Nanotechnology and EPA: Goals, Initiatives, & Outreach

Nanotechnology and OSWER: New Opportunities and Challenges

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Why is EPA interested in nanotechnology?

- Potential for Environmental Improvement
  - Cleaning up past environmental pollution
  - Improving present processes and systems
  - Preventing future environmental problems
- Possibility for harmful effects on human health/environment
  - Toxicity
  - Fate, Transport, transformation
  - Bioaccumulation, biotransformation, bioavailability
- EPA’s regulatory responsibilities Toxicity
  - Toxic Substance Control Act
  - Clean Air Act
  - Clean Water Act
  - Comprehensive Environmental Response, Compensation and Liability Act/Superfund

Dr. Nora Savage -- Presentation Slides
**National Nanotechnology Initiative**

EPA is a member of the subcommittee - Nanoscale Science, Engineering and Technology

- Federal agencies and departments that participate in NNI
- Established in 2001
- Responsible for coordinating federal government’s nanoscale research and development programs
- National Nanotechnology Coordinating Office (NNCO) – secretariat, point of contact
SPC White Paper

- Science Policy Council (SPC): venue for discussion and management of cross-agency science issues
- Cross-agency Nanotechnology Workgroup convened by SPC Dec. 2004
- Group charge: develop a white paper to examine the implications and applications of nanotechnology for the consideration of Agency managers
- Will serve as EPA’s science and technology guide for nanotechnology
- You may obtain the draft white paper from www.regulations.gov or www.epa.gov/osa
- Anticipate Final Document 2006

FY07: $8.6 million for Nano R&D

- Help advance nanotechnology’s potential to create new and enhanced products in an environmentally sound manner, the President’s Budget will strengthen EPA’s ongoing efforts to:
  1. understand the potential human health and ecological impacts of manufactured nanomaterials, and
  2. investigate how nanotechnology can be used in environmental applications such as improved monitoring, pollution control, and site remediation
- FY 2007, a new in-house program will be integrated with ORD’s existing STAR and SBIR extramural programs and coordinated with other federal environmental, health, and safety research conducted under the NNI, as well as with international organizations such as the OECD
- Developing an EPA nanotechnology research strategy
EPA Nanotechnology STAR Grants

2001  Environmental Applications of Nanotechnology
      • 16 awards, $5.6 million
2002  Environmental Applications of Nanotechnology
      • 16 awards, $5.6 million
2003  Health and Environmental Effects of Manufactured Nanomaterials
      • 12 awards, $4 million
2004  Environmental Applications of Nanomaterials
      • 7 awards, $2 million
2005  Health and environmental effects of Nanoparticles
      • 19 awards, $7 million (joint with NSF, NIOSH)
2005/6 Health and Environmental effects of Nanomaterials
      • $7 million, (joint with NSF, NIOSH, NIEHS)
      • 156 received, 46 passed peer review

NanoMeeters Notes Database
Nanotechnology: ORD

- STAR grants ~ $25 million, 65 grants
- SBIR contracts ~ $4 million, Phase I and Phase II
- Co-Chair (with OPPTS) Agency White Paper workgroup
- $8.6 research budget request for 07
- ORD Research Strategy
- Cooperation with OPPT on: new chemical reviews, consideration of data elements for stewardship program, nanotech P2/DfE issues
- Participation in OECD nano Work Group
- Outreach to EPA Regions and Offices
- Outreach to national and international professional organizations

ORD Nanotechnology Activities

BUILDING A GREEN NANOTECH WORLD

Solicitations

- Annual RFA since 2001
- Annual SBIR since 2001

Meetings, Symposia, Workgroups

- EPA Grantees’ Workshops
- Interagency: Applications and Implications Conference w/ DOC, DOD, DOE, DOT, FDA, NIH, NSF, & USDA - September 2003
- Societal Implications II - Dec 2003
- NNI Nanotechnology Grand Challenge in the Environment - May 2003
- ANSI, ASTM, European Commission, ICON, ILSI, NAS, Woodrow Wilson Center, NAS, International organizations
Get Involved!

- Attend EPA NanoM eeters workgroup meetings
- Participate in writing RFA’s
- Serve on relevancy reviews for nanotech grants
- Attend seminars and workshops on nanotech
- Present papers/chair sessions at professional meetings
- Think proactively regarding regulatory aspects of nanotech
- Assist in developing EPA-wide nano web page
- Use NanoM eeters database to keep current and communicate information to your colleagues