

### Invited Speakers

Prof. Michael F. Hochella, Jr.  
Virginia Polytechnic Institute and State University

Dr. Richard Handy  
University of Plymouth

### Scientific Committee

M. Baalousha – University of Birmingham

A. Baun – NanoDTU

J. Bolldorf – Umweltbundesamt Wien

M. Delay – University of Karlsruhe

O. Diwald – TU Vienna

M. Fürhacker – BOKU Vienna

M. Hasselov – Gothenburg University

Th. Hofmann – Vienna University

F. von der Kammer – Vienna University

D. Pum – BOKU Vienna

J. Thieme – University of Goettingen

H. Zänker – Research Center Rossendorf



### Outline

**The** rapid development of nanotechnology has risen concerns about possible impacts of engineered nanoparticles on human health and the environment.

**In** environmental and geosciences the investigation of natural colloids (nanoparticles) and processes in the nanoscale is a research topic for nearly three decades.

**One** mayor gap in knowledge is the behavior and fate of engineered nanoparticles in the environment and the detection and characterisation in natural aquatic systems and laboratory experiments.

**It** is the scope of this workshop to bring together experts from environmental nanosciences, nano(eco)toxicology and nanotechnology to present the state of the art in their disciplines and intensify cross-border discussion and information flow.

# Workshop on Aquatic Nanoscience & Nanotechnology

- bridging environmental nanosciences  
and nanotoxicology -

1<sup>st</sup> International Workshop

**Vienna University**  
**9. – 11. December 2007**



organized by:  
working group „Aquatic  
Nanoscience and Nanotechnology“  
in the German Waterchemical  
Society and the Department for  
Environmental Geosciences

## Workshop Program (Titles only)

### Monday 10<sup>th</sup> December

#### Morning

08:00-09:00 Registration  
09:00-09:15 Welcome & Opening

#### :: Session 1 Behavior in Aquatic Media::

09:15-10:00 Aquatic Environmental Nanoparticles  
10:00-10:20 Biogeochemical Reactivity of Engineered Iron Oxide Nanoparticles in Aquatic Systems  
10:20-10:40 The Influence of Natural and Manufactured Nanoparticles on Heavy Metal Behavior in Natural Waters  
10:40-11:00 Poster Spotlight

#### :: Café :: Poster Session::

11:30-11:50 Environmental Behavior of Engineered Nanoparticles: Aggregation and Disaggregation of Iron Oxide Nanoparticles  
11:50-12:10 Nanoparticles and Inorganic Pollutants: Basic Characterization, Interactions and Consequences for their Environmental Behaviour  
12:10-12:30 Sorption of U(VI) on Multiwall Carbon Nanotubes

#### :: Lunch::

#### Afternoon

#### :: Session 2 Characterization Techniques ::

14:00-14:20 X-ray Spectromicroscopy Sheds Light on the World of Nanoparticles  
14:20-14:40 Soft X-ray Stereo Microscopy for Investigation of Dynamics in Colloidal Systems  
14:40-14:55 Poster Spotlight

#### :: Café :: Poster Session::

15:30-15:50 Laser-induced Breakdown Detection: Recent advancements  
15:50-16:10 Nanoparticle-metal Associations Studied with FFF-HRICP-MS  
16:10-16:30 Challenges and Possibilities for Measurements of Environmental Concentrations of Engineered Nanoparticles in the Aquatic Environment

#### :: Poster Session::

#### :: Dinner::

### Tuesday 11<sup>th</sup> December

#### :: Session 3 Eco-toxicology ::

09:00-09:45 Toxic Effects of Nanomaterials to Trout: Implications for Fish Toxicity Testing, Characterisation of Test Media, & Regulation  
09:45-10:05 Ecotoxicity and Bioaccumulation: the Role of Nanoparticles as Modifying Factors  
10:05-10:25 Toxicity of Silver Nanoparticles and Ionic Silver to Chlamydomonas reinhardtii.  
10:25-10:40 Poster Spotlight

#### :: Café :: Poster Session::

11:10-11:30 Transport and Effects of Engineered Nanoparticles in River Systems  
11:30-11:50 Carbon Nanotubes in Aquatic Environments: Effects of Surface Oxidation on Sorption Properties and Colloidal Stability  
11:50-12:10 Environmental Parameters and Biophysicochemical Reactions that Control the Dispersion and fate of Engineered Nanoparticles in the Environment  
12:10-12:30 Discussion and concluding remarks

#### :: Poster Session::

#### :: Lunch::