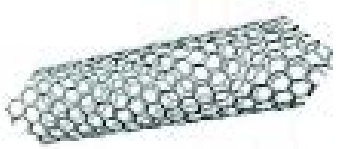
A Joint Workshop 2012



eu-us
bridging nanoEHS research efforts

25-26 OCTOBER 2012, HELSINKI, FINLAND

Exposure through the Life Cycle, with Material Characterization

CoChairs

Richard Canady

Thomas Kuhlbusch

Premise for the Research Need

- Several emerging lines of research are discovering that the detection, characterization, and evaluation of the nano-specific attributes of what is emitted from product-uses of nanomaterials can be highly ***context dependent***.

- Hence, there is an increasing understanding of the need to assess the fate and behaviour of nanomaterials ***at every stage of their lifecycle***, from production through use in products (including wear and tear aspects) through final disposal of the product and potential release of the nanomaterials into the environment.

This includes, potentially:

- Release processes from production, use, to end of life,
- Nanomaterial characterization and exposure evaluation at every stage of the life cycle,
- Transformation, partitioning and biomodification,
- Accumulation in environmental sinks etc.
- Synergism with other potential toxicants as a consequence of the exposure / release / transformation cycles
- Databases and models for exposure evaluation and clustering of nanomaterials
- Basic research efforts have to be backed up by harmonisation and standardisation activities.

Need for a Community of Research

- Concurrent emergence of understanding of the elements of "real world" ENM risk evaluation in multiple laboratories
  - What makes an ENM mixture biologically relevant?
  - How do we measure these "elements" of the ENM?
  - What is the fate of these ENM elements in the environment?
- Products of nanotechnologies are already in commerce and many more beneficial ones in the pipeline
- Tremendous complexity of ENM mixtures analysis makes it unclear WHICH data are relevant, so sharing of emerging data is needed to allow early trend analysis

Benefits

- Value to risk understanding and product development of sharing research findings early in development
- Value to researchers in finding collaborations, new topics, and applications of data
- Value to funding organizations by pooling resources to build knowledge quickly

Plan to initiate

- Provide an online platform for sharing information about
  - Research projects
  - Methods
  - Funding opportunities
- Convene experts on topics within the theme, to
  - Build collaborations
  - Share emerging findings
  - Build knowledge

First two efforts for the CoR

1) Gathering/providing measurement methods information
   - Part of the information sharing platform
   - ***Gabriele Windgasse***

   "Developing a Resource Tool for Concepts and Methods to Analyze Engineered Nano Materials in Environmental Media Throughout their Life Cycle"

2) Focus on Fate Assessment
   - A topical area to convene experts
   - ***Geert Cornelis***

   "Environmental Risk Assessment of ENP: fate assessments as the way forward"

Goals for discussion this afternoon

Context:

*We are proposing to develop a resource for sharing information and for convening experts. The need is **critical** to understanding real risks of ENP.*

Our need from you:

- Specific feedback on the focus areas
- Ideas on how to support the data generation and database maintenance
  - Who hosts, pays, maintains?
  - How to coordinate with other CoRs?
  - How do we promote efficient gathering and availability? (Wiki, Cloud, International Organization, etc)
- Specifics on the data sets and experts
  - What kinds of data and experts are needed, where are they, how do we get access?
  - Structural components of the data sets – what elements are needed

Rapporteurs for this session

- Jerome Rose

  Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement/Centre National de la Recherche Scientifique, France

- Stacey Sandridge

  National Nanotechnology Coordination Office, USA