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InterNano: Serving the Nanomanufacturing Community

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InterNano

Resources for Nanomanufacturing

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Expert Reviews

Expert Reviews present a detailed review of recently published research or state of practice in nanomanufacturing, and focus on those advances in applications, devices, metrology, and materials that are near-term and will facilitate the commercial development and/or marketable application of nanoscale systems and devices.

Active-driven assembly of block copolymer-nanoparticle materials for solution processable floating gate memory

Written by Stephen Hui, Ting Liu, David S.inton, Alexander K. Soper, Richard P. D'Alagni, and James R. Heath

The diagram shows a cross-section of a floating gate memory cell. It consists of a silicon substrate with a gate electrode on top. A layer of block copolymer is deposited on the gate electrode. The block copolymer is composed of two different polymer blocks, one of which is functionalized with nanoparticles. The nanoparticles are shown as small spheres within the block copolymer layer. The diagram illustrates the assembly process where the nanoparticles are driven into the block copolymer layer by an electric field.

Voltage Controlled Drug Release from Nanoparticles for Hybrid Smart Drug Delivery Systems

Written by Jeff Moore, PhD

The diagram shows a nanoparticle with a drug molecule (represented by a blue sphere) attached to its surface. A voltage source is applied to the nanoparticle, which causes the drug molecule to be released. The diagram illustrates the mechanism of voltage-controlled drug release from nanoparticles.

Spatial Atomic Layer Deposition for Industrial Scale Nanomanufacturing of Thin Films

Written by Jeff Moore, PhD

The diagram shows a substrate with a thin film being deposited. The process involves the sequential deposition of two different precursors onto the substrate. The diagram illustrates the spatial atomic layer deposition (ALD) process for industrial scale nanomanufacturing of thin films.

Original Columns and News Articles

Columns and News Articles identify and contextualize important news and trends in nanomanufacturing.

Advanced Manufacturing Partnership: Where Does Nanomanufacturing Fit, and Where Should Investments Be Made?

Written by Jeff Moore, PhD

The image shows a person in a lab coat, likely a researcher or expert in nanomanufacturing. The person is standing in a laboratory setting, and the image is part of a news article discussing the advanced manufacturing partnership.

NanoBusiness Interview: Jason Hartlove, CEO, Nanosys

Written by Jeff Moore, PhD

The image shows Jason Hartlove, CEO of Nanosys. He is a man with short hair, wearing a suit and tie. The image is part of a nano-business interview.

Solution-based Manufacturing Technologies Show Promise for Cheaper, More Efficient Solar Cells

Written by Jeff Moore, PhD

The image shows a solar cell being manufactured using solution-based technology. The image illustrates the process of manufacturing solar cells using solution-based manufacturing technologies.

Directory of Organizations and Experts

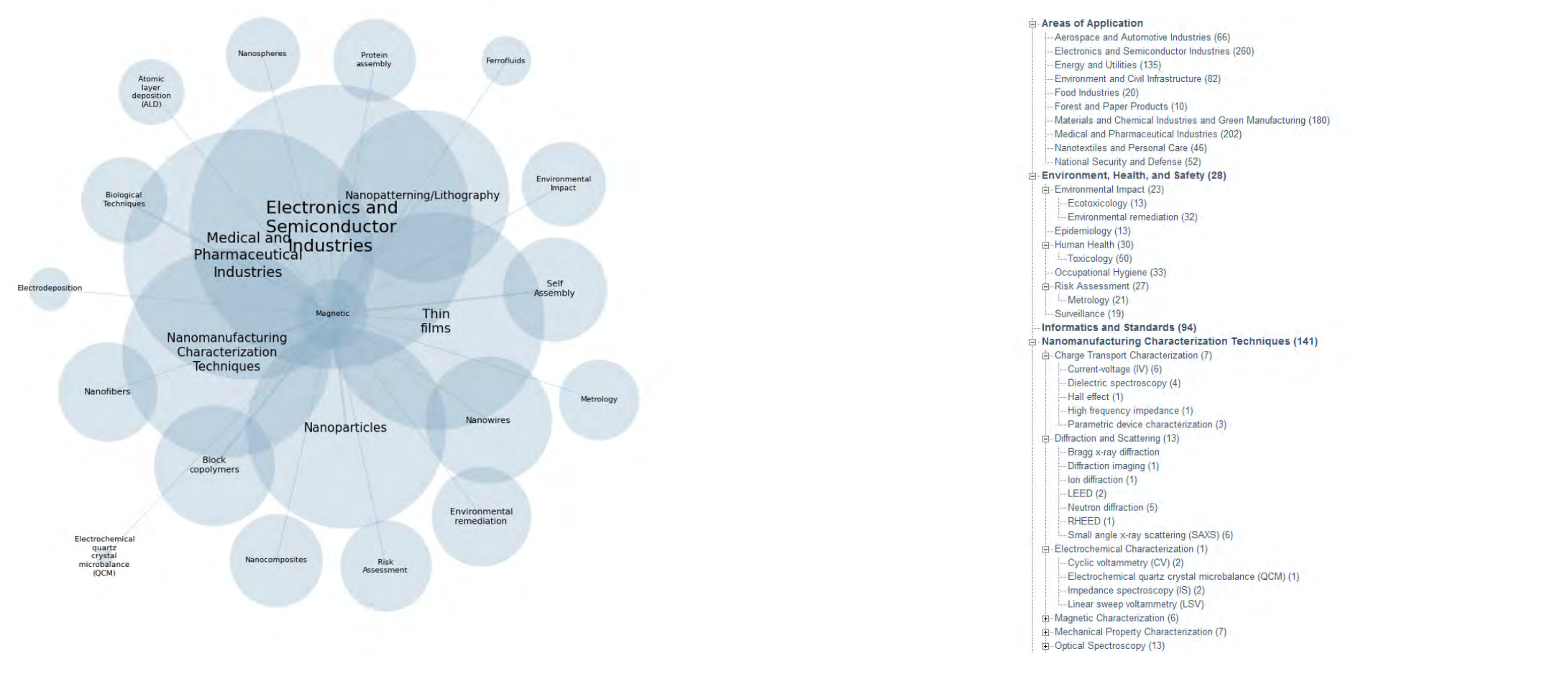
The InterNano Directory is a listing of both researchers and organizations that are engaged in nanomanufacturing. The directory reflects organizations and experts that are concerned with:

- creating nanoscale materials for use in commercial products
- utilizing nanoscale materials to enhance devices and/or device performance
- developing and/or utilizing advanced process techniques to create structures or devices at the nanoscale



Nanomanufacturing Taxonomy

Using the Taxonomy, browse InterNano content by: Areas of Application, EHS, Informatics and Standards, Characterization Techniques, Processes, Nanoscale Objects and Nanostructured Materials, Social and Economic Impacts, and Tool Development.



Process Database

The Process Database is a knowledge base of techniques for producing nanoscale materials, devices, and structures that includes step-by-step descriptions, images, notes on methodology and environmental variables, and associated references and patent information.

1. Fabrication of a nanoporous template from a diblock copolymer film - electric field alignment

Contributors: P. P. Russell, Mark T. Anderson

The diagram shows a nanoporous template structure. It consists of a substrate with a layer of diblock copolymer on top. The copolymer is composed of two different polymer blocks, one of which is functionalized with nanoparticles. The diagram illustrates the fabrication process of a nanoporous template from a diblock copolymer film.

2. Fabrication of a nanoporous template from a diblock copolymer film - solvent annealing

Contributors: P. P. Russell, J. Park, J. Y. Wang, and S. Kim

The diagram shows a nanoporous template structure. It consists of a substrate with a layer of diblock copolymer on top. The copolymer is composed of two different polymer blocks, one of which is functionalized with nanoparticles. The diagram illustrates the fabrication process of a nanoporous template from a diblock copolymer film using solvent annealing.

