can receive up to $3M over 3 years, which can support up to 50% of the direct costs of an R&D project. Joint ventures involving two or more companies, universities, or research laboratories are eligible for even larger awards, up to a maximum of $9M over 5 years (again with a minimum 50% of cost sharing). Last year, nanotechnology companies responded enthusiastically to the TIP program call for advanced manufacturing concepts. They were rewarded with 6 funded projects in the application area Process Scale Up, Integration and Design - Nanomaterials. More....

Read more on InterNano

The National Nanomanufacturing Network Newsletter

Subscribe / Unsubscribe from this list.

Our mailing address is:
The National Nanomanufacturing Network
322 Lederle Graduate Research Center
710 N. Pleasant Street
University of Massachusetts
Amherst, MA 01003

Our email address is:
nnn@nanomanufacturing.org

Our phone number is:
(413) 577-0570

Supported by the National Science Foundation under Grant No. DMI-0531171.