

US EPA ARCHIVE DOCUMENT



Nanotechnology & the Public: Duh, Yuck, and Wow!

by

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A partnership of the

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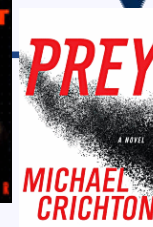
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Nanotechnology in Poplar Culture



- Over 20 science fiction novels since 1982, including Michael Crichton's *Prey*.

- Variety of films including Spiderman II



- Console video games



Nanobreaker for PS2

- Embedded messages in ads

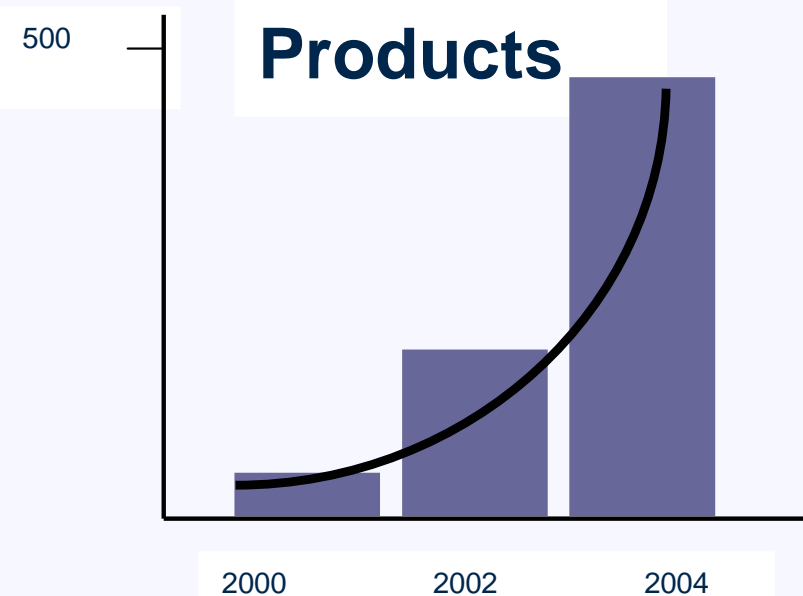


- Public protests



Nanotechnology Products on Market

Nanobased Products



An NSF-funded survey by *Small Times* magazine identified over 875 nanotech companies, with 475 products being produced by 215 of those companies. An internal EPA survey identified over 270 firms with products on the market.



US Public Perceptions

- 80 - 85% of public has heard “little” or “nothing” about nanotechnology
- Tend to see benefits more than risks
- Over 90% indicated “no” or “low” trust in both government and industry to manage any risks associated with nanotech (higher educational levels predicted lower trust levels)
- Most frequently mentioned concerns:
 - **Military uses, “evil doers”, weapons of mass destruction**
 - **Long term health effects**
 - **Environmental and ecosystem impacts**
 - **Loss of freedom and privacy**
 - **Regulator loss of control (rush to market)**
 - **Insulation of scientists and regulators from public concerns**

From: Macoubrie, J. “Nanotechnology: Public Concerns, Reasoning, and Trust in Government”



UK Public Perceptions

- 29% of UK public claim to have heard of nanotechnology
- Only 19 % can give some definition—accurate or not
- Of those offering a definition, 68% said it would make life better
- Most frequently mentioned concerns:
 - * Loss of privacy
 - * Cost of development to UK taxpayers
 - * Scientists trying to “play God”

From: BMRB for Royal Society, 2004



US Public Perceptions

- Most important potential benefits:
 - * New, better ways to detect and treat disease (57%)
 - * New, better ways to clean up environment (16%)
 - * Increased national security and defense (12%)
 - * Improvements to human and physical mental abilities (11%)
 - * Cheaper, longer-lasting consumer products (4%)

From: Cobb, M. and Macoubrie, J., 2004



Nanoscience and nanotechnologies: opportunities and uncertainties

Recommendation #4

Until more is known about environmental impacts of nanoparticles and nanotubes, we recommend that the release of manufactured nanoparticles and nanotubes into the environment be avoided as far as possible.

www.nanotec.org.uk/finalReport.htm



Recommendation #5

Specifically, in relation to two main sources of current and potential releases of free nanoparticles and nanotubes to the environment we recommend:

- (ii) that the use of free (that is, not fixed in a matrix) manufactured nanoparticles in environmental applications such as remediation be prohibited until appropriate research has been undertaken and it can be demonstrated that the potential benefits outweigh the potential risks.



Moore's Laws

- **Make Your Case**
- **Make Friends**
- **Make Transparency & Responding to Public Concerns Job #1**
- **Make Sense**



Project on Emerging Nanotechnologies

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