



Nanotechnology
Industries Association

10th April 2008:

*Arizona Nanotechnology - Small is Big:
Global Perspectives on Nanotechnology*

Responsible Nano Code

**– A timely initiative in support of the
advancement of responsible nanotechnologies**

Nanotechnology Industries Association (NIA)

History

- Formed in 2005 by a number of industrial companies active in nanotechnology
- Called-for by the nanotechnology industries
- 'Start-up' funded by UK Government (DTI) for 3 years
- **Coming soon: opening of Brussels office**

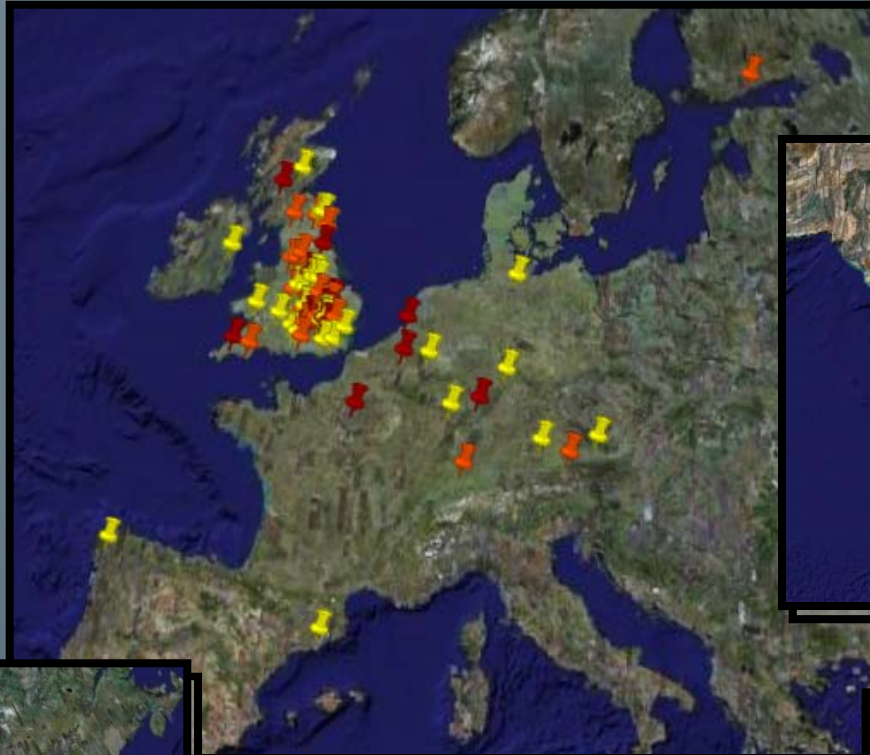
Current Status

> 90 industrial members (March 2008)

- Operating across Europe (and liaising with US, Australia, Japan, Asia Pacific, etc.)
- Advising federal & national Governments (e.g. EC, UK, Germany, Australia, US, etc.)
- Contributing to EC's regulatory working groups (e.g. 'food' (DG SANCO), 'medical devices' (DG Enterprise & Industry))
- Advising the OCED (WPMN & WPN) through BIAC*

* OECD: Organisation for Economic Co-operation and Development
WPMN: Working Party on Manufactured Nanomaterials (*i.e.* part of the OECD initiative on 'Chemical Safety')
WPN: Working Party on Nanotechnology (*i.e.* part of the OECD 'Committee for Scientific and Technological Policy')
BIAC: Business and Industry Advisory Committee to the OECD

NIA – The Membership



NIA – The Membership

Unique Features:

- providing a purely industry-led perspective, derived from the views of the collective membership (companies at different stages of their life-cycle and with a variety of interests).

Corporate Members:

Apaclara	MaterialsSolutions	Solvay
Applied Nanodetectors	MacDermid	Sun Chemical
AWE	Naneum	Surrey Nano Systems
BASF	NanoCentral	Tata Chemicals
BP	NanoForce	Tamil Nadu Technology Development & Promotion Centre
Büchi	NanoGap	TechniTex Faraday Limited
Buehler	NanoLake	Teer Coatings
CEMMNT	NanoSight	The Technology Partnership
Cenamps	Nanopartner	Thomas Swan & Co.
Centrum für Angewandte Nanotechnologie	NanoTEC Industrial Coatings	Unilever
Ciba	Nanotec NI	Visteon Customer and Technical Centre
Croda International	Nanotecture	Xennia Technologies
Datum Alloys	Nano-X	
Eminate	National Physical Laboratory	
Endor Nanotechnologies	Orchid Chemicals and Pharmaceuticals	
Epson	Orla Protein Technologies	
Exilica	Oxford Biosensors	
Gems Sensors	Oxford Instruments	
Hosokawa Micron	Oxonica	
I-CanNano	Pall Europe	
Intertek MSG	PERA	
ICI	Procter & Gamble Technical Centres	
Iford Photo	Q-Flo	
IMERYS Minerals	QinetiQ	
Innos	QinetiQ Nanomaterials	
Innovia Films	Rolls-Royce	
Ionbond	Scott Bader	
JEOL UK	SEA Solutions	
Johnson & Johnson	Semefab	
Johnson Matthey	Shell	
L'Oreal	Smith & Nephew	
Lubrizol		
Maelstrom		

Associate Members:

Bergeson & Campbell
Beveridge & Diamond
Bond Pearce
Dickinson Dees
FirstVentures
Harrison Goddard Foote
Ian Silcock, Barrister
Neville Craddock Associates
Nanotech Risk Management
NoMo-ir
TechnesiumTC
The Acta Group EU

Affiliate Members:

Australian Nano Business Forum
Association of the British Healthcare Industry
British Healthcare Trade Association
Canadian High Commission
Chemical Industries Association
Chemistry Innovation KTN
DEFRA
Display & Lighting KTN
Materials UK
Nanotechnology KTN
NEPIC
UK Trade & Investment

(list not complete)

Arizona Nanotechnology Symposium

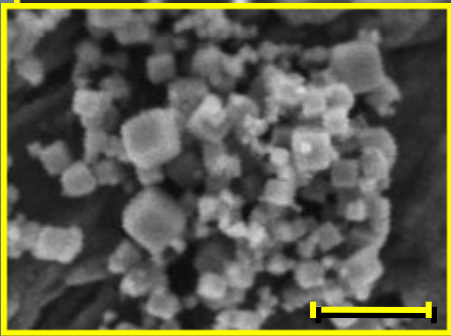
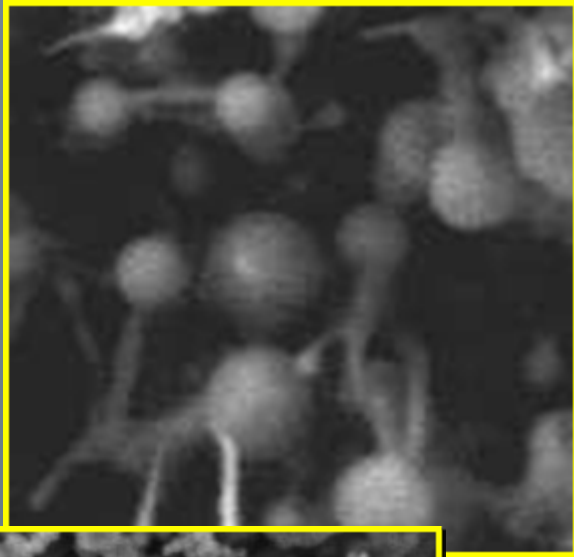
10th April 2008

Commercialisation: *A 'Supply Chain' Problem*

Nano(structured)
Materials

Intermediate
Products with
nanoscale Features

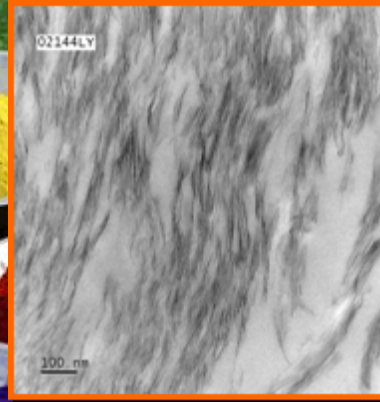
Final Products
incorporating enabling
Nanotechnology



[source: Intrisiq]



[<http://www.brimham.com>]



[source: Intertek
Measurement Science Group]



[<http://www.rheotek.com>]



[<http://www.nivekonline.co.uk>]



[PPG's CeramiClear® Clearcoat; source:
<http://corporateportal.ppg.com>]

Magic Nano: *The Story of Supply Chains gone wrong*

Monday, April 10, 2006



News Release
ETC Group
April 7, 2006
www.etcgroup.org

Nanotech Product Recall Underscores Need for Nanotech Moratorium: *Is the Magic Gone?*

washingtonpost.com

Nanotech Product Recalled in
Germany

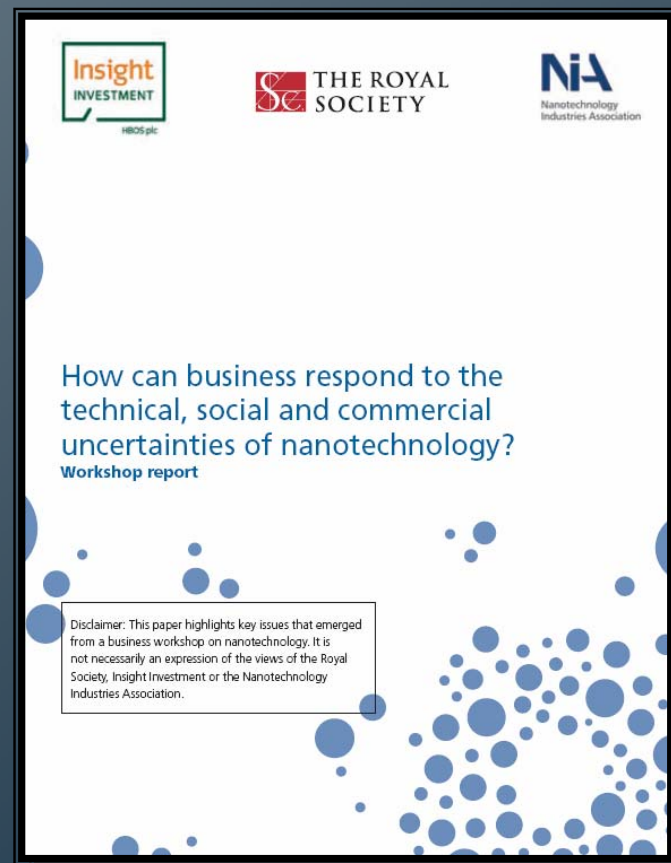
NIA – *Responsible NanoCode*

Background

- 2003/2004 Royal Society/Royal Academy of Engineering joint report on 'Nanoscience and Nanotechnologies: Opportunities and Uncertainties'

Creation of the *Responsible NanoCode* (2006 – 2007)

- Royal Society felt there was a gap – industry not engaged
- Insight had identified potential investment issues
- RS & Insight jointly approached the NIA to enhance engagement with business
- November 2006: '**RS-Insight-NIA'-Workshop** to discuss the businesses' opinion of uncertainties and risks (17 companies and other stakeholders)
- Main **workshop recommendation**: Develop a Code of Conduct and a forum to discuss issues relating to nanotechnology safety
- Creation of the Code of Conduct: May – September 2007
- International public consultation: September – December 2007



Responsible Nano Code - Objectives

- To establish a **consensus** of what constitutes **good practice** in business across the nanotech 'value chain'
- To develop a **voluntary, principles-based Code of Conduct** that can be adopted by businesses involved in developing, manufacturing and retailing products containing nanotechnologies
- To **help them** align their internal processes with **good practice**

The Code is NOT Intended to:

...supersede or replace current or future regulation

...to be an auditable set of standards

...offer detailed guidance on performance expectations

...provide any new definitions, characterisation or measurement of nanotechnologies

Responsible Nano Code – The Working Group

Companies

- BASF
- Johnson & Johnson
- Johnson Matthey
- Oxonica
- Smith & Nephew
- Tesco
- Thomas Swan
- Unilever

Unions / NGOs

- Amicus
- Practical Action
- Which?

Academics / scientists

- Institute of Occupational Medicine
- Napier University
- University of Sheffield
- University of Cardiff

Founding Partners

- Royal Society
- Insight Investment
- UK Knowledge Transfer Network
- Nanotechnology Industries Association

Responsible Nano Code – Monitoring & Compliance

- Comply or explain focus – companies adopting the code must comply with its principles...
- ...explain if they do not, why not
- Report how they comply, usually in Annual and Social reports or statements and on their website
- Compliance criteria and guidance devised by multi-stakeholder panel

... to be decided by the *Monitoring & Compliance Working Group*

NanoSafety – The Story of Supply Chains

ResponsibleNanoCode

Background to the Responsible NanoCode

In November 2006, the Royal Society, Insight Investment and the Nanotechnology Industries Association (NIA) came together to explore the societal and economic impact of the technical, social and commercial uncertainties related to nanotechnologies.

The three organisations began this process by convening a business-focused workshop that stimulated companies to engage more fully with the broad spectrum of questions which affect the development of nanotechnologies; the workshop brought together seventeen European companies with a commercial interest in nanotechnology – from food and chemicals manufacturers to retailers of healthcare and fashion. The background of the workshop was laid out in the commissioned briefing paper: [An Uncertain Business: The technical, social and commercial challenges presented by nanotechnology](#).

One of the main outcomes of the workshop was a unanimous agreement on the requirements for a voluntary Code of Conduct for businesses engaged in nanotechnology. It was felt that such a Code should be principles based rather than standards based and would be developed through a process of engagement between a representative group of businesses from various stages of different supply chains and a wide range of stakeholders, including NGOs, government and consumer groups. Follow this link to download the full [Workshop Report](#).

Following the success of the workshop, the three organisations agreed to take forward one of the key recommendations that emerged from the discussions: and decided to facilitate the development of a voluntary **Code of Conduct for Responsible Nanotechnology ("Responsible NanoCode")**. The three organisations were joined by the Nanotechnology Knowledge Transfer Network – an initiative sponsored by the UK government's Department of Trade and Industry. These four organisations are now referred to as the [Founding Partners](#).

Founding partners

[Home](#)[Progress and Public Consultation](#)[Responsible NanoCode Working Group](#)[Working Group participants](#)[Draft work plan](#)[Terms of Reference](#)[Disclaimer](#)[Contact](#)**SCIENCE2BUSINESS**[→ Collaboration server login](#)

www.responsiblenanocode.org

Principle One – Board Accountability

Each organisation shall ensure that accountability for guiding and managing its involvement with nanotechnologies resides with the Board or is delegated to an appropriate senior executive or committee.

Examples of how the organisation can demonstrate implementation of the Code may include:

1. Assigning accountability for nanotechnology, and for the implementation of the Code, to the Board or an appropriate senior level executive or committee.
2. Clearly articulate how responsibility for nanotechnologies, and for implementation of the Code, is assigned within the organisation.

Principle Two – Stakeholder Involvement

Each organisation shall identify its nanotechnology stakeholders, proactively engage with them and be responsive to their views.

Principle Three – Worker Health & Safety

Each organisation shall ensure high standards of occupational health and safety for its workers handling nano-materials and nano-enabled products. It shall also consider occupational health and safety issues for workers at other stages of the product lifecycle.

Principle Four – Public Health, Safety & Environmental Risks

Each Organisation shall carry out thorough risk assessments and minimise any potential public health, safety or environmental risks relating to its products using nanotechnologies. It shall also consider the public health, safety and environmental risks throughout the product lifecycle.

Principle Five – Wider Social, Environmental, Health and Ethical Implications and Impacts

Each organisation shall consider and contribute to addressing the wider social, environmental, health and ethical implications and impacts of their involvement with nanotechnologies.

Principle Six – Engaging with Business Partners

Each organisation shall engage proactively, openly and co-operatively with business partners to encourage and stimulate their adoption of the Code.

Principle Seven – Transparency and Disclosure

Each organisation shall be open and transparent about its involvement with and management of nanotechnologies and report regularly and clearly on how it implements the Responsible Nano Code.

NanoRisk: *The Lack of Evidence*



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Responsible Nanotechnologies

[Drs Roger Latham and Peter Oettgen, Harvard Medical School]

*"Wherever this field leads, it is likely to follow the well-known pathway of **incredible results** leading to **unrealistic expectations** followed by **sobering complications** and **disappointments** - and ultimately, **cautious optimism**."*



The screenshot shows the Responsible NanoCode website. At the top is a banner with the title "ResponsibleNanoCode" in blue text over a background image of a blue sphere on a wooden surface. Below the banner is a navigation menu on the left with links: Home, Progress and Public Consultation, Responsible NanoCode Working Group, Working Group participants, Draft work plan, Terms of Reference, Disclaimer, and Contact. To the right of the menu is the "Background to the Responsible NanoCode" section. It contains three paragraphs of text. The first paragraph states that in November 2006, the Royal Society, Insight Investment, and the Nanotechnology Industries Association (NIA) came together to explore the societal and economic impact of nanotechnology. The second paragraph describes a workshop that brought together seventeen European companies. The third paragraph mentions a briefing paper titled "An Uncertain Business: The technical, social and commercial challenges presented by nanotechnology". Below the text are logos for the founding partners: The Royal Society, Insight Investment (HBOS plc), NIA (Nanotechnology Industries Association), and the Nanotechnology Knowledge Transfer Network. At the bottom of the page is the URL "www.responsiblenanocode.org" in green text.

ResponsibleNanoCode

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Founding partners

THE ROYAL SOCIETY

Insight INVESTMENT
HBOS plc

NIA
Nanotechnology Industries Association

Nanotechnology
Knowledge Transfer Network

www.responsiblenanocode.org



Nanotechnology
Industries Association

Contact:

Dr Steffi Friedrichs
Nanotechnology Industries Association
PO Box 581
Cambridge
CB1 0FF

steffi.friedrichs@nanotechia.co.uk

Thank you!