

Building a Central Repository for Nanomanufacturing

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Open Repositories 2009 EPrints User Group

Image credit:
Matt's Swirls by Matthew Misner
Polymer Science and Engineering Department
University of Massachusetts Amherst
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We are...



\$16M NSF Nanoscale Science and Engineering Center



Peer-to-peer network for NM R&D community established by the CHM



NM information clearinghouse and portal to the NNN.



Providing staff and hardware support to InterNano

Nanomanufacturing is...

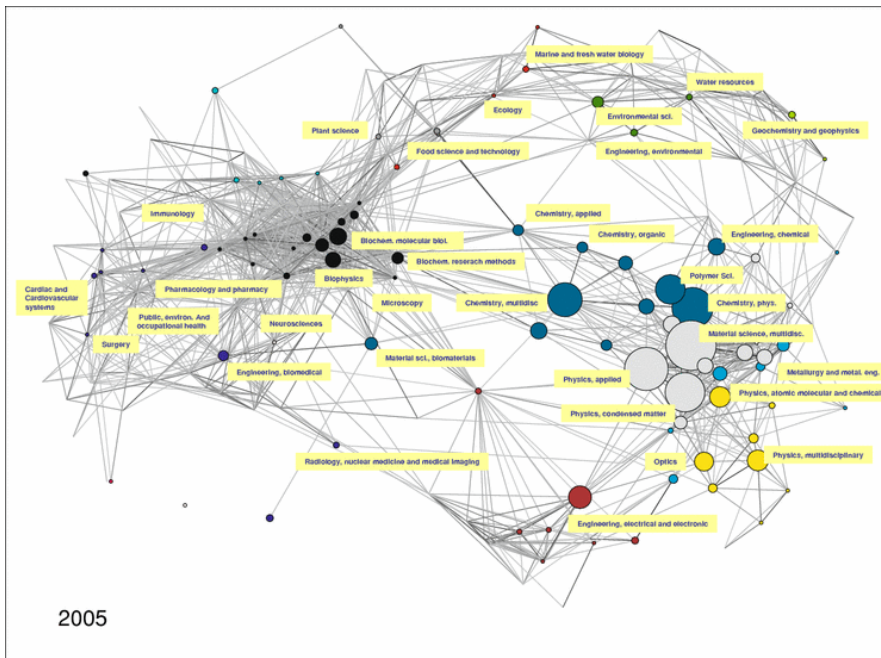
- The essential bridge between the discoveries of the nanosciences and real-world nanotechnology.
- The controllable manipulation of materials structures, components, devices, and systems at the nanoscale (1 to 100 nanometers) in one, two, and three dimensions for large-scale reproducibility of value-added components and devices.



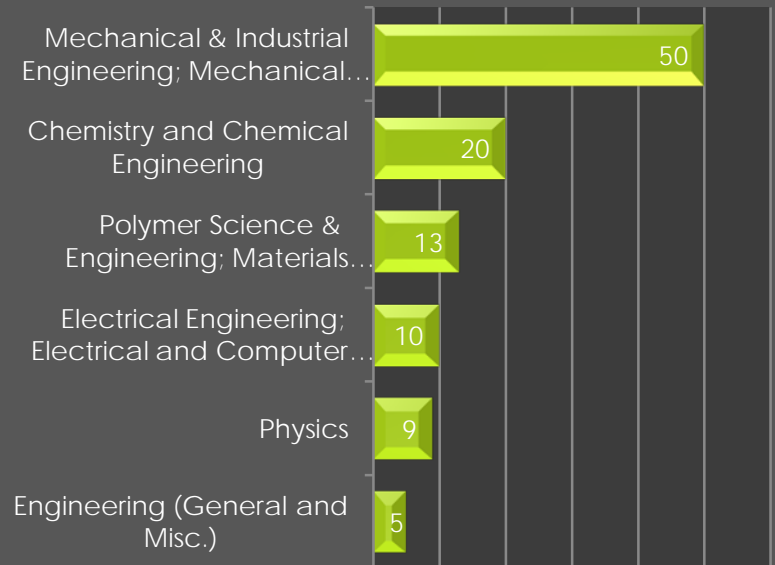
[The Twinkie Guide to Nanotechnology](#)

Nanomanufacturing is...

■ Interdisciplinary



NNN Affiliates Disciplines



Porter, Alan and Jan Youtie. "How interdisciplinary is nanotechnology?" J Nanoparticle Research. Published online 6 March 2009. DOI: 10.1007/s11051-009-9607-0.

Nanomanufacturing is also...

- A cross-sector R&D enterprise
- The beneficiary of generous federal funding
- Impacting the marketplace

Cooperative State Research, Education
of Agriculture)3 Department of Defense
Department of Homeland Security (DHS)
Department of Transportation (DOT) Environmental P
Department of Agriculture) National Ae
National Institute for Occupational Safe
and Human Services/Centers for Diseas
of Health (NIH, Department of Health ar
Standards and Technology (NIST, Depar
Foundation (NSF)



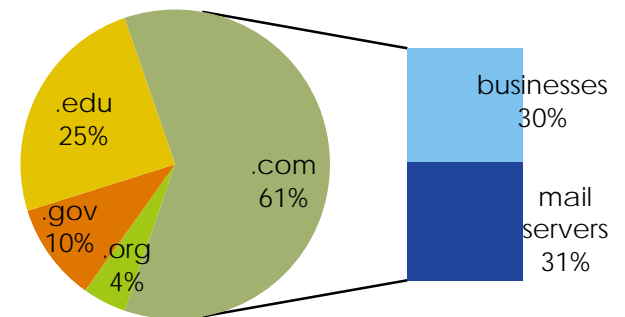
NNI Report: Research and Development Leading to a Revolution in
Technology and Industry Supplement to the President's FY2010 Budget.
2009. Accessed 5/18/09 from <http://www.nano.gov>.

NM needs a central repository

- InterNano clearinghouse visitors and members



Member Domains



- A need to move beyond “reference-level” information

InterNano Nanomanufacturing Repository

- EPrints 3.1.2 installation
- Simple configuration edits
 - Browse views
 - Divisions
 - Content and Document types
 - Home and Latest Additions pages
 - Search
 - Subjects
- eprints.internano.org



InterNano Nanomanufacturing Repository

The screenshot displays the InterNano Nanomanufacturing Repository website. The header features the InterNano logo and the text "Gateway to the National Nanomanufacturing Network". The main content area is titled "Browse by Year where Taxonomy is 'Environment, Health, and Safety > Epidemiology'". It includes a search bar, a "Browse" menu, and a list of items for the year 2008 and 2007. A green box highlights the text "Browse Views with Content".

InterNano Nanomanufacturing Repository
Gateway to the National Nanomanufacturing Network

Browse by Year where Taxonomy is "Environment, Health, and Safety > Epidemiology"

[Up a level](#)

- [InterNano Taxonomy](#) (60)
 - [Environment, Health, and Safety](#) (17)
 - [Epidemiology](#) (3)

Please select a value to browse from the list below.

- [2008](#) (1)
- [2007](#) (2)

2008

- Russell, Richard and Albright, Bud, eds. (2008) [Strategy for Nanotechnology-Related EHS Research](#). Technical Report. National Nanotechnology Coordination Office.

2007

- Davies, Clarence. Woodrow Wilson International Center for Scholars, Project on Emerging Nanotechnologies. (2007) [EPA and Nanotechnology: Oversight for the 21st Century](#). Technical Report. Project on Emerging Nanotechnologies.
- Morris, Jeff and Willis, Jim, eds. (2007) [EPA Whitepaper on Nanotechnology](#). Technical Report. Environmental Protection Agency.

Browse Views with Content

InterNano Nanomanufacturing Repository

[Advanced Search](#)

BROWSE

Collections

Document Type

Latest Additions

Person

Taxonomy

Year

Deposit an Item

About the Repository

InterNano Home

Login

Create Account

Browse by Taxonomy and Year

Please select a value to browse from the list below.

- [InterNano Taxonomy](#) (60)
 - [Environment, Health, and Safety](#) (17)
 - [Environmental Impact](#) (7)
 - [Ecotoxicology](#) (2)
 - [Environmental remediation](#) (1)
 - [Epidemiology](#) (3)
 - [Human Health](#) (7)
 - [Toxicology](#) (3)
 - [Occupational Hygiene](#) (4)
 - [Risk Assessment](#) (7)
 - [Metrology](#) (1)
 - [Surveillance](#) (7)
 - [Informatics and Standards](#) (9)
 - [Nanomanufacturing Characterization Techniques](#) (10)
 - [Other Characterization Techniques](#) (1)
 - [Scanning Probe Microscopy](#) (2)
 - [Scanning ion conductance microscopy \(SICM\)](#) (1)
 - [Thermal Analysis](#) (1)
 - [Nanomanufacturing Processes](#) (14)
 - [Assembly Techniques](#) (5)
 - [Biological Techniques](#) (4)
 - [Protein assembly](#) (1)
 - [Self Assembly](#) (1)
 - [Nanoscale Objects and Nanostructured Materials](#) (10)
 - [Nanocomposites](#) (1)
 - [Nanodevice Structures](#) (3)
 - [Nanoelectronic circuits and architectures](#) (2)
 - [Nanoparticles](#) (1)
 - [Nanotubes](#) (2)
 - [Carbon nanotubes](#) (2)
 - [Social and Economic Impacts](#) (32)
 - [Education](#) (5)
 - [Ethics](#) (1)
 - [Policy and Regulation](#) (19)
 - [Social Perspectives](#) (13)
 - [Tool development](#) (7)

Taxonomy

Click on the to expand each category. Click on the category name to view related content.

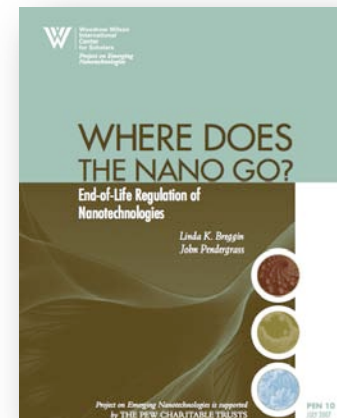
- Taxonomy
- [My Tags](#)
- [Environment, Health, and Safety](#)
- [Informatics and Standards](#) (7)
- [Nanomanufacturing Characterization Techniques](#) (1)
- [Nanomanufacturing Processes](#) (1)
 - [Assembly Techniques](#) (2)
 - [Biological Techniques](#) (1)
 - [Biolinker assembly](#) (1)
 - [Biom mineralization](#) (1)
 - [DNA templating](#) (1)
 - [Protein assembly](#) (3)
 - [Bulk Structured Material Synthesis Methods](#)
 - [Deposition of Nanostructured Films or Nanostructures](#) (1)
 - [Etching](#) (1)
 - [Miscellaneous Technologies](#) (4)
 - [Nanocomposite Manufacturing](#)
 - [Nanoparticle Synthesis](#)
 - [Nanopatterning/Lithography](#) (6)
 - [Roll-to-Roll Manufacturing](#)
 - [Self Assembly](#) (3)
- [Nanoscale Objects and Nanostructured Materials](#) (1)
- [Social and Economic Impacts](#) (1)
- [Tool development](#) (3)

Taxonomy

Content Profile

- 63 items from academic, government, non-profit, and commercial organizations
- 35 taxonomy terms in all seven top-level categories

- Where Does The Nano Go? End-of-Life Regulation of Nanotechnologies. Technical Report. Project on Emerging Nanotechnologies
 - Type: monograph
 - Source: non-profit
 - Taxonomy: Environmental Health & Safety: Environmental Impact, Risk Assessment, Surveillance; Social and Economic Impacts: Policy and Regulation



Content Profile

- 16 multi-part items and 6 file formats (majority PDF)

- Flanigan, Cynthia. (2009) New Soy-lutions for Sustainability in Automotive Applications. In: IGERT Seminar Series, 2008 - 2009, University of Massachusetts Amherst. (Unpublished)
 - Type: Conf. Workshop item
 - Source: industry
 - Taxonomy: Nanoscale Objects and Nanostructured Materials



New Soy-lutions for Sustainability in Automotive Applications

Cynthia Flanigan, PhD
Plastics Research Technical Expert
Materials and Nanotechnology
Ford Research and Advanced Engineering

U-Mass Amherst, IGERT Lecture Series
February 26, 2009

Content Acquisition

- Manual content recruitment
- Barriers – cultural and intellectual property constraints
- Planning Systematic Approaches
 - Harvesting with OAI and CrossRef
 - SWORD Pilot Project

2006-2008

CHM Faculty	Total Pubs	CHM-funded	Archivable
38	667	101	55

SHERPA/RoMEO indication	55
Green	42
Blue	11
Yellow	2

The bigger vision

- Providing a permanent home and single point of full-text access for scholarly and trade outputs related to nanomanufacturing.
- Incorporating more comprehensive content by type, discipline, and source.
- Demonstrating the value of Open Access to scientific research in a new research area.

Thank you

- Eprints Working Group
 - Rebecca Reznik-Zellen, Science Librarian
 - Bob Stevens, Web/Database Developer
 - Marilyn Billings, Scholarly Communication and Special Initiatives Librarian
 - Stacy Konkiel, Digital Repository Resident
 - Danielle Federa, InterNano Intern
- InterNano Steering Committee
 - Mark Tuominen, Department of Physics and Director NNN
 - Jeff Morse, Managing Director NNN