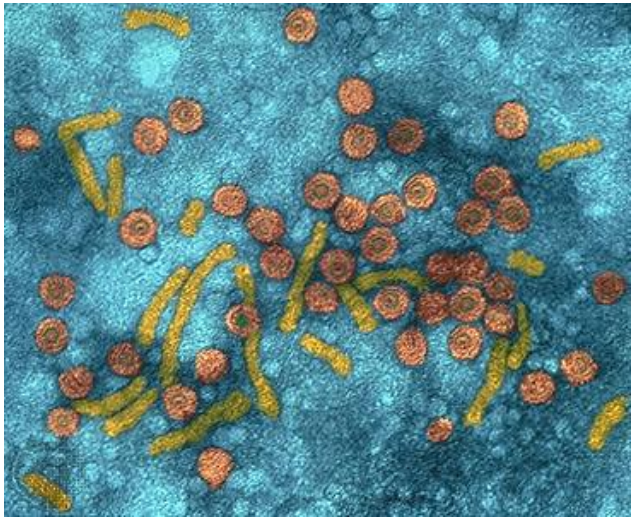

Nanoinformatics 2013, Philadelphia, 15 October 2013

# nanoWG Roundtable Discussion: Special Topics

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## Background & Purpose

The nanoWG encourages open, weekly teleconference on informatics for nanoparticles, primarily in a medical context (NIH-NCI);

Several of us met last night to discuss “mundane” issues surrounding database structures and expectations involving nanotechnology;

Data are being compiled and reviewed in various government-sponsored efforts raising issues of “official” data using “compliance” criteria to address regulatory activities.

After an overview of recent EU and US activities, we will discuss 3-4 “special topics”

**Braque: Guggenheim**

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# What do I mean ?

"In order to inform consumers….

- …Regulation (EU) No 1169/2011 provides that all …..engineered nanomaterials must be clearly indicated… ingredients and the names …. followed by the word 'nano' in brackets.

"However…

- …indicating such food additives ….preceded by the word 'nano' may confuse the consumers as it may suggest that those additives are new while in reality they have been used in foods in that form for decades.

"Taking into account…

- food additives included in the Union lists …should not be mandatorily qualified as 'nano' ….and should therefore not be covered by the definition of engineered nanomaterials.

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# List of materials in the JRC Nanomaterials (NM) Repository

Last update: 26 May 2011

| | | | | |
|---|---|---|---|---|
| NM-105 | Titanium Dioxide | Titanium Dioxide rutile-anatase | 95 | 22 |
| NM-110 | Zinc Oxide, uncoated | Zinc Oxide | 150 | 42 |
| NM-111 | Zinc Oxide, coated | Zinc Oxide coated triethoxycaprylsilane | 140 | 34 |
| NM-200 | Silicon Dioxide | Synthetic Amorphous Silica PR-A-02 | 47 | 20 |

| | |
|---|---|
| NM-110 | Zinc oxide, uncoated |
| NM-111 | Zinc oxide, coated |
| NM-112 | Zinc oxide, uncoated |
| NM-113 | Zinc oxide, uncoated |

The PROSPEcT Project (PROSPEcT: Ecotoxicology Test Protocols for Representative Nanomaterials in Support of the **OECD Sponsorship Programme**) is a 50:50 Public-Private-Partnership between

PROSPECT
Global Nanomaterials Safety

JRC Scientific and Technical Reports

**NM-Series of Representative Manufactured Nanomaterials**

**Zinc Oxide NM-110, NM-111, NM-112, NM-113**
**Characterisation and Test Item Preparation**

**Working Party on Manufactured Nanomaterials**

**Characterisation and test item preparation**
**Status Report on Identification of In Vitro Dispersion protocols for Zinc Ox (NM 110, NM-111, NM-112, NM-113)**

**8th Meeting of the Working Party on Manufactured Nanomaterials**

**16-18 March 2011 at OECD Headquarters Conference Centre, 2 rue André Pascal, Paris, begining at 9h30 on the first day.**

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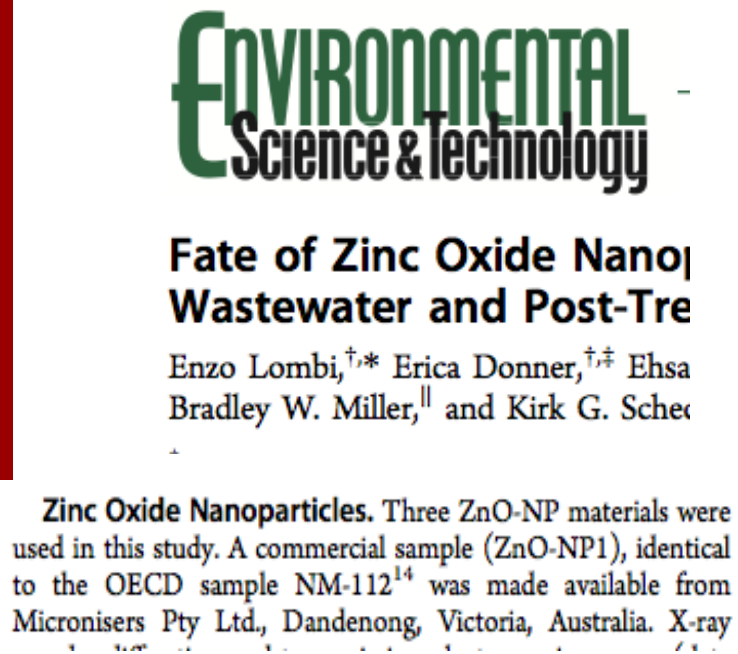
# Where is NM-112 ?


ENVIRONMENTAL Science & Technology

**Fate of Zinc Oxide Nanop**
**Wastewater and Post-Tre**

Enzo Lombi,[†,*] Erica Donner,[†,‡] Ehsa
Bradley W. Miller,[∥] and Kirk G. Sche

**Zinc Oxide Nanoparticles.** Three ZnO-NP materials were used in this study. A commercial sample (ZnO-NP1), identical to the OECD sample NM-112[14] was made available from Micronisers Pty Ltd., Dandenong, Victoria, Australia. X-ray

BASF supplied by
Nanophase of Illinois

- NM-materials are commercial
- NM-113 is “bulk” reference
- Connects lab work to OECD sponsorship program
- EC wants to prevent situations such as Lombi
- European products favored: NM-110 and NM-111 are BASF Zcote & Zcote HP1
- NM-112 is Australian

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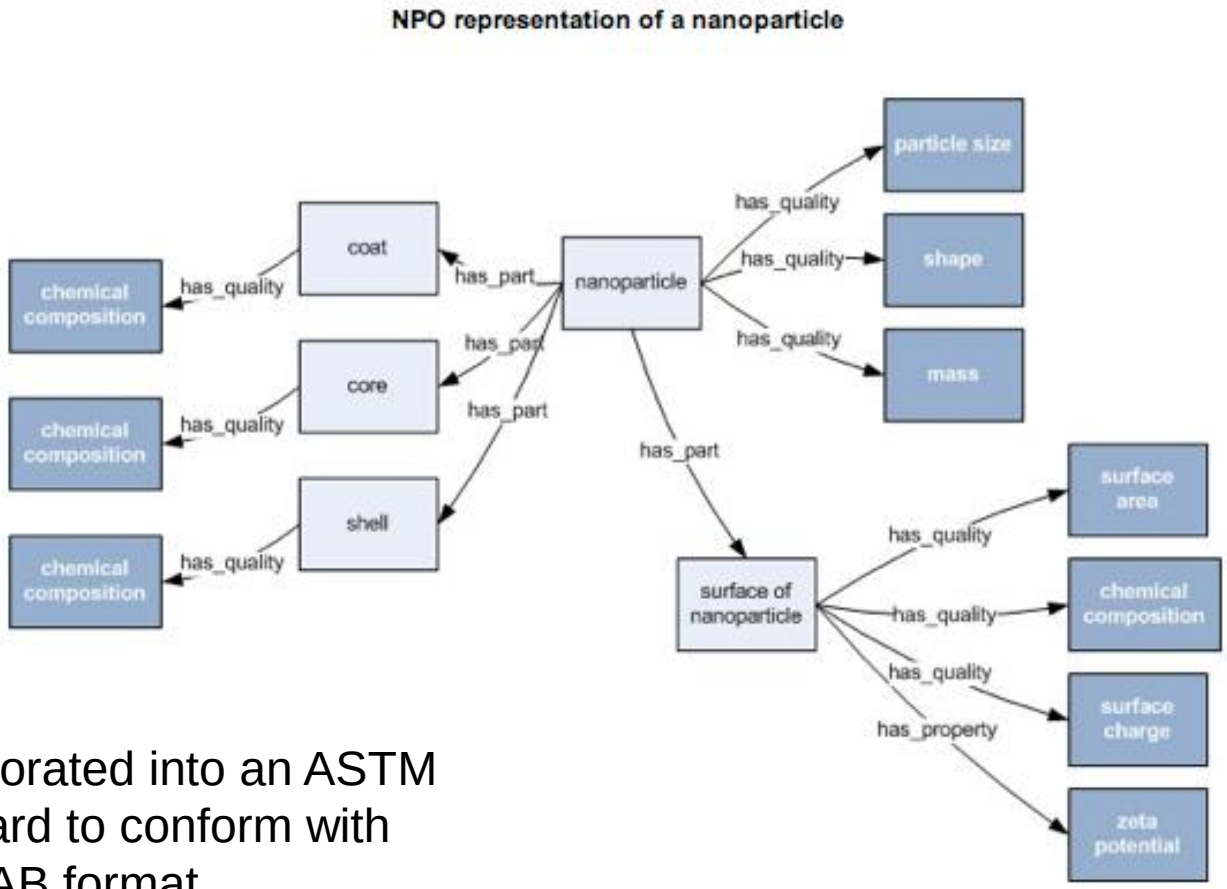
# Nanoparticle Ontology




Incorporated into an ASTM standard to conform with ISA-TAB format

Dennis Thomas, Nathan Baker and Rohit Pappu

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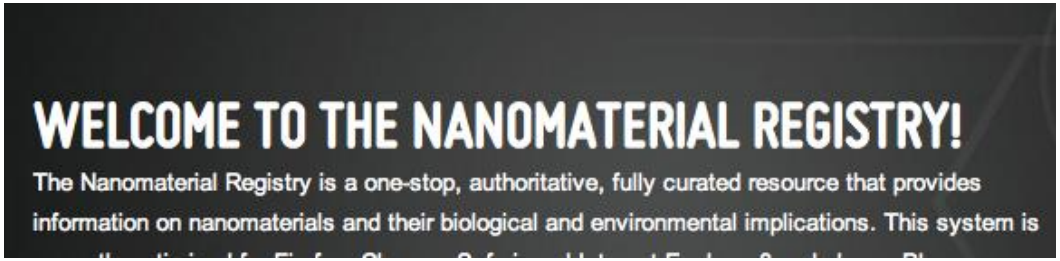


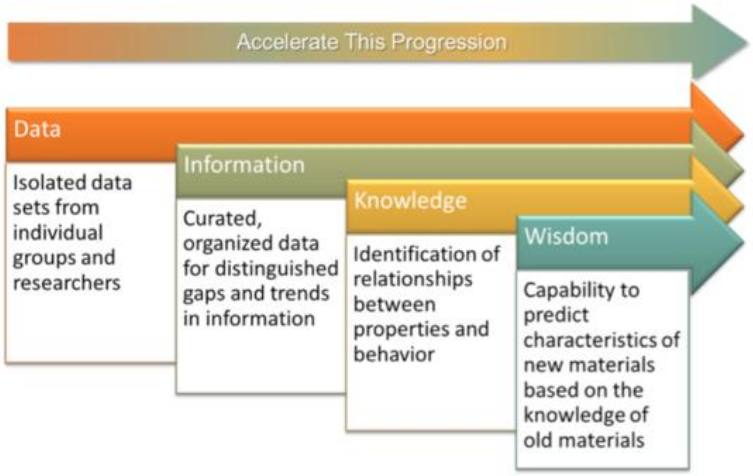


Key Points:
1). Minimal information set;
2). Data Compliance;
3). Controlled vocabulary;
4). Ontology

**"are being developed"**

- The goal of the Registry is to archive a sufficiently large, accessible, and centralized body of integrated information to enable researchers in gaining knowledge from accumulated data.
- …data are archived, they are transformed into information via specific data curation and structured presentation

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# Special Topic #1

- Comments on EU Activities
  - OECD sponsorship progress ?
  - How do we bridge EU-US collaboration ?
- US Informatics Activities
  - Nanomaterial Registry + ??
  - CEINT, ONAMI, CEIN + ???
  - How do we promote public, shared, annotated databases for modeling and determining reproducibility???

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# Special Topic #2

- Curator's role in general
  - Rely on the literature description or annotate to meet database requirements ?

- How do we map among disciplines, databases and curating techniques to leverage available data ?

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# Special Topic #3

Are commercial products a separate class ?

- Amorphous silica is 1.5 million tpa
- Encourages traceability to established grades and names

Are physico-chemical data needed at all steps or are they needed across steps ?

- Isn't particle size in the test medium the issue for a biologist and primary particle size for the product ?
- Isn't tracing from the original sample to the local conditions & sample prep the objective ?

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# Thank You

*Ad hoc* Philadelphia Chapter of the nanoWG

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- Kim Guzan
- Patrick Henron
- Fred Klaessig
- Sharon Ku
- Karmann Mills
- Kaizhi Tang
- Mark Tuominen

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