



nano
SAFE'16

FIFTH NANOSAFE INTERNATIONAL CONFERENCE

*HEALTH AND SAFETY ISSUES
RELATED TO NANOMATERIALS
FOR A SOCIALLY RESPONSIBLE APPROACH*

7-10 November, 2016

Minatec - Grenoble, France

PROGRAMME

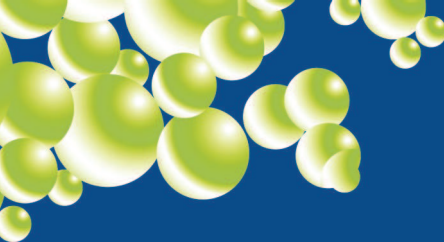


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Welcome

Dear Colleagues,

Nano objects represent a powerful “enabling technology” leading to revolutionary breakthroughs in many different areas vital for humanity including medicine, energy, environment, etc. and also preserving the rare mineral resources by rendering matter more efficient.

For one of the first time in the science history, risks have been taken into account since the very beginning of the manufactured nanomaterials and Nanosafety is now considered as a specific new scientific area, gaining in importance and maturity each days thanks to our dynamic community spread all over the world.

Following the successful outcome of the four past international conferences on Safe Production and Use of Nanomaterials: Nanosafe 2008, 2010, 2012 and 2014, the **Platform NanoSafety “PNS”** has the pleasure to welcoming you again to Minatec, Grenoble, for this fifth edition with some of the most famous specialists in the field.

This year, the subtitle of the conference has been slightly changed to “**Health and Safety Issues Related to Nanomaterials**” in order to welcome inboard two new topics: **Urban Nanoparticles** and some aspect of **Nanomedicine**, in addition to the usual issues addressed in previous Nanosafe conferences such as Detection and Characterization, Expology, Release from Nano-enabled Products, Safer by Design Nanomaterials and Process, Risk Management, Nanoproducts to waste, Toxicology, Environmental Interactions, Regulation and Standardization and Nano Responsible Development.

Furthermore, three 3 round tables are organized in order to promote friendly discussions between attendees: **Nano-Responsible Development, Urban Particles Mitigation: What is Reasonably Possible, Nanomedicine: Benefice/Risk.**

This conference represents the opportunity to exchange about Nanosafety issues with other researchers from more than 28 countries.

Enjoy this new edition!

The Nanosafe 2016 Organizers



François TARDIF



*Jean-François
DAMLENCOURT*



Philippe CHARLETY



Gaelle CHARLIER

LEGEND

	Plenary Sessions Auditorium Platine - Level 1 <i>Except session 3.5, session 5.3 & session 6 in room Chrome 5 - Level 1</i>		Panel Discussion Chrome 5 - level 1
	Parallel Sessions Level 1 (details on programme)		Satellite Meetings
	Coffee Breaks & Lunch Level 0, at the poster area		

Monday 7th November - 2016

10:00 am - 1:30 pm	Registration
1:30 pm - 4:00 pm	Conference Opening
4:00 pm - 4:30 pm	Coffee Break
4:30 pm - 5:15 pm	Session 1: Measurement and characterization of nano objects Speaker: Daren Chen
5:15 pm - 6:30 pm	Session 1 Auditorium Platine

Tuesday 8th, November - 2016

8:00 am - 8:45 am	Session 2: Exposure Speaker: Christof Asbach			
8:45 am - 10:00 am	Session 2 Auditorium Platine	Session 1 Chrome 1	Session 3.5: Nano Responsible development Speaker: Steffi Friedrichs Chrome 5	
10:00 am - 10:30 am	Coffee Break			
10:30 am - 11:15 am	Session 3.1: Release from nano-enabled products Speaker: Wendel Wohlleben			
11:15 am - 12:30 pm	Session 3.1 Auditorium Platine	Session 1 Chrome 1	Session 2 Chrome 3	
12:30 am - 2:00 pm	Lunch break and poster session			
2:00 pm - 2:45 pm	Session 3.2: Safer by design nanomaterials and process Speaker: Benjamin Gilbert			
2:45 pm - 4:00 pm	Session 3.2 Auditorium Platine	Session 3.1 Chrome 1	Session 2 Chrome 3	Session 6: Regulation/ Standardization Speaker: Daniel Bernard Chrome 5
4:00 pm - 4:30 pm	Coffee Break			
4:30 pm - 5:15 pm	Session 3.3: Risk Management Speaker: Eric Drais			
5:15 pm - 6:30 pm	Session 3.3 Auditorium Platine	Session 3.1 Chrome 1	Session 3.2 Chrome 3	5:30 pm - 6:30 pm Nanomedicine: Benefit / Risk

Wednesday 9th, November - 2016

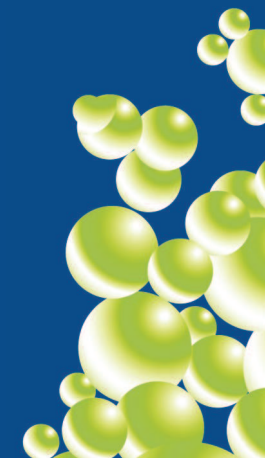
8:00 am - 8:45 am	Session 3.4: From Nanoproducts to waste Speaker: Bernd Nowack			
8:45 am - 10:00 am	Session 3.4 Auditorium Platine	Session 3.2 Chrome 1	Session 3.3 Chrome 3	9:00 am - 10:00 am Urban Particles Mitigation
10:00 am - 10:30 am	Coffee Break			
10:30 am - 11:15 am	Session 4: Urban Particles Speaker: David Pui			
11:15 am - 12:30 pm	Session 4 Auditorium Platine	Session 3.3 Chrome 1	Session 3.4 Chrome 3	Session 6 Chrome 5
12:30 am - 2:00 pm	Lunch break and poster session			
2:00 pm - 2:45 pm	Session 5.1: Toxicology Speaker: Günter Oberdorster			Nano-safety Cluster Titane 2
2:45 pm - 4:00 pm	Session 5.1 Auditorium Platine	Session 4 Chrome 1	Session 5.3: Safe use of nano-objects for medicine applications Speaker: Alexandre Ceccaldi Chrome 5	
4:00 pm - 4:30 pm	Coffee Break			
4:30 pm - 5:15 pm	Session 5.2: Environmental interactions of nanomaterials		Session 5.1 Chrome 3	Nano-safety Cluster Titane 2
5:15 pm - 6:30 pm	Session 5.2 Auditorium Platine	Session 6 Chrome 1	Session 5.3 Chrome 5	

Thursday 10th, November - 2016

8:00 am - 8:45 am	Session 3.6: Commercial Equipment Speaker: Raphael de Thoury		Session 5.1 Chrome 3	Guidenano Chrome 1	Nanomet Palladium 2
8:45 am - 10:00 am	Session 3.6 Auditorium Platine				
10:00 am - 10:30 am	Coffee Break				
10:30 am - 12:30 pm	Session 5.2 Auditorium Platine	Session 5.1 Chrome 3	10:30 am 12:00 pm Responsible development		
12:30 pm - 1:00 pm	End of the Conference / Conclusion Auditorium Platine				
1:00 pm - 2:00 pm	Lunch break				
2:00 pm - 5:00 pm	Nanold & Serenade Chrome 1			NanoStreeM Chrome 5	

GALA DINNER: WEDNESDAY 9th, 2016

More detailed information available page 62



Session 1: Measurements and characterization of nano objects

Monday 7 th	4:30 pm - 5:15 pm	Plenary Session	Auditorium Platine	Level 1
Monday 7 th	5:15 pm - 6:30 pm	Parallel Session	Auditorium Platine	Level 1
Tuesday 8 th	8:45 am - 10:00 am	Parallel Session	Chrome 1	Level 1
Tuesday 8 th	11:15 am - 12:30 pm	Parallel Session	Chrome 1	Level 1

Session 2: Exposure

Tuesday 8 th	8:00 am - 8:45 am	Plenary Session	Auditorium Platine	Level 1
Tuesday 8 th	8:45 am - 10:00 am	Parallel Session	Auditorium Platine	Level 1
Tuesday 8 th	11:15 am - 12:30 pm	Parallel Session	Chrome 3	Level 1
Tuesday 8 th	2:45 pm - 4:00 pm	Parallel Session	Chrome 3	Level 1

Session 3.1: Release from nano-enabled products

Tuesday 8 th	10:30 am - 11:15 am	Plenary Session	Auditorium Platine	Level 1
Tuesday 8 th	11:15 am - 12:30 pm	Parallel Session	Auditorium Platine	Level 1
Tuesday 8 th	2:45 pm - 4:00 pm	Parallel Session	Chrome 1	Level 1
Tuesday 8 th	5:15 pm - 6:30 pm	Parallel Session	Chrome 1	Level 1

Session 3.2: Safer by design nanomaterials and process

Tuesday 8 th	2:00 pm - 2:45 pm	Plenary Session	Auditorium Platine	Level 1
Tuesday 8 th	2:45 pm - 4:00 pm	Parallel Session	Auditorium Platine	Level 1
Tuesday 8 th	5:15 pm - 6:30 pm	Parallel Session	Chrome 3	Level 1
Wednesday 9 th	8:45 am - 10:00 am	Parallel Session	Chrome 1	Level 1

Session 3.3: Risk management

Tuesday 8 th	4:30 pm - 5:15 pm	Plenary Session	Auditorium Platine	Level 1
Tuesday 8 th	5:15 pm - 6:30 pm	Parallel Session	Auditorium Platine	Level 1
Wednesday 9 th	8:45 am - 10:00 am	Parallel Session	Chrome 3	Level 1
Wednesday 9 th	11:15 am - 12:30 pm	Parallel Session	Chrome 1	Level 1

Session 3.4: From nanoproducts to waste

Wednesday 9 th	8:00 am - 8:45 am	Plenary Session	Auditorium Platine	Level 1
Wednesday 9 th	8:45 am - 10:00 am	Parallel Session	Auditorium Platine	Level 1
Wednesday 9 th	11:15 am - 12:30 pm	Parallel Session	Chrome 3	Level 1

Session 3.5: Nano responsible development

Tuesday 8 th	8:45 am - 10:15 am	Plenary Lecture + Parallel Sessions	Chrome 5	Level 1
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Session 3.6: Commercial equipment

Thursday 10 th	8:00 am - 8:45 am	Plenary Session	Auditorium Platine	Level 1
Thursday 10 th	8:45 am - 10:00 am	Parallel Session	Auditorium Platine	Level 1

Session 4: Urban particles

Wednesday 9 th	10:30 am - 11:15 am	Plenary Session	Auditorium Platine	Level 1
Wednesday 9 th	11:15 am - 12:30 pm	Parallel Session	Auditorium Platine	Level 1
Wednesday 9 th	2:45 pm - 3:30 pm	Parallel Session	Chrome 1	Level 1

Session 5.1: Toxicology

Wednesday 9 th	2:00 pm - 2:45 pm	Plenary Session	Auditorium Platine	Level 1
Wednesday 9 th	2:45 pm - 4:00 pm	Parallel Session	Auditorium Platine	Level 1
Wednesday 9 th	4:30 pm - 6:30 pm	Parallel Session	Chrome 3	Level 1
Thursday 10 th	8:00 am - 10:00 am	Parallel Session	Chrome 3	Level 1
Thursday 10 th	10:30 am - 12:30 pm	Parallel Session	Chrome 3	Level 1

Session 5.2: Environmental interactions of nanomaterials

Wednesday 9 th	4:30 pm - 5:15 pm	Plenary Session	Auditorium Platine	Level 1
Wednesday 9 th	5:15 pm - 6:30 pm	Parallel Session	Auditorium Platine	Level 1
Thursday 10 th	10:30 am - 12:30 pm	Parallel Session	Auditorium Platine	Level 1

Session 5.3: Safe use of nano objects for medicine applications

Wednesday 9 th	2:45 pm - 4:00 pm	Plenary Lecture + Parallel Session	Chrome 5	Level 1
Wednesday 9 th	5:15 pm - 6:15 pm	Parallel Session	Chrome 5	Level 1

Session 6: Regulation / Standardization

Tuesday 8 th	2:45 pm - 4:00 pm	Plenary Lecture + Parallel Session	Chrome 5	Level 1
Wednesday 9 th	11:15 am - 12:00 pm	Parallel Session	Chrome 5	Level 1
Wednesday 9 th	5:15 pm - 6:15 pm	Parallel Session	Chrome 1	Level 1

CHAIR: François TARDIF (CEA/PNS, FR), Jean-François DAMLENCOURT (CEA/PNS, FR) & Frédéric SCHUSTER (CEA, FR)

CO-CHAIR: Georgios KATALAGARIANAKIS (EC, BE)

INTERNATIONAL SCIENTIFIC COMMITTEE

Christof ASBACH (IUTA, DE)	Simona MURA (Université Paris Sud, FR)
Daniel BERNARD (CEA/PNS, FR)	Fabrice NESSLANY (Institut Pasteur, FR)
Jorge BOCZKOWSKI (INSERM, FR)	Bernd NOWACK (EMPA, CH)
Patrick BOISSEAU (CEA/PNS, FR)	Günter OBERDORSTER (U. Rochester, USA)
Jean-Yves BOTTERO (CEA/PNS, FR)	David PUI (University of Minnesota, USA)
Marie CARRIERE (CEA, FR)	Jérôme ROSE (CNRS-CEREGE, FR)
Flemming CASSEE (RIVM, NL)	Myriam RICAUD (INRS, FR)
Alexandre CECCALDI (ETPN, FR)	Vicki STONE (HWU, GB)
Daren CHEN (University of Virginia, USA)	Raphael de THOURY (Nanobadge, Alcen, FR)
Eric DRAIS (INRS, FR)	Mark WIESNER (Duke University, USA)
Claude EMOND (University of Montreal, CA)	Wendel WOHLLEBEN (BASF, DE)
Steffi FRIEDRICHS (OECD, FR)	
Benjamin GILBERT (Berkeley, USA)	
Peter HOET (Ku Leuven, BE)	
Sophie LANONE (INSERM, FR)	

LOCAL ORGANIZING COMMITTEE - THE NANOSAFETY PLATFORM (PNS)

Gaëlle CHARLIER (CEA/PNS, FR)

Philippe CHARLETY (CEA/PNS, FR)
Pascal CONCHE (CEA/MINATEC, FR)
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Vanessa GAULTIER (CEA/PNS, FR)
François TARDIF (CEA/PNS, FR)
Florian VUONG (CEA/MINATEC, FR)

THANKS TO THE SUPPORT RECEIVED FROM OUR VOLUNTEER TEAM:

S. Derrough, M. Aru, D. Boutry, S. Artous, C. Ducros, C. Philippot, S. Jacquinet, L. Givelet, S. Clavaguera, C. Brouard, A. Guiot, V. Bartolomei, D. Locatelli, S. Motellier, C. Desvergne, E. Zimmermann

The Nanosafety Platform



Fully dedicated to Health and Safety issues related to nanomaterials

Located at CEA Grenoble, France

Well-defined assignments and advanced specific tools

One of the main PNS goals is to contribute to the responsible and competitive development of nanomaterials. The PNS benefits from the support of CEA (*The French Alternative Energies and Atomic Energy Commission* - 16 000 researchers) in terms of fundamental research, safety technologies and nanomaterials pilot lines in actual use. It also relies on "equipments of excellence" for detection and characterization (Cryo Tomo TEM for complex media).



A wide range of R&D and services available straightforward through a one stop shop to help industrials, unique in France and Europe.

PNS R&D activities focuses on 6 main topics:

- Technologies and methods for advanced characterization & detection
- Safer-by-Design materials and processes
- Toxicology and ecotoxicology through partnerships
- Industrial hygiene
- Lifecycle management and dissemination in the environment
- Urban particles

PNS provides a wide range of services suitable to industry:

- Consulting and auditing on industrial health & safety issues
- Measurements at workplace
- Characterization
- Release testing in use conditions (accelerated aging / abrasion resistance, etc) in order to reduce consumers exposure to nanoparticles
- Nanoparticle toxicity evaluation
- Training (catalog of standard training courses and development of customized, company-specific training courses) for operators and prevention workers



Thanks to its integrated R&D and services activities, to its independence of analysis and to its deep commitment to confidentiality, PNS provides a unique and efficient response to industrial needs in nanosafety.

Nanosafe 2016 is organized by the PNS.

Visit us at www.nanosafety-platform.com - Commercial Contact : samir.derrough@cea.fr

Monday 7 November, 2016

Invited Speakers & Chairmen

Monday 7 November, 2016



Georgios KATALAGARIANAKIS

European Commission, Belgium

Graduated as mining and metallurgy engineer from the National Technical University of Athens in 1976. He obtained a diploma on mechanical engineering from the University of Thessaloniki in 1989 and a PhD degree from the Imperial College of Science, Technology and Medicine in 1998.

He has worked for ten years in the underground mining industry and the mineral resources authority of Greece before joining the European Commission in 1989 as administrator. He has been responsible for European research in the fields of mining and metallurgy, recycling, construction and maintenance of buildings and civil infrastructure, tunnelling, industrial safety and ergonomics, etc. He is currently responsible for research in the area of nanotechnology safety and the use of nanotechnology in buildings.

Plenary Session: Opening

Room: Auditorium Platine / 2:00pm - 2:30pm

Tuesday 8 November, 2016



Flemming CASSEE

RIVM, The Netherlands

Prof dr. Flemming R. Cassee, is an inhalation toxicologist since 1995 and is involved in the research on the adverse health effects of ambient particulate matter, nanomaterials and gaseous components. He supports government authorities at all levels, from the local to the international by coordinating and conducting research and providing advice to authorities/policy makers. He is professor in Inhalation Toxicology at the Institute for Risk Assessment Sciences at the Utrecht University, the Netherlands. He also leads the Inhalation Toxicology unit of the Center for Sustainability, Environmental & Health at the National Institute for Public Health and the Environment (RIVM) of the Netherlands. He is editor of Particle and Fibre Toxicology, president of the Dutch Society of Toxicology.

Plenary Session: Opening

Room: Auditorium Platine / 2:30pm - 3:00pm

Wednesday 9 November, 2016



Vicki STONE

Heriot-Watt University, UK

Vicki Stone (BSc PhD FIBiol FRSE FRC) is the current holder of the Royal Society of Chemistries Toxicology Award (2015-16). Vicki is Director of the Nano Safety Research Group at Heriot-Watt University, Edinburgh, and an Honorary Principal Scientist at the Institute of Occupational Medicine.

She has acted as the Editor-in-chief of the journal Nanotoxicology (<http://informahealthcare.com/nan>) for 6 years (2006-2011). Vicki has also published over 150 publications pertaining to particle toxicology over the last 16 years and was recently recognised by Thomson Reuters as one of the top 1% of all researchers in the world for the most cited publications in the field of Pharmacology and Toxicology.

Plenary Session: Opening

Room: Auditorium Platine / 3:00pm - 3:30pm

Thursday 10 November, 2016



Simona MURA

University Paris-Sud, France

Simona MURA is currently Associate Professor at the Paris-Sud University (France). In 2009, she was awarded her PhD in Chemistry and Technology of Drug (University of Cagliari, Italy) and then she joined the group of Pr. E. Fattal (Institut Galien Paris-Sud, Paris-Sud University), as Post-doctoral researcher to study the lung toxicity of biodegradable nanoparticles. In 2011, she was appointed Associate Professor at the same University, within the framework of the Chaire d'excellence program.

She possesses a strong experience in the design and preclinical evaluation of drug delivery systems. Her research focuses on the development of *in vitro/in vivo* models as valuable tool for a more predictive and relevant evaluation of nanomedicines and on the investigation of the strategies which would enable nanoscale systems to efficiently cross the biological barriers.

Plenary Session: Opening

Room: Auditorium Platine / 3:30pm - 4:00pm



Da-Ren CHEN

University of Virginia, USA

Daren (Da-Ren) Chen, Ph.D., is now Floyd D. Gottwald Sr. Chair and Professor in Mechanical and Nuclear Engineering, Virginia Commonwealth University. He is also Chang jiang chaired professor, School of Environment, Tsinghua University, China.

He received his PhD. from Particle Technology Laboratory, University of Minnesota (1996). He is the principal investigator and inventor of electrospray monodisperse particle generator, nanometer differential mobility analyzer, high-through nanoparticle charger, fast scan electrical aerosol sizer, personal particle monitors, continuous gene transfecter and many other particle processing tools. He has published more than 120 peer-viewed journal papers. He holds 34 US and 4 international patents in the area of aerosol particle technology. He receives Sheldon K. Friedlander Award (1997), Smoluchowski Award (2002), Kenneth Whitby award (2005) and Benjamin Liu Award (2012) for his significant contribution in nanoparticle instrumentation and experimental techniques. He has intensive experience on particle sampling and characterization, particle instrumentation, atmospheric aerosol, micro-contamination control in semiconductor processing, filtration and separation, health effect of particles, nanotoxicity, and particle synthesis/generation for energy, pharmaceutical and biomedical applications.

Plenary Session: Session 1– Measurement and characterization of nano objects

Room: Auditorium Platine / 4:30pm - 5:15pm

Monday 7 November, 2016 - Auditorium Platine

Daily Program & Plenary Sessions

Monday 7 November, 2016

Tuesday 8 November, 2016

Wednesday 9 November, 2016

Thursday 10 November, 2016

1:30pm - 4:00pm *Opening Ceremony*

Chair: François Tardif, Univ. Grenoble Alpes, PNS, CEA, France

1:30pm - 2:00pm

François Tardif, Univ. Grenoble Alpes, PNS, CEA, France

Welcome from the organizing committee

2:00pm - 2:30pm

Georgios Katalagarianakis, European Commission, Belgium

Opening1: Nanosafety research trends for the next decade impulsed by European Commission

2:30pm - 3:00pm

Flemming Cassee, RIVM, The Netherlands

Opening2: Revue on nanotoxicology progress for urban and manufactured nanoparticles

3:00pm - 3:30pm

Vicki Stone, HWU, UK

Opening3: Using toxicology to benefit innovation and development

3:30pm - 4:00pm

Simona Mura, Université Paris-Sud, France

Opening4: Application of nanotechnology to medicine: recent developments, challenges and perspectives

4:00pm - 4:30pm

Coffee Break

4:30pm - 5:15pm *Session 1 : Measurement and characterization of nano objects*

4:30pm - 5:00pm

Speaker: Da-ren Chen, University of Virginia, USA

PL1: Development of Miniature Sizers for Ultrafine Particle Measurement

5:15pm - 6:30pm

Parallel Sessions (details page 13)

Session 1 : Measurements and characterization of nano objects // Auditorium Platine

Chair : Da-ren CHEN, University of Virginia, USA

Co-Chair : Olivier LE BIHAN, INERIS, France

SUB-SESSION 1: NANO-OBJECTS IN AIR

- PS1-1** **Quantification of organic and inorganic particles by LAAP-ToF-MS**
5:15 - 5:30 Rachel Gemayel, B. Temime-Roussel, H. Wortham and S. Gligorovski, (Laboratoire Chimie de l'Environnement -LCE-, CNRS UMR 7376, Aix Marseille Université, France)
- PS1-2** **An automated scanning electron microscopy procedure for nanoparticle characterisation in workplaces**
5:30 - 5:45 Kirsten I Kling, Anders B Bluhme, Ismo K Koponen, Antti J Koivisto, Keld A Jensen, (National Research Center for the Working Environment, Denmark)
- PS1-3** **Laser induced breakdown spectroscopy, a method to measure and characterize the personal exposure to airborne particles**
5:45 - 6:00 Quentin Renot, Michel Pourprix, Jean-Baptiste Sirven, Simon Clavaguera, (NanoSafety Platform, CEA – Grenoble, France)
- PS1-4** **Aerosol nanostructure study with porous grids – a review**
6:00 - 6:15 Olivier Le Bihan, Christophe Bressot, Morgane Dalle, Laurent Meunier, Olivier Aguerre-Chariol, (INERIS, France)
- PS1-5** **Experimental study of the performances of various condensation Particle counters challenged by steady-state airborne DEHS particles**
6:15 - 6:30 Sébastien Bau, André Toussaint, Raphaël Payet and Olivier Witschger, (Institut National de Recherche et de Sécurité - INRS, Laboratoire de Métrologie des Aerosols, France)

Tuesday 8 November, 2016

Chairmen

Monday 7 November, 2016



Christof ASBACH

IUTA, Germany

Dr.-Ing. Christof Asbach received his PhD in 2004 on the development of fine particle measurement system. He is an expert in aerosol instrumentation with various applications, including exposure measurement. During the last three years, he coordinated the European project nanoIndEx on assessment of personal exposure to airborne nanomaterials. He has (co-) authored over 100 publications and gave more than 100 talks over the past five years.

Plenary Session: Session 2- Exposure

Room: Auditorium Platine / 8:00am - 8:30am

Tuesday 8 November, 2016



Wendel WOHLLEBEN

BASF, Germany

Senior Scientist for characterization of nanomaterials at BASF, Dept. of Material Physics. Leads research projects on advanced materials development and on the safety of nanomaterials. Visiting scientist at the Harvard School of Public Health and at the Department of Materials and Interfaces at the Weizmann Institute, Israel.

Areas of expertise: Identification, characterization and grouping of nanoforms / lifecycle and release testing of nano-enabled products / femtosecond spectroscopy

Plenary Session: Session 3.1 - Release from nano-enabled products

Room: Auditorium Platine / 10:30am - 11:00am

Wednesday 9 November, 2016



Steffi FRIEDRICHS

OECD, France

Dr Steffi Friedrichs is a Policy Analyst for Biotechnology, Nanotechnology and Converging Technologies at the Organisation for Economic Cooperation and Development (OECD), which she joined after building and leading the Nanotechnology Industries Association (NIA), a sector-independent industries representation.

Plenary Session: Session 3.5 - Nano responsible development

Room: Chrome 5 / 8:45am - 9:15am

Thursday 10 November, 2016



Benjamin GILBERT

University of Berkeley, USA

Benjamin Gilbert is a Staff Scientist in the Energy Geoscience Division of Lawrence Berkeley National Laboratory. He obtained a B.A. in Natural Sciences from Cambridge University in 1994 and a PhD from the École Polytechnique Fédérale de Lausanne (EPFL) in 2000. He currently leads the Berkeley Geochemistry Group. Gilbert has made important contributions to the field of nanogeoscience, the study of the properties and roles of natural nanoscale minerals. This work encompasses the colloidal behavior of nanoparticles and clays, formation pathways and structure of oxide and sulfide mineral, and the photochemical and redox reactivity of transition metal minerals. For almost ten years, Gilbert has studied the fate and impact of engineered nanomaterials in environment and the chemical influences on biological transport and toxicity. He has contributed to the understanding of how material design can influence nanomaterial stability and toxicity and used complementary imaging methods to reveal internalization pathways and fate.

Plenary Session: Session 3.2 - Safer by design nanomaterial and process

Room: Auditorium Platine / 2:00pm - 2:30pm



Daniel BERNARD

CEA/PNS, France

Dr. Daniel Bernard is Senior Scientific Advisor for the *CEA Tech NanoSafety Platform*, and for the *Union des Industries Chimiques*. He is chairman of the Nanotechnology Committee of the *Ingénieurs & Scientifiques de France* Society. He is heavily involved in Nanomaterials standardization as Chairman of the AFNOR Committee, Convenor of the E.H.S. Working Group of the CEN and head of the french delegation at the ISO TC 229 Nanotechnologies.

He is graduated from the *Ecole Nationale Supérieure de Chimie de Paris-Chimie Paris-Tech*. He earned the *Docteur ès Sciences Physiques* degree from the Pierre & Marie Curie University.

Plenary Session: Session 6 - Regulation / Standardization

Room: Chrome 5 / 2:45pm - 3:15pm



Eric DRAIS

INRS, France

Eric DRAIS is a researcher in INRS (The French National Research and Safety Institute for the Prevention of Occupational Incidents and Diseases). He is specialized in organization and management of health and safety in the workplace. His works concern the health and safety management systems (ISO 45001, etc.) and the organization of the prevention, in particular towards nanomaterials. He participated in several national and international projects on this subject (OSHA Europa, ANR Nanonorma). He leads currently studies on the perception, the acceptability, the management and the regulation of the risks related to nanomaterials, in an international comparative approach (France/USA) and between business sectors (nanoelectronics and nanomedicine).

Plenary Session: Session 3.3 - Risk management

Room: Auditorium Platine / 4:30pm - 5:00pm

Tuesday 8 November, 2016 - Auditorium Platine*

Daily Program & Plenary Sessions

*Except Session 3.5 & Session 6 - Chrome 5

Monday 7 November, 2016

Tuesday 8 November, 2016

Wednesday 9 November, 2016

Thursday 10 November, 2016

8:00am-8:45am	Session 2: Exposure
<p>Speaker: Christof Asbach, IUTA, Germany</p> <p><i>PL2: Assessment of Personal Exposure to Airborne Nanomaterials - Lessons Learned from the Three Year project Nanoindex</i></p>	
8:45am - 09:15am	Session 3.5: Nano-responsible development
<p>Speaker: Steffi Friedrichs, OECD, France</p> <p><i>PL3.5: The concept of Responsible Nanotechnology: History, challenges and opportunities</i></p>	
8:45am - 10:00am	Parallel Sessions (details page 17)
10:00am - 10:30am	Coffee Break
10:30am - 11:15am	Session 3.1: Release from nano-enabled products
<p>Speaker: Wendel Wohlleben, BASF, Germany</p> <p><i>PL3.1: Rules and Rates of Releases From Nano-Enabled Products: Correlating Process, Product Matrix and Nanomaterial</i></p>	
11:15am - 12:30pm	Parallel Sessions (details page 19)
12:30pm - 2:00pm	Lunch break + Poster Session
2:00pm - 2:45pm	Session 3.2: Safer by design nanomaterials and process
<p>Speaker: Benjamin Gilbert, University of Berkeley, USA</p> <p><i>PL3.2: Safer-by-design principles for nanofibers at the human-nanotechnology interface</i></p>	
2:45pm - 3:15pm	Session 6: Regulation / Standardization
<p>Speaker: Daniel Bernard, CEA-PNS, France</p> <p><i>PL6: To name things wrongly is to add to the misfortune of the « Nanoworld »</i></p>	
2:45pm - 4:00pm	Parallel Sessions (details page 22)
4:00pm - 4:30pm	Coffee Break
4:30pm - 5:15pm	Session 3.3: Risk management
<p>Speaker: Eric Drais, INRS, France</p> <p><i>PL3.3: The Risk management related to nanomaterials. Observation of an occupational Dynamics between science and law</i></p>	
5:15pm - 6:30pm	Parallel Sessions (details page 25)

Session 2: Exposure // Auditorium Platine

Chair: Christof ASBACH, IUTA, Germany

SUB-SESSION 1: EXPOSURE ASSESSMENT STRATEGIES

PS2-1 **Exposure assessment to NOAA at workplace – an opportunity towards a safer and more responsible development of nanocomposites: NanoLeap project**
8:45 - 9:00

Cécile Ducros, Sébastien Artous, Jose Luis Valverde Palomino, Irene Izarra, Juan Francisco Rodriguez, Isabel Rodriguez, Philippe Charlety, Simon Clavaguera, (NanoSafety Platform, CEA, Univ. Grenoble Alpes, France)

PS2-2 **ExproPNano: Towards a better assessment of occupational exposure to airborne NP by integrating work task analysis and exposure measurement**
9:00 - 9:15

Louis Galej, Sabyne Audignon-Durand, Patrick Brochard, Maximilien Debia, Stéphane Ducamp, Irina Guseva Canu, Pierre Lambert, Olivier Le Bihan, Laurent Martinon, Olivier Witschger, Alain Garrigou, (EPICENE, ESSAT, Centre INSERM U1219 - Bordeaux Population Health Research Center, France), (University of Bordeaux, ISPED, France)

PS2-3 **The Nanosafer V1.1 risk assessment and management tool – overall sensitivity analysis and assessment of the model performance**
9:15 - 9:30

Keld A. Jensen, Biase Liguori, Anne T. Saber, Ismo K. Koponen, Steffen F. Hansen, Anders Baun, Alexander C.Ø. Jensen, and Håkan Wallin, (National Research Centre for the Working Environment, Denmark)

PS2-4 **Towards an optimal adaptation of exposure to NOAA assessment methodology in multi-sources industrial scenarios (MSIS): The challenges and the choices**
9:30 - 9:45

Jesús López de Ipiña, Cristina Gutierrez-Cañas, Celina Vaquero, (TECNALIA – Parque Tecnológico de Alava, Spain)

PS2-5 **Biocides exposure assessment – Measurement strategy for nanomaterials under biocidal products regulation (BPR)**
9:45 - 10:00

Sébastien Artous, Patrick Arnould, Dominique Locatelli, Samir Derrough, (NanoSafety Platform, CEA, Univ. Grenoble Alpes, France)

Session 1: Measurements and Characterization of nano objects // Chrome 1

Chair: Da-ren CHEN, University of Virginia, USA

Co- Chair: Olivier WITSCHGER, INRS, France

SUB-SESSION 2: NANO-OBJECTS IN LIQUID

PS1-6 **Electrochemical characterization of suspensions of oxidic nanoparticles in biological media**
8:45 - 9:00

Carlo Baldisserrri, Magda Blosi, Simona Orтели, Luca Viale, Anna Luisa Costa, (CNR-ISTEC, Italy)

PS1-7 **Silver nanoparticle interactions with aquatic environmental relevant constituents determine their environmental fate**

9:00 - 9:15

Rute F. Domingos, Emel Topuz, Anahita Rahimi, (Institut de Physique du Globe de Paris, France)

PS1-8 **Comparison of size-determining techniques for nanoparticles in suspension**

9:15 - 9:30

Sylvie Motellier, Nathalie Pelissier, Olivier Sicardy, (Univ. Grenoble Alpes, CEA Tech Liten, PNS, DTNM, France)

Session 3.5: Nano Responsible Development // Chrome 5

Chair: Steffi FRIEDRICHS, OECD, France

PS3.5-1 **LICARA nanoscan - A tool for the self-assessment of benefits and risks of nanoproducts**

9:15 - 9:30

Wouter Fransman, Toon van Harmelen, Harrie Buist, Eelco Kuijpers, Tom Ligthart, Ester Zondervan, (TNO, Netherlands)

PS3.5-2 **Determinants of takoff and slowdown of innovation in a situation of uncertainty regarding environmental and health risks**

9:30 - 9:45

Mariia Ostapchuk, Claire Auplat, Pierre Boucard, Jean-Marc Brignon, (PSL, Université Paris-Dauphine, DRM UMR 7088, France), (Institut National de l'Environnement Industriel et des Risques - INERIS, France)

PS3.5-3 **Safer-by-design and Financing: An exploratory approach of private financing of nanotechnological start-ups**

9:45 - 10:00

Benjamin Le Pendeven, Emmanuel Frémiot, (CNAM, France)

PS3.5-4 **Supporting risk assessment of nanomaterials with quality-approved information - DaNa Literature Criteria Checklist**

10:00 - 10:15

Clarissa Marquardt, Nils Bohmer, Harald F. Krug, Dana Kuehnel, Florian Paul, Christoph Steinbach, Katja Nau, (Karlsruhe Institute of Technology, Institute for Applied Computer Science, Germany)

Session 3.1: Release from nano enabled products // Auditorium Platine

Co-Chair: Jean-François DAMLENCOURT, Univ. Grenoble Alpes, CEA, PNS France

SUB-SESSION 1: MANUFACTURING PHASE

PS3.1-1 **Quantification and cytotoxicity of released carbon nanotubes from an epoxy-based nanocomposite**

11:15 - 11:30

Jing Wang, Lukas Schlagenhaut, Tina Buerki-Thurnherr, Yu-Ying Kuo, Adrian Wichser, Frank Nüesch, Peter Wick, (Laboratory for Advanced Analytical Technologies, Empa, Switzerland), (Institute of Environmental Engineering, Switzerland)

PS3.1-2 **Developing measurement approaches for the analysis of release materials from nanocomposites**

11:30 - 11:45

Keana Scott, (National Institute of Standards and Technology, USA)

PS3.1-3 **Particle emissions from shredding, sanding, and cutting of polypropylene containing carbon nanotubes and organic pigment nanomaterials**

11:45 - 12:00

Antti J Koivisto, Ismo K Koponen, Kirsten I Kling, Alessio Boldrin, Tareq Hussein, Asger Nørgaard, Alexander C.Ø. Jensen, Keld A Jensen, (NRCWE, Denmark)

PS3.1-4 **Propagation modeling based on airborne particle release data from nanostructured materials for exposure estimation and prediction**

12:00 - 12:15

Daniel Göhler, Ralf Gritzki, Michael Stintz, Markus Rösler, (Research Group Mechanical Process Engineering, Institute of Process Engineering and Environmental Technology, Germany)

PS3.1-5 **European Collaboration between industrials and scientists for the NPs release study turned towards the safer by design approach**

12:15 - 12:30

Delphine Boutry, Arnaud Guiot, Anass Benayad, Romain Soulas, Carlos Conception Heydorn, Marta Santiago, Alexei A. Antipov, Jean-François Damlencourt, Socorro Vasquez, Alejandro Vilchez, (Univ. Grenoble Alpes, CEA Tech Liten, PNS, DTNM, France)

Session 1: Measurements and Characterization of nano objects // Chrome 1

Chair: Da-ren CHEN, University of Virginia, USA

Co-Chair: Samir DERROUGH, Univ. Grenoble Alpes, PNS, CEA, France

SUB-SESSION 3: NANO-OBJECTS IN ENVIRONMENTAL & BIOLOGICAL MEDIA

PS1-9 Physico-chemical separation process of nanoparticles and nanostructured materials of cosmetic formulations

11:15 - 11:30

R. R. Retamal Marín, F. Babick, M. Stintz, (TU Dresden – Research group Mechanical Engineering, Germany)

PS1-10 Synthesis and characterization of Methylene Blue - containing spions for photodynamic therapy

11:30 - 11:45

Paula S. Haddad, Karina A. Fudimura, Amedea B. Seabra, Marconi C. Santos, (Exact and Earth Sciences Department, Universidade Federal de São Paulo, Brazil)

PS1-11 Detection of metal-based nanoparticles in environmental and biological matrices using single particle ICP-MS

11:45 - 12:00

Chady Stephan, (PerkinElmer, Ontario, Canada)

PS1-12 Interactions of AgNPs with bioligands: direct quantification of dissolution and aggregation using AF4-UVD-MALLS-ICP-MS

12:00 - 12:15

I.A.M Worms, W. Liu, A.Arnoold, F. Rollin-Genetet, C. Vidaud, R. Soulas, J-F. Damlencourt, S. Motellier, E. Mintz, I. Michaud-Soret, D. Truffier-Boutry (CEA – Grenoble, LCBM / BioMet UMR5249 CEA/CNRS/UGA, France), (CEA – Grenoble, DRT/LITEN/SEN/LR2N, France)

PS1-13 In vitro human digestion test to monitor the dissolution of silver nanoparticles

12:15 - 12:30

Pasquale Bove, Maria Ada Malvindi, Stefania Sabella, (Central Research Laboratories, D3_Pharma Chemistry Department, Fondazione Istituto Italiano di Tecnologia, Italy)

Session 2: Exposure // Chrome 3

Co-Chair: **Simon CLAVAGUERA**, Univ. Grenoble Alpes, PNS, CEA, France

SUB-SESSION 2: EXPOSURE ASSESSMENT - NEW INSTRUMENTS & METHODS

PS2-6 **Prediction of emissions and exposure to micro- and nanoparticles in industrial environments**
11:15 - 11:30

C. Ribalta, A.S. Fonseca, Mar Viana, M.C. Minguillón, A. López-Lilao, E. Monfort, (DAEA-CSIC, Spain)

PS2-7 **Extending exposure assessment strategies for respirable fibrous materials to the nanoscale**
11:30 - 11:45

Asmus Meyer-Plath, Barbara Simonow, Markus Mattenklott, Patrick Steinle, Sabine Plitzko, (Federal Institute for Occupational Safety and Health - BAuA, Germany)

PS2-8 **New methodology to determine similarity, relevance and quality factors for read across of exposure data**
11:45 - 12:00

Eelco Kuijpers, Remy Franken, Esther Zondervan, Ioannis Basinas, Araceli Sanchez, Shahzad Rashid, Karen Galea, Maidá Domat, Carlos Fito, Wouter Fransman, (TNO, Netherlands)

PS2-9 **Design and evaluation of a diffusion charging differential mobility classifier to monitor personal exposure to airborne nanoparticles**
12:00 - 12:15

Quentin Renot, Michel Pourprix, Jean-Baptiste Sirven, Simon Clavaguera, (NanoSafety Platform, CEA Grenoble, France)

PS2-10 **Single Cell ICP-MS: exposure, dose and response of fresh water phytoplankton to gold and silver NPs**
12:15 - 12:30

Ruth Merrifield, Chady Stephan and Jamie Lead, (CERN, University of South Carolina, USA)

Session 3.2: Safer by design nanomaterial and process // Auditorium Platine

Chair: Benjamin GILBERT, University of Berkeley, USA

SUB-SESSION 1: EU PROJECTS DEFINING SAFER BY DESIGN

PS3.2-1 **Safe-by-design implementation approach in production systems: Case study, protective composite coatings based in Nano-particles**
2:45 - 3:00

Rita Alberto, Marina Peixoto, Maria Farinha, Ana Cabral, Ricardo Rato, Marco Estrela, Eduardo Silva, (ISQ - Instituto de Soldadura e Qualidade, Portugal)

PS3.2-2 **Banding approach for engineered nanomaterial risk assessment and control**
3:00 - 3:15

Alain Pardon, Nausikaa Van Hoornick, Dimiter Prodanov, (IMEC, Belgium)

PS3.2-3 **Implementation of the Nanoreg Safe-by-Design approach for different nanomaterial applications**
3:15 - 3:30

Christian Micheletti, Marco Roman, Erik Tedesco, Iolanda Olivato, Federico Benetti, (ECAMRICERT-ECSIN, Italy)

PS3.2-4 **NanoStreeM: Strategies for safety assessment in advanced integrated circuits manufacturing**
3:30 - 3:45

Dimiter Prodanov, (IMEC, Belgium)

PS3.2-5 **Save and Sustainable by Design: A potential Approach for nanoinnovations**
3:45 - 4:00

Christa Schimpel, Susanne Resch, Celina Vaquero, Andreas Falk, (BioNanoNet Forschungsgesellschaft mbH, Austria)

Session 3.1: Release from nano enabled products // Chrome 1

Chair: Wendel WOHLLEBEN, BASF, Germany

SUB-SESSION 2: OUTDOOR & CONSUMER USE

PS3.1-6 **Impact of temperature on the kinetics of photodegradation and nanoparticles release in nanocoatings**
2:45 - 3:00

Li-Piin Sung, Justin M. Gorham, Hsiang-Chun Hsueh, Deborah Stanley, Chun-Chieh Tien, Savelas Rabb, Lee L. Yu, and Tinh Nguyen, (National Institute of Standards and Technology, USA)

PS3.1-7 **Control of materials release during the outdoor use of polymeric nanocomposites containing TiO₂ nanoparticles**
3:00 - 3:15

Jose Luis Muñoz-Gómez, Alejandro Vílchez, Delphine Boutry, Cristiano Citterio, Socorro Vázquez-Campos, (LEITAT Technological Center, Spain)

PS3.1-8 **Influence of nanofillers intrinsic properties on the degradation of a polyethylene matrix and subsequent release**

3:15 - 3:30

Lorette Scifo, Nicole Neubauer, Vladimir Vidal, Daniel Borschneck, Perrine Chaurand, Wendel Wohlleben, Jérôme Rose, (CEREGE UR 34 Aix-marseille University - CNRS - IRD, France), (Labex SERENADE, France)

PS3.1-9 **Release from Copper-treater wood – a summary of results from the SunProject**

3:30 - 3:45

Nicole Neubauer, Jana Navratilova, Evgenia Oenem-Siakou, Joerg Habicht, Lorette Scifo, Chiara Civardi, Marcos Sanles, Bernard Angeletti, Jerome Rose, Frank von der Kammer, Wendel Wohlleben, (BASF SE, Material Physics, Germany)

PS3.1-10 **Unraveling the complexity in the aging of nanoenhanced textiles: a comprehensive sequential study on the effects of sunlight, washing and landfilling**

3:45 - 4:00

Denise M. Mitrano, Enzo Lombi, Yadira Arroyo Rojas Dasilva and Bernd Nowack, (Empa, Swiss Federal Laboratories for Materials Science and Technology, Technology and Society Laboratory, Switzerland)

Session 2: Exposure // Chrome 3

Chair: Christof ASBACH, IUTA, Germany

SUB-SESSION 3: EXPOSURE MEASUREMENTS

PS2-11 **Real-time exposure measurements of carbon nanotubes using an aethalometer**

2:45 - 3:00

Karin Lovén, Maria Hedmer, Joakim Pagles, Anders Gudmundsson, (Ergonomics and Aerosol Technology, Lund University, Sweden)

PS2-12 **Occupational exposure during the production, simulated use and end-of-life stages of nanoenabled products for energy harvesting and energy storage**

3:00 - 3:15

Simon Clavaguera, Sébastien Artous, Cécile Philippot, Dominique Locatelli, Sébastien Jacquinet, Veronika Hase, Lenka Schreiberova, Bryony Ross, Martie van Tongeren, (CEA - Grenoble, France)

PS2-13 **Exposure to ceramic and process-generated nanoparticles during plasma spraying**

3:15 - 3:30

A. Salmatoniadis, M. Viana, A. Sofia Fonseca, E. Monfort, A. López-Lilao, (IDAEA-CSIC, Spain)

PS2-14 **Assessment of exposure to nano-objects and their agglomerates and aggregates (NOAA) during nano-powders handling**

3:30 - 3:45

Elżbieta Jankowska, Katarzyna Suwała, Magdalena Wenda, (Central Institute for Labour Protection - National Research Institute, Poland)

PS2-15 **Desktop 3d printers: nanoparticle emissions**

3:45 - 4:00

A-K Viitanen, L Mendes, A Kangas, K Kukko, B Mølgaard, A Säämänen, T Kanerva, I F Ituarte, M Huhtiniemi, H Stockmann-Juvala, J Partanen, K Eleftheriadis, K Hämeri, (Finnish Institute of Occupational Health, Finland)

Session 6: Regulation / Standardization // Chrome 5

Chair: Daniel BERNARD, CEA/PNS, France

PS6-1 Challenges of nanomaterial regulation in Europe

3:15 - 3:30

Julia Donauer, Joerg Wagner, Dr. Knoell, (Consult GmbH, Germany)

PS6-2 How to address EHS risks with nanomaterials through the existing workers and consumers safety legal instruments?

3:30 - 3:45

Anthony Bochon, (Squire Patton Boggs UK LLP, Belgium), (Faculty of Law, Université libre de Bruxelles, Belgium)

PS6-3 A nanomaterial testing strategy for achieving REACH regulatory compliance

3:45 - 4:00

Paul K.B. & Carson D.S, (Blue Frog Scientific Limited, UK)

Session 3.3: Risk Management // Auditorium Platine

Chair: Eric DRAIS, INRS, France

SUB-SESSION 1: EXPOSURE MEASUREMENT

PS3.3-1 **Characterization and control of nanoparticle emissions from desktop 3d-printers**
5:15 - 5:30

Anna-Kaisa Viitanen, Tomi Kanerva, Erkka Saukko, Anneli Kangas, Kirsi Kukko, Arto Säämänen, (Finnish Institute of Occupational Health, Finland)

PS3.3-2 **Effect of carbon black nanoparticles on methane/Air explosions: influence at low initial turbulence**
5:30 - 5:45

David Torrado, Pierre-Alexandre Glaude, Olivier Dufaud, (Université de Lorraine, CNRS, Reaction and Chemical Engineering Laboratory, France)

PS3.3-3 **Effectiveness of local exhaust ventilation in removing nanoparticles in workplaces**
5:45 - 6:00

Evelien Frijns, Maida Domat, Carlos Fito, Lieve Geerts, Patrick Berghmans, (VITO NV, Belgium)

PS3.3-4 **Carbon-based nanomaterials in electronic goods: building a risk profile for nano-enabled batteries at end-of-life**
6:00 - 6:15

Bryony Ross, Araceli Sanchez, Sheona Read, Simon Clavaguera, Cécile Philippot, Veronika Hase, Lenka Schreiberova, Martie van Tongeren, (Institute of Occupational Medicine - IOM, UK)

SUB-SESSION 2: RISK ASSESSMENT

PS3.3-5 **Nanoreg: New standard operating procedures to evaluate the effectiveness of risk management measures against nanomaterials**
6:15 - 6:30

C.Fito, M. Domat, J.Pla, (ITENE Research center, Spain)

Session 3.1: Release from nano enabled products // Chrome 1

Chair: Wendel WOHLLEBEN, BASF, Germany

SUB-SESSION 3: DISPOSAL & CONCEPTS

PS3.1-11 **Measuring nanomaterial release during weathering of polymer nanocomposites & commercial products**
5:15 - 5:30

Howard Fairbrother, Ronald S. Lankone, Katie Challis, Rob Reed, David Hanigan, Yuqiang Bi, Leanne Gilbertson, Paul Westerhoff, James Ranville, (Johns Hopkins University, USA)

PS3.1-12 **End-of-life of nano-enabled products by thermal decomposition: Possible environmental health and safety implications**
5:30 - 5:45

Georgios A. Sotiriou, Dilpreet Singh, Fang Zhang, Lutz Hoering, Wendel Wohlleben, Philip Demokritou, (Center for Nanotechnology & Nanotoxicology, Department of Environmental Health, USA), (Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Sweden)

PS3.1-13

5:45 - 6:00

Thermal stability and material balance of nanomaterials in waste incineration

Hanns-R. Paur, W. Baumann, M. Hauser, I. Lang, N. Teuscher, H. Seifert, W. Stapf, (Karlsruhe Institute of Technology, Institute for Technical Chemistry, Germany)

PS3.1-14

6:00 - 6:15

Concepts on how to establish a framework on release of nanomaterials

Thomas A.J. Kuhlbusch, Christof Asbach, Heinz Kaminski, Araceli Sánchez Jiménez, Yaobo Ding, Martie van Tongeren, Michael Riediker, Simon Clavaguera, Henk Goede, Burkhard Stahlmecke, (Institut für Energie, Germany), (BAuA, Germany)

PS3.1-15

6:15 - 6:30

Nanomaterial release data: are current data useful for material flow modeling?

Alejandro Caballero-Guzman, Bernd Nowack, (EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland)

Session 3.2: Safer by design nanomaterial and process // Chrome 3

Chair: Benjamin GILBERT, University of Berkeley, USA

SUB-SESSION 2: NANOMATERIALS SYNTHESIS STRATEGIES FOR SAFER BY DESIGN

PS3.2-6

5:15 - 5:30

Toxicological effects of CuO on the developmental effects of sea urchin embryos

Suman Pokhrel, (Foundation Institute of Materials Science (IWT), Department of Production Engineering, University of Bremen, Germany)

PS3.2-7

5:30 - 5:45

Towards safer-by-design quantum dots

Adeline Tarantini, Lucia Mattera, Christophe Lincheneau, Karl-David Wegner, Olivier Proux, Delphine Boutry, Caroline Marie-Desvergne, Sylvie Motellier, Géraldine Sarret, Peter Reiss, Marie Carrière, (Univ. Grenoble Alpes, INAC-LCIB, France), (CEA, INAC-SyMMES, France), (Aix-Marseille Université, CNRS, IRD, CEREGE UM34, France)

PS3.2-8

5:45 - 6:00

Morphology of silver nanowires: between performances and toxicity

Djadidi Toybou, Caroline Celle, Muriel Viau, Sylvia Lehmann, Laurent Charlet, Jean Pierre Simonato, Benjamin Gilbert, (Univ. Grenoble Alpes, CEA, LITEN/DTNM, France), (ISTerre, France), (Lawrence Berkeley National Laboratory, USA)

PS3.2-9

6:00 - 6:15

Bio-sourced hybrid Titanium dioxide nanostructures for wall paints and sunscreen formulations

Neeraj Shandilya, Isabelle Capron, (Unité Biopolymères, Interactions, Assemblages - BIA / NANO INRA, France)

PS3.2-10

6:15 - 6:30

Safer-by-design strategies

Beatriz macarena Cobaleta-Siles, A.P. Guillamon, V.F. Puentes, (Institut de Recerca Vall d'Hebron - VHIR, Spain)



The educational Nanosmile website aims to contribute to the understanding of risks related to nanomaterials. This website proposes a learning platform including a lot of publications, videos, cartoons, animations, etc. to destination of the public at large, engineers, researchers and even kids.

RISK ASSESSMENT
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 PHYSICS OF NANOPARTICLES **ENVIRONMENT**
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www.nanosmile.org

Wednesday 9 November, 2016

Chairmen

Monday 7 November, 2016



Bernd NOWACK

EMPA, Switzerland

Prof. Dr. Bernd Nowack holds a PhD (1995) in environmental sciences from ETH Zürich. His current research at Empa deals with the chances and risks of engineered nanomaterials and microplastics. He is founding co-Editor-in-Chief of the journal *NanoImpact* and is Associate Editor of *Environmental Pollution*. He is listed in "The World's most influential scientific minds 2015" from Thomson Reuters in the category "Environmental Sciences/Ecology".

Plenary Session: Session 3.4 - From nanoproducts to waste

Room: Auditorium Platine / 8:00am - 8:30am

Tuesday 8 November, 2016



David PUI

University of Minnesota, USA

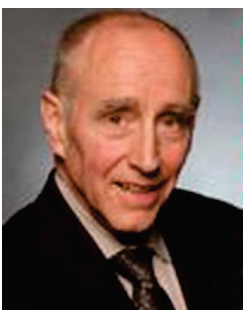
Professor David Y. H. Pui is a Distinguished University Professor and LM Fingerson/TSI Inc. Chair in Mechanical Engineering at the University of Minnesota. He is a Member of the U.S. National Academy of Engineering (NAE) and Director of the world-renowned Particle Technology Laboratory at the University of Minnesota. He is also the Director of the Center for Filtration Research (CFR) with 19 leading international filtration companies as members.

He has a broad range of research experience in aerosol and nanoparticle science and filtration technology and has over 260 journal papers and 26 patents. He has developed several widely used commercial aerosol instruments. Dr. Pui has received many awards, including the Max Planck Research Award (1993), the Humboldt Research Award for Senior U.S. Scientists (2000), the Fuchs Memorial Award (2010) -- the highest disciplinary award conferred jointly by the American, German and Japanese Aerosol Associations, and the Einstein Professorship Award (2013) by the Chinese Academy of Sciences (CAS).

Plenary Session: Session 4 - Urban Particles

Room: Auditorium Platine / 10:30am - 11:00am

Wednesday 9 November, 2016



Günter OBERDORSTER

University of Rochester, USA

Günter Oberdörster, DVM, Ph.D., is Professor Emeritus, Department of Environmental Medicine, University of Rochester. Previously, he was Director, University of Rochester Ultrafine Particle Center, PI of a Multidisciplinary Research Initiative in Nanotoxicology, Head of the Pulmonary Core of the NIEHS Center Grant and CO-PI on an NIH Challenge Grant.

His research includes effects and underlying mechanisms of lung injury induced by inhaled nonfibrous and fibrous particles, including extrapolation modeling and risk assessment. His studies with ultrafine particles influenced the field of inhalation toxicology, raising awareness of the unique biokinetics and toxicological potential of nano-sized particles. He earned his D.V.M. and Ph.D.(Pharmacology) from the University of Giessen, Germany. He has served on many national and international committees and is recipient of several scientific awards. He is on the editorial boards of the *Journal of Aerosol Medicine; Particle & Fibre Toxicology; Nanotoxicology; International J. Hygiene & Environmental Health*; and Associate Editor of *Environmental Health Perspectives*.

Plenary Session: Session 5.1 - Toxicology

Room: Auditorium Platine / 2:00pm - 2:30pm

Thursday 10 November, 2016



Alexandre CECCALDI

ETPN, France

Created in 2005, the European Technology Platform on Nanomedicine (ETPN), an initiative led by industry and set up together with the European Commission, is addressing the application of nanotechnology to achieve breakthroughs in healthcare. Nanomedicine exploits the improved and often novel physical, chemical and biological properties of materials at the nanometer scale. Nanomedicine has the potential to enable early detection and prevention, and to essentially improve diagnosis, treatment and follow-up of diseases. The ETPN Association supports its members, comprising academia, SMEs, industry, clinicians, healthcare providers, national & regional funding agencies, in coordinating their joint research efforts and improving communication towards the European Commission and the European Member States. The strategic research priorities defined by the ETPN represent the core fields of interest and activities of the members of the technology platform: Regenerative Medicine and Biomaterials, Nanotherapeutics (including drug delivery), Nano- diagnostics and Imaging. Finally, the ETPN disseminates knowledge and develops tools under the umbrella of the Translation Hub, in order to support SMEs and academia in fostering the translation of the best Nanomedicine innovations to the market.

Dr. Alexandre Ceccaldi is the General Secretary of ETPN since 2015. He has a PhD in biology (University Pierre et Marie Curie, Paris) and an engineering degree in industrial management (Agro ParisTech), with background in cancer care, epigenetics and innovative design. Previously, during three years, he has strengthened the governance, developed strategic communication and coordinated INGESTEM, the first national public consortium in France fully dedicated to R&D on induced pluripotent stem cells and their medical applications (14 M€ budget for 9 years)

Plenary Session: Session 5.3 - Safe use of nano-objects for medicine applications

Room: Chrome 5 / 2:45pm - 3:15pm



Jérôme ROSE

CNRS-CEREGE, France

Dr. J Rose, CNRS Senior Scientist, adjunct faculty at Rice University and at Duke University (USA). His research focuses on the behavior and toxicity of colloids and inorganic contaminants from laboratory to field scale. He has been involved in research on the environmental impact of nanotechnology since 2001. He coordinates the Serenade French project (8 years funding, 15 partners, Safer nanotechnologies).

Plenary Session: Session 5.2 - Environmental interactions of nanomaterials

Room: Auditorium Platine / 4:30pm - 5:00pm

Wednesday 9 November, 2016 - Auditorium Platine*

Daily Program & Plenary Sessions

*Except Session 5.3 - Chrome 5

Monday 7 November, 2016

Tuesday 8 November, 2016

Wednesday 9 November, 2016

Thursday 10 November, 2016

8:00am-8:45am	Session 3.4: From Nanoproducts to Waste
Speaker: Bernd Nowack, EMPA, Switzerland <i>PL3.4: Newest Developments in Modeling Nanomaterials Flows</i>	
8:45am - 10:00am	Parallel Sessions (details page 31)
10:00am - 10:30am	Coffee Break
10:30am - 11:15am	Session 4: Urban Particles
Speaker: David H. Pui, University of Minnesota, USA <i>PL4: Filtration Solutions to Mitigate Pm2.5 Pollutants in Urban Air</i>	
11:15am - 12:30pm	Parallel Sessions (details page 33)
12:30pm - 2:00pm	Lunch break + Poster Session
2:00pm - 2:45pm	Session 5.1: Toxicology
Speaker: Günter Oberdorster, University of Rochester, USA <i>PL5.1: Refining Dosimetric Extrapolation Modeling of inhaled Nanoparticles for Deriving a human equivalent concentration</i>	
2:45pm - 3:15pm	Session 5.3: Safe use of nano objects for medicine applications
Speaker: Alexandre Ceccaldi, ETPN, France <i>PL5.3: Nanomed, so small, so useful</i>	
2:45pm - 4:00pm	Parallel Sessions (details page 36)
4:00pm - 4:30pm	Coffee Break
4:30pm - 5:15pm	Session 5.2: Environmental interactions of nanomaterials
Speaker: Jérôme Rose, CNRS-CEREGE, France <i>PL5.2: Environmental interactions of nanomaterials</i>	
4:30pm - 6:30pm	Parallel Sessions (details page 40)
5:15pm - 6:30pm	Parallel Sessions (details page 38)
7:00pm	GALA DINNER

Session 3.4: From Nano products to waste // Auditorium Platine

Chair: Bernd NOWACK, EMPA, Switzerland

PS3.4-1 **Engineered nanomaterials-containing waste streams classification: a country with economy in transition perspective**
8:45 - 9:00

Ndeke Musee, (Department of Chemical Engineering, University of Pretoria, South Africa)

PS3.4-2 **Flows of engineered nanomaterials from consumer products to waste treatment and recycling**
9:00 - 9:15

Véronique Adam, Fadi Sultan, Bernd Nowack, (Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland)

PS3.4-3 **Development of a release model for waste shredding using a Bayesian belief network**
9:15 - 9:30

Tom Ligthart, Imelda van Voorde, Burkhard Stahlmecke, Simon Clavaguera, Neeraj Shandilya, Thomas Kuhlbusch, Richard Laucournet, Bas Henzing, Yaobo Ding, Henk Goede, (TNO, The Netherlands)

PS3.4-4 **Nanocomposites end-of-life studies – A key step for tomorrow's nanocomposites safe design**
9:30 - 9:45

Cécile Philippot, S. Jacquinot, A. Guiot, D. Boutry, E. Zimmermann, N. Pelissier, J.F. Damlencourt, S. Vázquez, A. Vilchez, C. Citterio & J.L. Muñoz, (1) Univ. Grenoble Alpes, CEA Tech, PNS, France)

PS3.4-5 **Environmental assessment of the photocatalytic degradation of contaminated water**
9:45 - 10:00

Martina Pini, Paolo Neri, Federica Bondioli, Elisabetta Zerazon, Anna Maria Ferrari, (Department of Science and Engineering Methods, University of Modena and Reggio Emilia, Italy)

Session 3.2: Safer by design nanomaterials and process // Chrome 1

Co-Chair: Suman POKHREL, University of Bremen, Germany

SUB-SESSION 3: INDUSTRIAL PRACTICES FOR OCCUPATIONAL & CONSUMER SAFETY

PS3.2-11 **Nanosafe design for mass manufacturing**
8:45 - 9:00

Jérôme Segard, Jean-Luc Boyer, Jérémie Descarpentier, Thomas Goislard, Harald Hauf, Paul O'Brien, (Nawa Technologies S.A., France)

PS3.2-12 **Implementation of a Safe-by-design approach in the construction of three open pilot plants for manufacturing nano-enabled products targeted to the European Aeronautics and automotive industries**
9:00 - 9:15

Jesús M. López de Ipiña, Sonia Florez, Richard Seddon, Angel Hernan, Xabier Cenigaonandia, Mario Insunza, Antonios Vavouliotis, Vasilios Kostopoulos, Paulina Latko, Paweł Duratek, (TECNALIA, Spain)

PS3.2-13
9:15 - 9:30

Two case studies on the «Safer by design» adoption of nanomaterials

Marie-Cécile Drain, Sonia Ben Slimane, (NOVANCIA, France)

PS3.2-14
9:30 - 9:45

Safety-By-Design in practice: Metallic nano inks for printed electronics and nano-modified alloys for additive manufacturing

Lieve Geerts, Evelien Frijns, Jo Van Laer, Reinhilde Weltens, Inge Nelissen, Sandra Verstraelen, (VITO nv, Unit Environmental Risk and Health, Belgium)

Session 3.3: Risk Management // Chrome 3

Co-Chair: Cécile DUCROS, Univ. Grenoble Alpes, PNS, CEA, France

SUB-SESSION 2: RISK ASSESSMENT

PS3.3-6
8:45 - 9:00

A novel approach towards effectively assessing the risk of nanomaterials in biomedical research

Martine Orosco, Jacques Simons, Corinne Schiltz, (Bureau de Coordination de la Prévention des Risques, Inserm, France)

PS3.3-7
9:00 - 9:15

Pragmatic approach for risk assessment screening of products containing manufactured nanomaterials

Anthony Cadène, Jean-Philippe Jaeg, Jean-Claude Amiard, Sylvain Billet, Emmanuel Flahaut, Laurent Madec, Philippe Pirard, Gaetana Quaranta, Yves Sicard, Paul Troisfontaines, Jacques Vendel, (Anses – DER, France)

PS3.3-8
9:15 - 9:30

Control banding, nanomaterials manufactured and occupational health and safety, a review

Kaotar Dimou, Claude Emond, (Department of Environmental and Occupational Health, ESPUM, University of Montreal, Canada)

PS3.3-9
9:30 - 9:45

Work debate spaces for transforming representations and building work rules: a collective tool for preventing risks related to nanomaterials

Catherine L'Allain, Sandrine Caroly, Eric Drais, (Laboratoire LIP/PC2S, Université Grenoble Alpes, France)

PS3.3-10
9:45 - 10:00

From Life cycle assessment (LCA) to risk assessment (ra) of engineered nano materials (ENMs)

Gaetana Quaranta, Stéphanie Loyaux-Lawniczak, Véronique Adam, (LHYGES/EOST, France)

Session 4: Urban Particles // Auditorium Platine

Chair: David PUI, University of Minnesota, USA

- PS4-1** **PM2.5 removal by a solar-assisted cleaning system**
11:15 - 11:30 Sheng-Chieh Chen, Junji Cao, Qingfeng Cao, Yu Huang, David Y.H. Pui, (Mechanical Engineering, University of Minnesota, USA)
- PS4-2** **Chemical nature and source of particulate air pollution in China**
11:30 - 11:45 Ru-Jin Huang, Junji Cao, Steven S. H. Ho, Kin-Fai Ho, Miriam Elser, Carlo Bozzetti, Francesco Canonaco, Jay Slowik, Imad El Haddad, André S.H. Prévôt, Urs Baltensperger, David Y. H. Pui, (Key Laboratory of Aerosol Chemistry and Physics, Institute of Earth Environment, Chinese Academy of Sciences, China), (Laboratory of Atmospheric Chemistry, Paul Scherrer Institute, Switzerland)
- PS4-3** **Health impact assessment of urban ultrafine and nano particles**
11:45 - 12:00 Marianthi V. Kermenidou, Dimosthenis A. Sarigiannis, Spyros P. Karakitsios, (Aristotle University of Thessaloniki, Department of Chemical Engineering, Environmental Engineering Laboratory, Greece), (Environmental Health Engineering, Institute of Advanced Study, Italy)
- PS4-4** **PM pollution: oxidative potential of PM₁₀ in the Arve Valley (France) – comparison of two different assays measurement**
12:00 - 12:15 Aude Calas, Gaëlle Uzu, Ana Oliete, Christina Dunster, Frank J. Kelly, Jean Martins and Jean-Luc Jaffrezo, (LTHE, UMR 5564, Laboratoire de Transferts en Hydrologie et de l'Environnement, France)
- PS4-5** **Harmonizing the measurement of ultrafine particles in atmospheric aerosol**
12:15 - 12:30 Juergen Spielvogel, Oliver Bischof, Jacob Scheckman, Brian Osmondson, (TSI GmbH, Germany)

Session 3.3: Risk Management // Chrome 1

Chair: Eric DRAIS, INRS, France

SUB-SESSION 2: RISK ASSESSMENT

- PS3.3-11** **Development of risk assessment strategy for the GUIDEnano tool**
11:15 - 11:30 Susan W.P. Wijnhoven, Petra van Kesteren, Thies Oosterwijk, Joost Westerhout, Maria Luisa Fernandez-Cruz, (National Institute for Health and the Environment, RIVM, The Netherlands)
- PS3.3-12** **Designing a sustainable European Centre for Risk Management and Safe Innovation in Nanomaterials & Nanotechnologies (EC4SafeNano)**
11:30 - 11:45 Emeric Fréjafon, Olivier Salvi, Benoît Hazebrouck, Maaike Le Feber, Jesus López de Ipiña Peña, Wolfgang Unger, and the EC4SafeNanoTeam, (INERIS, France)

SUB-SESSION 3: PROTECTION EFFICIENCY

PS3.3-13 **A rigorous protocol for evaluating the effectiveness of gloves against nanoparticles in solution**
11:45 - 12:00

Ludwig Vinches, Mohamed Zemzem, Stéphane Hallé, Caroline Peyrot, Kevin J. Wilkinson, Nathalie Tufenkji, (École de technologie supérieurs, Canada)

PS3.3-14 **Methodology for testing personal protective clothing against airborne nanoparticles**
12:00 - 12:15

Maida Domač, Maria-Cecilia Cadavid, Carlos Fito, (ITENE, Spain)

PS3.3-15 **Respiratory protection against nanoparticles: elements for a better respirators selection guidance**
12:15 - 12:30

Sandrine Chazelet, Alain Masson, Matthieu Marchal, Jean-Christophe Appert-Collin, (Institut National de Recherche et de Sécurité, France)

Session 3.4: From nanoproducts to waste // Chrome 3

Chair: Bernd NOWACK, EMPA, Switzerland

PS3.4-6 **Identifying environmental benefits of coatings based on sintered nano-tungsten-carbide cobalt ceramics**
11:15 - 11:30

Henning Wigger, Michael Steinfeldt, Alvis Bianchin, (Empa, Switzerland), (University of Bremen, Department of Technological Design and Development, Germany)

PS3.4-7 **Standard waste characterization tests for assessment of nano-enabled ceramic Tiles**
11:30 - 11:45

Laura Heggelund, Kerstin Jurkschat, Mikael Olsson, Steffen F Hansen, Thomas F Astrup, Alessio Boldrin, (DTU Environment, Technical University of Denmark, Denmark)

PS3.4-8 **Incineration of a commercial coating with nano CeO₂**
11:45 - 12:00

Olivier Le Bihan, Laurent Meunier, Ghania Ounoughene, Olivier Aguerre-Chariol, (INERIS, France)

PS3.4-9 **Potential transformation processes of steric stabilized quantum dots and their colloidal stability in complex aqueous waste matrices**
12:00 - 12:15

Florian Part, Christoph Zaba, Oliver Bixner, Christian Zafiu, Stephan Hann, Marion Huber-Humer, Eva-Kathrin Sinner, (University of Natural Resources and Life Sciences, Department of Nanobiotechnology, Institute for Synthetic Bioarchitectures, Austria)

PS3.4-10 **Impact of CeO₂ nanoparticles from diesel additives on wastewater treatment and biosolid valorization**
12:15 - 12:30

Abdoul Karim Kaboré, Anais Cuny, Nicolas Roche, Mélanie Auffan, Catherine Santaella, (Aix-Marseille Univ, CNRS, Centrale Marseille, M2P2, UMR 7340, France), (Aix-Marseille Univ, CNRS, IRD, CEREGE UM34, UMR 7330, France), (GDRI iCEINT, International Consortium for the Environmental Implication of Nanotechnology, CNRS-Duke University, France)

Session 6: Regulation / Standardization // Chrome 5

Chair: Daniel BERNARD, CEA/PNS, France

PS6-4 **Anticipation of regulatory needs for nanomedicines - The 1st EU-NCL survey with regulators**

11:15 - 11:30

Susanne Bremer-Hoffmann, Sven-Even Borgos, (European Commission Directorate General Joint Research Centre, Directorate F – Health, Consumers and Reference Materials, Consumer Products Safety, Italy)

PS6-5 **Multiple approaches for a complete mapping of nanomaterial uses: the case of Nanosilver**

11:30 - 11:45

Carmen Cantuarias-Villesuzanne, Pierre Boucard, Myriam Merad, Dominique Guionnet, Guillaume Fayet, Alexis Vignes, Jean-Marc Brignon, Emeric Frejafon, (INERIS, France)

PS6-6 **Developing parameters for local multimode ambient aerosol models including nanometer mode**

11:45 - 12:00

Paolo Tronville, Richard Rivers, (Politecnico di Torino DENERG, Italy)

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Session 5.1: Toxicology // Auditorium Platine

Chair: Günter OBERDORSTER, University of Rochester, USA

S5.1-1 **Graphistrength® C100 multiwalled carbon nanotubes (MWCNT): Thirteen-week inhalation toxicity study in rats with 13- and 52-week recovery periods combined with Comet and Micronucleus Assays**

2:45 - 3:00

Jean-François Régnier, Daniela Pothmann, Sophie Simar, Eva Dony, Jean-Loïc Le Net and Julien Beausoleil, (Arkema France, Département Toxicologie et Environnement, France)

S5.1-2 **Pulmonary toxicity and genotoxicity of carbon nanotubes in rats, a subacute inhalation study**

3:00 - 3:15

Laurent Gaté, Sylvie Sébillaud, Mylène Lorcin, Laetitia Chézeau, Christian Darne, Sébastien Bau, Stéphane Grossmann, Stéphane Viton, Hervé Nunge, Stéphane Binet, Sylvie Michaux, Laurine Douteau, Frédéric CosnierInstitut , (National de Recherche et de Sécurité, Département de Toxicologie and Biometrologie, France)

S5.1-3 **In vivo evaluation of potential neurotoxicity of incorporated nanomaterials in mice exposed chronically through aerosol route**

3:15 - 3:30

Stéphane Manixay, Stéphane Delaby, Emilie Antier, François Gaie-Levrel, Latifa Lakhdar, Dominique Le Guellec, Naïma El Kholi, Marlène Wiart, Anna Bencsik, (ANSES Lyon Unité MND et PFEA, France)

S5.1-4 **Predicting toxic effects observed *in vivo* after acute exposure to poorly soluble and inhalable nanomaterials by using more complex *in vitro* models**

3:30 - 3:45

Thomas Loret, Emmanuel Peyret, Marielle Dubreuil, Olivier Aguerre-Chariol, Christophe Bressot, Olivier le Bihan, Françoise Rogerieux, Bénédicte Trouiller, Anne Braun, Christophe Egles and Ghislaine Lacroix, (INERIS, France), (UTC, UMR 7338 - BMBI, France)

S5.1-5 **Grouping for read-across manufactured nanomaterials: TiO₂ as a case study**

3:45 - 4:00

Lara Lamou, David Asturiol, Elisabeth Joossens, Karin Aschberger, Andrea-N Richarz, Rabea Graepel, Andrew Worth (Joint Research Centre, Directorate F – Health, Consumer and Reference Materials, Italy)

Session 4: Urban Particles // Chrome 1

Chair: David PUI, University of Minnesota, USA

PS4-6 **Estimating the emissions of engineered Cerium Oxide nanoparticles from fuel additives to urban environments**

2:45 - 3:00

Prado Domercq, Man-wai Liang, Antonia Praetorius and Alistair Boxall, (CAPACITIE Project, University of York, UK), (Environmental Department, University of York, UK)

PS4-7 **Aerosol release from abrasion of Nano-tiO₂ pavements and tires containing nano-SiO₂**

3:00 - 3:15

C. Bressot, P. Hornych, M.-T., Do, O., Aguerre-Chariol, L., Meunier, M., Morgeneyer, (INERIS, France)

PS4-8

3:15 - 3:30

Dynamic properties of exhaled e-cigarette aerosol vs. conventional cigarette smoke

Ari Setyan, Tadas Prasauskas, Dainius Martuzevicius, Grant O'Connell, Xavier Cahours, Stéphane Colard, Jing Wang, (Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland), (ETH Zürich, Institute of Environmental Engineering, Switzerland)

Session 5.3: Safe use of nano objects for medicine applications // Chrome 5

Chair: Alexandre CECCALDI, ETPN, France

PS5.3-1

3:15 - 3:30

How can stakeholders access EUNCL?

Simon Baconnier (CEA Grenoble, France)

PS5.3-2

3:30 - 3:45

Comparison of sample preparations for TEM observations of lipid nanoparticles (Lipidots®)

Amandine Arnould, M. Bacia, F. Caputo, A.C. Couffin, B. Gallet, C. Matei, R. Soulas, J.F. Damlencourt, (Univ. Grenoble Alpes, France), (CEA-LITEN, MINATEC Campus, France)

PS5.3-3

3:45 - 4:00

Corona interactome: a key for deciphering protein adsorption kinetics on silica nanocarriers

Cédric Pisani, Jean Charles Gaillard, Michaël Odorico, Jeff L. Nyalosaso, Clarence Charnay, Yannick Guari, Joël Chopineau, Jean Marie Devoisselle, Jean Armengaud, Odette Prat, (Institut Charles Gerhardt de Montpellier, UMR 5253 CNRS-ENSCM-UM, France), (CEA, Direction de la Recherche Fondamentale, Site de Marcoule, France)

Session 5.2: Environmental interactions of nano materials // Auditorium Platine

Chair: Jérôme ROSE, CNRS-CEREGE, France

PS5.2-1 **Surface affinity and trophic transfer of nanoparticles: implication in wastewater treatment**
5:15 - 5:30

Mark R. Wiesner, Nike Geitner, Niall O'brian, (Duke University, Center for the Environmental Implications of NanoTechnology - CEINT, USA)

PS5.2-2 **Heteroaggregation of titanium dioxide nanoparticles with suspended particulate and natural organic matter analogues**
5:30 - 5:45

D. Slomberg, J. Labille, A. Pariat, A. Praetorius, P. Ollivier, O. Radakovitch, N. Sani-Kast, M. Scheringer, (iCEINT International Consortium for the Environmental Implication of Nanotechnology, Aix-Marseille Université, CNRS, CEREGE UMR 7330, France)

PS5.2-3 **Nanomaterials and converging technologies: Scenario in risk assessment, safety and security by design**
5:45 - 6:00

Ashok Vaseashta, Antonietta Gatti, (International Clean Water Institute, USA)

PS5.2-4 **Environmental transformation of CeO₂ nanoparticles – Elucidating the role of dissolution by smart radiolabeling**
6:00 - 6:15

Stefan Schymura, Thomas Fricke, Heike Hildebrand, Karsten Franke, (HZDR, Research Site Leipzig, Institute of resource Ecology, Germany)

Session 6: Regulation / Standardization // Chrome 1

Chair: Daniel BERNARD, CEA/PNS, France

PS6-7 **European standardization in nanotechnologies and relation with international work. How standardization can help industry and regulators in developing safe products?**
5:15 - 5:30

Patrice Conner, (AFNOR Standardization - Management and Consumer Services Department, France)

PS6-8 **Nanodefine: emerging guidance on methods and decision tree for the identification of nanomaterials**
5:30 - 5:45

Wendel Wohlleben, Frank Babick, Johannes Mielke, Stefan Weigel and Vasile-Dan Hodoroaba, (BASF SE, Dept. Material Physics, Germany)

PS6-9
5:45 - 6:00

A Step-by-Step guidance for an effective integration of standardization in nanosafety R&D projects – From the proposal to the deliverables and beyond

Benoît Hazebrouck, Olivier Salvi, with the NanoSafety Cluster Subgroup Standardization, (EU-VRi European Virtual Institute for Integrated Risk Management, Germany)

PS6-10
6:00 - 6:15

Inter-laboratory tests of the methodology for filtration efficiency tests in different filter media against nanoparticles

Jing Wang, Panagiota Sachinidou, Shawn S.C. Chen, David Y.H. Pui, Paolo Tronville, Thomas Mosimann, Mikael Eriksson, (Institute of Environmental Engineering, Switzerland), (Laboratory for Advanced Analytical Technologies, Empa, Switzerland)

Session 5.3: Safe use of nano objects for medicine applications // Chrome 5

Chair: Alexandre CECCALDI, ETPN, France

PS5.3-4
5:15 - 5:30

Persistent luminescence nanoparticles for bioimaging applications

Cyrille Richard, Gonzalo Ramírez-García, Fanny d'Orlyé, Anne Varenne, Nathalie Mignet, Silvia Gutiérrez-Granados, Minerva Martínez-Alfaro, (Unité de Technologies Chimiques et Biologiques pour la Santé - UTCBS, CNRS UMR 8258, Inserm U1022, Université Paris Descartes, France)

PS5.3-5
5:30 - 5:45

The behavior of our immune system can be altered upon an exposure to gold nanoparticles

Alexis Gonon, Christian Villiers, Valérie Forest, Michèle Cottier, Patrice N. Marche, (Institute for Advanced Biosciences - IAB, Université Grenoble Alpes / INSERM U1209, France)

PS5.3-6
5:45 - 6:00

Surface functionalized silica nanoparticles for in vitro cancer photodynamic therapy: Colloidal stability, dissolution and photodynamic efficiency studies

Wei Liu, Arnaud Chaix, Magali Gary-Bobo, Jean-Olivier Durand, Frédérique Cunin and Mélanie Auffan, (Aix-Marseille University, CNRS, IRD, CEREGE UM34, France)

Session 5.1: Toxicology // Chrome 3

Co-Chair: Claude EMOND, University of Montreal, Canada

PS5.1-6 **Bio-nano interface models applied to the investigation of nanoparticles cell uptake: proof of concept using real membrane models**
4:30 - 4:45

J.Cancino-Bernardi, P.M.P.Lins, V.S. Marangoni, V. Zucolotto, (Nanomedicine and Nanotoxicology Group, Physics Institute of São Carlos, University of São Paulo, Brazil)

PS5.1-7 **Dissolution of silver nanoparticles and fate of the released silver ions in hepatocytes revealed by a synchrotron nanoprobe**
4:45 - 5:00

Giulia Veronesi, Aurélien Deniaud, Thomas Gallon, Pierre-Henri Jouneau, Julie Villanova, Pascale Delangle, Marie Carrière, Isabelle Kieffer, Peggy Charbonnier, Elisabeth Mintz, Isabelle Michaud-Soret), (CNRS, LCBM UMR 5249 CNRS-CEA-UGA, France), (CEA, LCBM, France), (Université Grenoble Alpes, LCBM, France), (ESRF, The European Synchrotron, France)

PS5.1-8 **Effects of brake wear nanoparticles on respiratory cells**
5:00 - 5:15

Chloé Puisney, Evdokia Oikonomou, Sophie Nowak, Alexandre Chevillot, Jean-François Berret, Armelle baeza-Squiban, (Unité BFA, Laboratoire RMCX, CNRS UMR 8251, Paris Diderot University, France), (MSC, CNRS UMR 7057, Paris Diderot University, France)

PS5.1-9 **Development of an *In Vitro* system to assess the inhalation toxicity of nanomaterials**
5:15 - 5:30

Hana Barosova, Jodie Melbourne, Monita Sharma, Barbara Rothen-Rutishauser, Savvina Chortarea, Fikad Zerimariam, Martin Clift, Vicki Stone, Patrick Hayden, Anna Maione, Amy J. Clippinger, (PETA International Science Consortium Ltd., UK)

PS5.1-10 **Exposure to manufactured nanoparticles during gestation: Impact on the respiratory tract of the offspring in a mouse model**
5:30 - 5:45

Emmanuel Paul, Marie-Laure Franco-Montoya, Jérôme Rose, Jorge Boczkowski, Sophie Lanone, Christophe Delacourt, Jean-Claude Pairon, (Inserm U955 équipe 4, France)

PS5.1-11 **The oxidative potential of nanomaterials as a predictive indicator of their toxicity**
5:45 - 6:00

Armelle Baeza-Squiban, Leticia Aragao-Santiago, Linh Chi Bui, Alessandro Evola, Sonja Boland, (University Paris Diderot, Sorbonne Paris Cité, Laboratory of Molecular and Cellular Responses to Xenobiotics, Unit of Functional and Adaptive Biology, UMR CNRS 8251, France)

PS5.1-12 **Tackling confounding factors in nanomaterial hazard assessment: re-examining dose metrics**
6:00 - 6:15

Heinrich Hofmann, Nadia von Moos, Cordula Hirsch, Sarah. May, Peter Wick, (Ecole Polytechnique Fédérale de Lausanne, Powder Technology Laboratory, Switzerland)

PS5.1-13 **Surface reactivity as criterion for grouping and read-across**
6:15 - 6:30

Wendel Wohlleben, Christian Riebeling, Martin Wiemann, Thomas A. J. Kuhlbusch, Bryan Hellack, Andreas Luch, Andrea Haase, Robert Landsiedel, (BASF SE, Material Physics, Germany)



Raphaël de THOURY

Nanobadge, France

Mr. Raphaël de Thoury: Chief Executive Officer of NANO INSPECT. Raphaël is a graduate of a leading French engineering school (Ecole Polytechnique and National Bridges and Road School). He's spent the last 13 years in innovation management and more specifically in economic valorisation of public technologies by start-ups or intermediate sized companies. He created a company which was awarded in 2004 the second best innovating company in France by the French Ministry of Research. Before joining ALCEN at the head of Nano Inspect, he was the chief technical and innovation officer of a leading laboratory in material testing for building and civil engineering. Raphaël has a strong experience of complex projects mixing high-level science and business development at an international level

Plenary Session: Session 3.6 - Commercial Equipment

Room: Auditorium Platine / 8:00am - 8:30am

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Daily Program & Plenary Sessions

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8:00am - 8:45am	Session 3.6: Commercial Equipment
Speaker: Raphaël de Thoury , Nano-Inspect, France <i>PL3.6: Feedback from Nanobadge use on site and combination with real-time counters when performing a basic nano exposure assessment stage</i>	
8:00am - 10:00am	Parallel Sessions (details page 43)
10:00am - 10:30am	Coffee Break
10:30am - 12:30pm	Parallel Sessions (details page 45)
12:30pm - 1:00pm	End of the Conference / Conclusion
1:00pm - 2:00pm	Lunch break

Session 3.6: Commercial Equipment // Auditorium Platine

Chair: Raphaël DE THOURY, Nano-Inspect, France

PS3.6-1 Sensing solution for airborne carbon nanotube exposure in workplaces based on surface-enhanced raman spectroscopy

8:45 - 9:00

Rudolf Bieri, Burcu Çelikkol Zijlstra, Joanna Borek-Donten, Stefano Cattaneo, Thomas Bürgi, (Stat Peel AG, Switzerland)

PS3.6-2 Particle size distribution measurements with the Novel 1NM-SMPS

9:00 - 9:15

Torsten Tritscher, Florian Dahlkötter, Carsten Kykal, Jacob H.T. Scheckman, Jürgen Spielvogel, Thomas Krinke, Eric Filimundi, Patrick Post, Alfred Weber and Oliver F. Bischof, (TSI GmbH, Particle Instruments, Germany)

PS3.6-3 Dekati® eFilter™, a gravimetric filter holder with an integrated diffusion charger

9:15 - 9:30

Ville Niemelä, Mikko Moisio, Erkki Lamminen, (Dekati Ltd., Finland)

Session 5.1: Toxicology // Chrome 3

Co-Chair: Marie CARRIERE, Univ. Grenoble Alpes, CEA / DRF / INAC, France

PS5.1-14 Antibacterial activities of nitric oxide releasing silver nanoparticles

8:00 - 8:15

Amedea B. Seabra, Nixson Manosalva, Bruna Lima, Milena T. Pelegrino, Marcelo Brocchi, Olga Rubilar, Nelson Durán, (Center of Natural and Human Sciences, Universidade Federal do ABC, Brazil)

PS5.1-15 Characterization of released aerosol from photocatalytic paints under realistic sanding

8:15 - 8:30

Stéphane Delaby, François Gaie-Levrel, Stéphane Manixay, Marlène Wiar, Anna Bencsik, (Centre scientifique et technique du bâtiment - CSTB, France)

PS5.1-16 Demonstration of a probe-sonicator calibration protocol for harmonization of batch dispersions used for toxicological testing

8:30 - 8:45

Keld A. Jensen, (National Research Centre for the Working Environment, Denmark)

PS5.1-17 Investigating multiple endpoints for the interaction assessment of a graphene oxide-silver nanocomposite with macrophage

8:45 - 9:00

Luis Augusto Visani de Luna, Ana Carolina Mazarin de Moraes, Douglas Soares da Silva, Nahiara Esteves Zorgi, Sílvia Roberto Consonni, Selma Giorgio, Oswaldo Luiz Alves, (Laboratory of Solid State Chemistry - LQES, Institute of Chemistry, University of Campinas - UNICAMP, Brazil)

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Monday 7 November, 2016

PS5.1-18
9:00 - 9:15

Topical application of nitric oxide-releasing nanoparticles combined with UV irradiation enhance nitrogen oxides stores in human epidermis

Milena T. Pelegrino, Richard Weller, Xiaochao Chen, Amedea B. Seabra, (Exact and Earth Sciences Department, Universidade Federal de São Paulo, Brazil)

PS5.1-19
9:15 - 9:30

Lung remodeling after pulmonary exposure of mice to cerium oxide nanoparticles - role of autophagy

Balasubramanyam Annangi, Audrey Ridoux, Jorge Boczkowski, Sophie Lanone, (INSERM, U955, Equipe 4, France), (Université Paris Est-Créteil, Faculté de Médecine, France)

Tuesday 8 November, 2016

PS5.1-20
9:30 - 9:45

Toxic effects of nanoparticles on cells are modulated by their exposure scenarios

Catherine Aude-Garcia, Marie Carrière and Thierry Rabilloud, (DRF / BIG / LCBM, CEA-Grenoble, France)

Wednesday 9 November, 2016

Thursday 10 November, 2016

Session 5.2 : Environmental Interactions of nanomaterials // Auditorium Platine

Co-Chair: Mark WIESNER, Duke University, USA

PS5.2-5 Nanoparticle deposition on a surface colonised by bacterial polysaccharide
10:30 - 10:45

Yuliya Dzumedzey, Jerome Labille, Bernard Cathala, Celine Moreau, Catherine Santaella, (CEREGE, Aix-Marseille University, France)

PS5.2-6 Silver nanoparticle interactions during wastewater treatment determine their environmental path
10:45 - 11:00

Geert Cornelis, Nils-Petter Sköld, Anna-Maria Forsberg-Grivogiannis, Jenny Perez-Holmberg, (Gothenburg University, Department of Chemistry and Molecular Biology, Sweden), (Swedish University of Agricultural Sciences, Department of Soil and Environment, Sweden)

PS5.2-7 Biofilm formation and biodegradation of carbon Nanotube/Polymer Nanocomposites
11:00 - 11:15

Howard Fairbrother, David G. Goodwin Jr., Duc Phan, Zehui Xia, Iruhany Boyer Sosa, Thomas Devahif, Tucker Gordon, Xier Lu, Leo Kuwama, and Ed J. Bouwer, (Johns Hopkins University, USA)

PS5.2-8 Standardized analysis of morphology & toxicology effects in freshwater organisms (*D. rerio* embryos & *D. magna*) to nano-carrier exposure
11:15 - 11:30

Andrew Reynolds, Dr Gordon Chambers, (Focas Institute – Dublin Institute of Technology, Ireland)

PS5.2-9 In vitro study of synthesis, characterization of ZnO nanoparticles and evaluation their impact on growth, metabolism and tissue specific accumulation in Brassica juncea
11:30 - 11:45

Gyan Singh Shekhawat and S. Rao, (Department of Botany, Jai Narain Vyas University, India)

PS5.2-10 Aging effects on the toxicity of silver nanoparticles with varying properties to soil bacteria in artificial media and soil pore water
11:45 - 12:00

Carolin L. Schultz, Joanna Gray, Marianne Matzke, Claus Svendsen, Liz Shaw, Elma Lahive, (Centre for Ecology and Hydrology, UK)

PS5.2-11 Deciphering the response of canola plant microbiome to nanomaterials
12:00 - 12:15

C. Santaella, M. Hamidat, B. Collin, M. Barakat, P. Ortet, J. Rose, JY Bottero, W. Achouak, (Aix-Marseille Université, CEA, CNRS, Biosciences and biotechnology Institute of Aix-Marseille BIAM, DRF, UMR 7265, LEMIRE, CEA Cadarache, France), (GDRi iCEINT, CNRS-Duke University, France)

PS5.2-12 Degradation of bis-4-nitrophenyl phosphate using zero-valent iron nanoparticles
12:15 - 12:30

Maiby Valle-Orta, David Díaz, Inti Zumeta Dubé and Rubén Saldivar Guerrero, (Centro de Investigación en Química Aplicada, México)

Session 5.1: Toxicology // Chrome 3

Co-Chair: Peter HOET, KU Leuven, Belgium

PS5.1-21 **Characterization of nanoparticles in urine from rats exposed to titanium dioxide nanoparticles**
10:30 - 10:45

Caroline Marie-Desvergne, Thomas Philippe, Muriel Dubosson, Catherine Campo, Michèle Bouchard, Denis Dième, Aurélien Viscardi, Véronique Chamel Mossuz, (Univ. Grenoble Alpes, CEA, NanoSafety Platform, Medical Biology Laboratory, France)

PS5.1-22 **Impact of E171 food additive (TiO₂) on human intestinal cells: from toxicity to impairment of intestinal barrier function**
10:45 - 11:00

Marie Dorier, David Béal, Frederick Barreau, Karin Pernet-Gallay, Caroline Marie-Desvergne, Alexandra Hihn, Nathalie Herlin-Boime, Thierry Rabilloud, Marie Carriere, (Univ. Grenoble-Alpes, DRF/INAC/LCIB, CEA Grenoble, DRF/INAC/SyMMES, France)

PS5.1-23 **Carbon nanotubes but not spherical nanoparticles block autophagy process by a shape-related targeting of lysosomes in murine macrophages**
11:00 - 11:15

A. Ridoux, V. Cohignac, M. Landry, A. Gerdil, N. Herlin, M. Haruta, P. Codogno, J. Boczkowski, J.-C. Pairon, S. Lanone, (Inserm, U955 Equipe 4, France)

PS5.1-24 **Impact of various metallic nanoparticles on metal homeostasis**
11:15 - 11:30

Isabelle Michaud-Soret, Mireille Chevallet, Aurélien Deniaud, Giulia Veronesi, Thomas Gallon, Pierre-Henri Jouneau, Benoit Gallet, Martine Cuillel, Khémary Um, Peggy Charbonnier and Elisabeth Mintz, (CNRS, Laboratoire de Chimie et Biologie des Métaux, France), (CEA, BIG, LCBM, Grenoble, France)

PS5.1-25 **High dimension biological analysis of carbon nanotube toxicity**
11:30 - 11:45

D.A. Sarigiannis, S. Karakitsios, A. Tsatsakis, K.S. Golokhvast, A.B. Engin, (Aristotle University of Thessaloniki, Department of Chemical Engineering, Environmental Engineering Laboratory, University Campus, Greece), (Environmental Health Engineering, Institute of Advanced Study, Italy)

PS5.1-26 **Cellular uptake and toxicity of positively and negatively charged silica nanoparticles**
11:45 - 12:00

Elisabeth Elje, Julia Schölermann, Mihaela Roxana Cimpan, Maria Dusinska, (Department of Clinical Dentistry – Biomaterials, University of Bergen, Norway), (NILU- Norwegian Institute for Air Research, Department of Environmental Chemistry, Health Effects Laboratory, Norway)

PS5.1-27 **Impact of silver nanowire length, diameter, and surface chemistry on rainbow trout RTgillW1 and RTgutGC cell lines**
12:00 - 12:15

Devrah Arndt, Djadidi Toybou, Benjamin Gilbert, Sylvia Lehmann, Laurent Charlet, Brenda Omana, Annette Hofmann, Christopher Vulpe, (University of Florida CEHT, USA)

GENERAL INFORMATION

- Posters will be on display for the entire 4-days conference, in the poster area, at level 0.
- The poster sessions will be held throughout the conference during the lunch breaks.
- Poster presenters will be standing by their posters.

Session 1: New applications of nanomaterials

S1 - P1 Preparation techniques for detection and extraction of nanoparticles in cosmetic formulations

R. R. Retamal Marín, F. Babick, M. Stintz, (TU Dresden – Research group Mechanical Engineering, Germany)

S1 - P2 Synthesis, characterization and in vitro antitumor activity of glutathione-peg-iron oxide magnetic nanoparticles

Paula.S. Haddad, Marconi C. Santos, Carolina A. de Guzzi Cassago, Marcelo. B. de Jesus, Amedea B. Seabra, (Exact and Earth Sciences Department, Universidade Federal de São Paulo, UNIFESP, Brazil)

S1 - P3 Characterization of nanoparticle solutions with hydrodynamic chromatography connected to single particle inductively coupled plasma mass spectrometry

Daniel Rosenkranz, René Matschaß, Jutta Tentschert, Norbert Jakubowski, Ulrich Panne, Peter Laux, Andreas Luch, (German Federal Institute for Risk Assessment, Germany)

S1 - P4 Development of a miniature electrical ultrafine particle sizer (mini-eups)

Qiaoling Liu, Daren Chen, (Particle Laboratory, Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, USA)

S1 - P5 Measuring at relevant concentrations – Radiolabeling as a versatile tool in nanosafety research

Stefan Schymura, Heike Hildebrand, Elena Bellido, Isaac Ojea-Jiménez, Izabela Cydzik, Jan Kozempel, Matteo Dalmiglio, Antonio Bulgheroni, Giulio Cotogno, Federica Simonelli, Johannes Kulenkampff, Uwe Holzwarth, Neil Gibson, Karsten Franke, (HZDR, Research Site Leipzig, Institute of Resource Ecology, Germany)

S1 - P6 Life nanomonitor: development of a real time information and monitoring system to support the risk assessment of nanomaterials under reach

C.Fito, J.L.Palau, Athena Progiou, J.Friesl, (ITENE Research center, Spain)

S1 - P7 Dustiness of 14 carbon nanotube powders using the vortex shaker method

Olivier Witschger, Claire Dazon, Sébastien Bau, Raphaël Payet, Karine Beugnon, Geneviève Petit, Thibaut Garin, Laurent Martinon, (INRS, Laboratoire de Métrologie des Aerosols, France)

S1 - P8 Nanoid platform, to detect and quantify the chemical nature of nanoparticles in complex matrices

Delphine Boutry, Sylvie Motellier, Romain Soulas, Olivier Renard, Jérôme Rose, Henri Wortham, Géraldine Sarret, Thierry Guérin, Sophie Lanone, Marie Zimmer-Jehanne, Julien Beausoleil, (CEA – Grenoble, France)

S1 - P9 Development and application of a novel analytical approach based on asymmetric flow field flow fractionation coupled to ICP-MS for TiO₂ nanoparticles determination in food

Lucas Givelet, D. Boutry, S. Motellier, P. Jitaru, T. Guérin, J.F. Damlencourt, (CEA Grenoble, France)

S1 - P10 Performance study of portable devices for the real-time measurement of airborne particle number concentration and size (distribution)

Sébastien Bau, Raphaël Payet, Olivier Witschger and Elzbieta Jankowska, (INRS, Laboratoire de Métrologie des Aerosols, France)

S1 - P11 Biosensor surface plasmon resonance to study melanin

Khaled Ayadi, H.Bouandas, I.Habia, (Applied Optics Laboratory, Institute of Optics, University Ferhat Abbas, Algeria)

S1 - P12 Study of a new trap impactor for respirable aerosol NanoBadge sampler

Christophe Brouard, Michel Pourprix, Arnaud Guiot, Raphaël De Thoury, (NanoSafety Platform, CEA Grenoble, France)

Session 2: Exposure

S2- P1 Exposure assessment of nanomaterials at production sites based on short time sampling: Strategy & methodology of the STS-EA approach

Christophe Bressot, N. Shandilya, T. Jayabalan, O. Le Bihan, G. Fayet, O. Aguerre-Chariol, (INERIS, France)

S2 - P2 Assessment of personal exposure to airborne nanomaterials: “Sampling and/or Monitoring?”

Simon Clavaguera, Ana Maria Todea, Barbara Simonow, Asmus Meyer-Plath, Bertrand Faure, Arnaud Guiot, Christof Asbach, (NanoSafety Platform, CEA – Grenoble, France)

S2 - P3 Personal exposure to nanoparticles in 3D-printing

Anneli Kangas, Kukko K., Huhtiniemi M., Kanerva T., Säämänen, A., Hämeri K., Viitanen A.-K., (Finnish Institute of Occupational Health, Finland)

S2 - P4 Exposure to incidental nanoparticles at different workplaces

Mirella Miettinen, Maija Leppänen, Jani Leskinen, Jorma Jokiniemi, Anna-Kaisa Viitanen, (Department of Environmental and Biological Sciences, University of Eastern Finland, Finland)

S2 - P5 Nanoparticles in occupational environments - Evaluation and assessment of personal exposure

Toni Kanerva, A. Kangas, A. Säämänen, M. Miettinen, A-K. Viitanen, (Finnish Institute of Occupational Health, Finland)

- S2- P6 Exposure assessment method for products containing nanomaterials using a gas sample introduction system for ICP-MS**
Yasuto Matsui, Nobuyuki Kato, Kohe Nishiguchi, Minoru Yoneda, (Safety Research Center, Kyoto University, Japan)
- S2 - P7 Laboratory tests of stationary and personal nanoparticle instruments for the assessment of airborne nanofibre exposures**
Asmus Meyer-Plath, Barbara Simonow, Daniela Wenzlaff, Sabine Plitzko, Ana Maria Todea, Bertrand Faure, Simon Clavaguera, Martin Fierz, Christof Asbach, (Federal Institute for Occupational Safety and Health, Germany)
- S2 - P8 Dry aerosolization technique for continuous and stable generation of Carbon Nanotube aerosols containing a large fraction of individual fibers**
Barbara Simonow, Daniela Wenzlaff, Asmus Meyer-Plath, Sabine Plitzko, (Federal Institute for Occupational Safety and Health - BAuA, Germany)
- S2 - P9 Approach for the exposure assessment at the various stages of the nanomaterial-enabled product life cycle**
Maida Domat, Carlos Fito, Araceli Sánchez-Jiménez, Sally Spankie, Karen Galea, Andrew Apsley, Ioannis Basinas, Wouter Fransman, Eelco Kuijpers, (ITENE, Spain)
- S2 - P10 Does local exhaust ventilation provide sufficient protection against airborne nanoparticle exposure?**
Ian Marshall, Jason Southgate, (Ricardo Energy & Environment, UK)

Session 3.1: Release from nano-enabled products

- S3.1-P1 An exposure assessment method for products containing carbon nanotubes inside a test chamber**
Taiki Nagaya, Nobuyuki Kato, Isamu Ogura, Kuniaki Gotoh, Minoru Yoneda, Yasuto Matsui, (Graduate School of Engineering, Kyoto University, Japan)
- S3.1-P2 Quantitative measurement of carbon nanotubes released from their composites by thermal carbon analysis**
Isamu Ogura, Mari Kotake, Seisuke Ata, Kazumasa Honda, (National Institute of Advanced Industrial Science and Technology, Japan), (Technology Research Association for Single Wall Carbon Nanotubes, Japan)
- S3.1-P3 Characterization of released aerosol from photocatalytic paints under realistic sanding**
Stéphane Delaby, François Gaie-Levrel, Stéphane Manixay, Marlène Wiart, Anna Bencsik, (Centre scientifique et technique du bâtiment - CSTB, France)
- S3.1-P4 Airborne particles released by crushing CNT composites**
Isamu Ogura, Chihiro Okayama, Mari Kotake, Seisuke Ata, Yasuto Matsui, Kuniaki Gotoh, (National Institute of Advanced Industrial Science and Technology, Japan), (Technology Research Association for Single Wall Carbon Nanotubes, Japan)

S3.1-P5 Mechanical ageing of nanomaterials: experimental set up and abrasion trends

Arnaud Guiot, Aurélien Auger, Jean-François Damlencourt, Carlos Conception Heydorn, Marta Santiago, Ewa Lie, Alexei A. Antipov, Alejandro Vilchez, Socorro Vasquez, Delphine Boutry, (CEA – Grenoble, France)

S3.1-P6 Development of an abrasion method for the exposure assessment of products containing nanomaterials

Tomonori Ishibashi, Nobuyuki Kato, Isamu Ogura, Kuniaki Gotoh, Minoru Yoneda, Yasuto Matsui, (Graduate School of Engineering, Kyoto University, Japan)

Session 3.2: Safer by design nanomaterial and process

S3.2-P1 Colloidal characterisation of surface modified CuO nanosol

Simona Ortellì, Magda Blosi, Luca Viale, Anna Luisa Costa, (CNR-ISTEC, Institute of Science and Technology for Ceramics, National Research Council, Italy)

S3.2-P2 Impact of Cu(I) chelating proteins and their chemical mimics on silver nanoparticle behaviour

Marianne Marchioni, I. Worms, P. Delangle, C. Gateau, F. Rollin-Genetet, C. Vidaud, E. Mintz, T. Gallon, A. Deniaud, I. Michaud-Soret, (CNRS, LCBM UMR 5249 CNRS-CEA-UGA, France), (CEA, LCBM, France), (Université Grenoble Alpes, LCBM, France)

S3.2-P3 Safer by Design sunscreen using titanium dioxide nanoparticles

Jérôme Labille, D. Slomberg, J.-C. Hubaud, A. Lopes, I. Capron, S. Motellier, C. Santaella, S. Lehmann, L. Hédouin, A. Pinsino, A. Glaser, C. Levard, J. Rose, D. Boutry, P. Hennebert, C. de Garidel-Thoron, (Labex Serenade, CEREGE, Aix-Marseille Université, France)

S3.2-P4 Safer-by-design conception of TiO₂ nanoparticles coated with bio-inspired ligands for industrial application in paints and lacquers

Jérôme Laisney, Aurélien Deniaud, Vincent Bartolomei, Delphine Boutry, Isabelle Michaud-Soret, (CEA – Grenoble, LCBM, Bioscience and Biotechnology Institute of Grenoble - BIG, UMR 5249 CEA/CNRS/UGA, France)

S3.2-P5 Safe-by-Design Nanocomposite for Food Packaging application

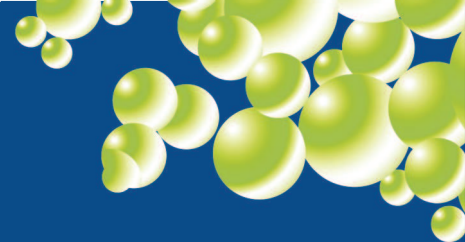
Aida Nasiri, Stéphane Peyron, Emmanuelle Gastaldi, Nathalie Gontard, (UMR IATE, CIRAD, INRA, Montpellier SupAgro, Université de Montpellier, France)

S3.2-P6 Development of optimal synthesis strategies for the reduction of nanotechnology associated risks

Ariadna Peral Guillamon, B.M. Cobaleda-Siles, V.F. Puentes, (Institut de Recerca Vall d'Hebron - VHIR, Spain)

S3.2-P7 Ageing and nanoreleased of photocatalytic paint products: towards a safer by design approach

Vincent Bartolomei, Boutry Delphine, Philippot Cécile, Guiot Arnaud, Pepin-Donat Brigitte, Lombard Christian, Benayad Anass, Damlencourt Jean Francois, (CEA – Grenoble, France)



Session 3.3: Risk management

S3.3-P1 Evaluation of chemical protective garment seams and zipper for resistance to airborne nanoparticles

Ludwig Vinches, Amina Tami, Stéphane Hallé, (École de technologie supérieure, Canada)

S3.2-P2 Development and testing of methodology to assess the efficiencies of respiratory protective equipment against nanomaterials

Maida Domat, Carlos Fito, (ITENE, Spain)

S3.3-P3 Surveillance of occupational health in construction and civil-engineering workers handling engineered nanomaterials

Kathleen Chami, Anca Radauceanu, Myriam Ricaud, Dominique Payen, Catherine Durand, Sophie Kowal, Cécile Ducros, Patrick Richard, Irina Guseva Canu, (Santé Publique France, Agence nationale de santé publique, France)

S3.3-P4 Life nanorisk: evaluation of the effectiveness of risk management measures against nanomaterials

Carlos Fito, E.Frijns, A.Hernandez, E.Hoyas, P.Beltran, E.Santamaria, E.Campos, S.Priante, (ITENE Research center, Spain)

S3.3-P5 Nanomaterials risk assessment practices in industry

David G. Rickerby, Andreas N. Skouloudis, (European Commission, Joint Research Centre, Directorate F, Italy)

S3.3-P6 Nanomaterials removal efficiency for different treatment technologies: review

Carlos Fito, Jordi Palau, (Instituto Tecnológico del Embalaje, Transporte y Logística, Spain)

S3.3-P7 Comparative approaches to risk assessment urban nanoparticles in Russia and EU (for example, Norway)

Anzhela Glushkova, (Research Institute of Hygiene, Occupational Pathology and Human Ecology, Russia)

Session 3.4: From nanoproducts to waste

S3.4-P1 Nanotechnologies for buildings of the future

Grewal Dalvindersingh, (Desh Bhagat University, India)

S3.4-P2 Metallic nanowaste: towards sustainable recycling solutions

Brenda Omana S, Annette Hofmann, Ludovic Lesven, Sophie Sobanska, Benjamin Gilbert and Laurent Charlet, (UMR 8187, LOG Laboratoire d'Océanologie et de Géosciences, Université Lille 1, France)

S3.4-P3 Thermal disposal of waste containing nano-objects: first investigations on a methodology for risk management

G. Ounoughene, O. Le Bihan, C. Chivas-Joly, C. Longuet, B. Debray, A. Joubert, J-M. Lopez-Cuesta, L. Le Coq, (LUNAM, Ecole des Mines de Nantes, GEPEA, CNRS, UMR 6144, France), (C2MA, Ecole des Mines d'Alès, France), (ADEME, France)

S3.4-P4 How to remove TiO₂ nanoparticles from a surface: A primary cleaning protocol

Delphine Boutry, Maxence Laugier, Sébastien Diry, Sylvie Motellier, Caroline Celle, Jean-François Damlencourt, (Univ. Grenoble Alpes, CEA Tech Liten, PNS, DTNM, France)

S3.4-P5 Nanocomposites end-of-life studies – A high thermal degradation lab-scale experimental set-up

Sébastien Jacquinot, E.Zimmermann, N.Pelissier, A. Guiot, D. Boutry, J.F. Damlencourt, S. Vázquez, A. Vilchez, C. Citterio, C.Philippot, (CEA-Grenoble, NanoSafety Platform - L2N, France)

Session 3.6: Commercial equipment

S3.6-P1 Accurate nanoparticle characterization using SAXS measurements

B. Faure, S. Desvergne-Blenau, P. Panine, B. Lantz, P. Høghøj, F. Benvenuto, Z. Jiang and H. Haddar (Xenocs SA, France)

Session 4: Urban particles

S4-P1 French Network on Ultrafine Particles Monitoring: first results

A. Thomasson, P.Y. Guernion, B. Mesbah, F. Roze and O. Le Bihan, (ATMO Auvergne/Rhône-Alpes, France)

S4-P2 Determination of the UFP_3031 Uncertainty on Number Concentration regarding Ambient Air Particle Monitoring

O. Le Bihan, M. Dalle, A. Thomasson, F. Pin, B. Mesbah, P. Bourquin and O. Favez, (INERIS, France)

Session 5.1: Toxicology

S5.1-P1 Synthesis, characterization and cytotoxicity of s-nitroso-mercaptosuccinic acid-containing alginate/chitosan nanoparticles

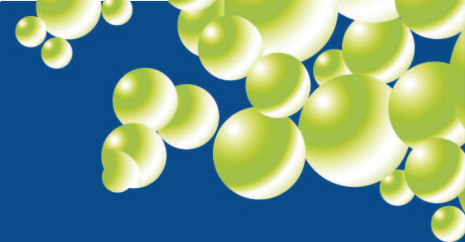
Amedea B. Seabra, Giulia K. Fabbri, Milena T. Pelegrino, Letícia C. Silva, Tiago Rodrigues, (Center of Natural and Human Sciences, Universidade Federal do ABC, Brazil), (Exact and Earth Sciences Department, Universidade Federal de São Paulo, Brazil)

S5.1-P2 Nanomaterial toxicity through a safer by design approach on *Mytilus Edulis* hemocytes

Andrew Barrick, Mélanie Bruneau, Catherine Mouneyrac and Amélie Châtel, (Mer Molécules Sante - MMS, Université Catholique de l'Ouest, France)

S5.1-P3 In Vivo nanotoxicological profile of graphene oxide

Nelson Durán, Marcela Durán, Wagner J. Fávaro, (Lab.Urogenital Carcinogen and Immunother UNICAMP, Campinas-SP, Brazil), (NanoBioss, Inst. Chem. UNICAMP, Campinas-SP, Brazil)



S5.1-P4 Natural lipids in nanostructured lipid carriers and its cytotoxicity

Nelson Durán, Paula A. Lima, Caroline A.D. Rampazo, Amanda F. Costa, Tiago Rodrigues, Carolina M. Watashi, (Institute of Chemistry, Biological Chemistry Laboratory, University of Campinas, Brazil), (NanoBioss, Brazil), (National Nanotechnology Laboratory - LNNano-CNPEM, Brazil)

S5.1-P5 Additive interaction of carbon dots extracted from soluble coffee and biogenic silver nanoparticles against bacteria

Nelson Durán, Patricia F. Andrade, Gerson Nakazato, (Institute of Chemistry, University of Campinas UNICAMP, Brazil), (NanoBioss, Institute of Chemistry, UNICAMP, Brazil), (Brazil. Nat. Nanotechnol. Lab. - LNNano-CNPEM, Brazil)

S5.1-P6 Chronic effects of titanium dioxide nanoparticles on the tropical cladoceran *Ceriodaphnia silvestrii* by dietary exposure

Gisele Maria de Lucca, Emanuela Cristina Freitas, Maria da Graça Gama Melão, (Post-Graduate Program of Ecology and Natural Resources, Federal University of São Carlos - UFSCar, Brazil)

S5.1-P7 Cytotoxicity of nitric oxide releasing polymeric nanoparticles to tumor cell lines

Milena T. Pelegriño, Paula Haddad, Tiago Rodrigues, Letícia C. Silva, Carolina M. Watashi, Amedea B. Seabra, (Exact and Earth Sciences Department, Universidade Federal de São Paulo, Brazil)

S5.1-P8 Complex assessment of cyto-, geno- and embryotoxicity of nanoparticles in experiment in vitro

Galina A. Protasova, Vadim B. Popov, Lidiya V. Shabasheva, Ivan V. Strekalovskii, Yuliya A. Panferova, Nataliia S. Khlebnikova, and Andrey A. Radilov, (Research Institute of Hygiene, Occupational Pathology and Human Ecology, Russian Federation)

S5.1-P9 Interaction of carbon nanoparticles with human complement

Wai Li Ling, Agathe Belime, Edmond Gravel, Sarah Ancelet, Charlotte Caneiro, Christine Gaboriaud, Guy Schoehn, Eric Doris, Nicole Thielens, (Institut de Biologie Structurale, CEA, CNRS, Grenoble Alpes University, France)

S5.1-P10 Evaluation of ecotoxicity of metal oxides nanoparticles

Sofía Ricarte González, Oscar Andreu, Eva Araque, Carlos Fito, (ITENE, Spain)

S5.1-P11 The wide scope study of the cellular responses of macrophages to amorphous silica reveals new cross-toxicities

Thierry Rabilloud, Catherine Aude-Garcia, Bastien Dalzon, Hélène Diemer, David Béal, Jean-Luc Ravanat, Sarah Cianferani and Marie Carrière, (Chemistry and Biology of Metals, UMR CNRS/CEA/UGA 5249, CEA Grenoble, France)

S5.1-P12 What can electronic cell-substrate impedance sensing (ECIS) tell us about gold nanoparticle toxicity

Hendriette Van der Walt and A. Skepu, (DST/Mintek NIC, Advanced Materials Division, South Africa)

S5.1-P13 TiO₂-induced gene expression and protein profiles in rat lung: a subacute inhalation study

Laëtitia Chézeau, Ramia Safar, Olivier Joubert, Frédéric Cosnier, Stéphane Binet, Bertrand Rihn, Laurent Gaté, (INRS, France)

S5.1-P14 Carbon nanotubes and metal nanoparticles differentially alter lysosomal functions

Stéphane Tchankouo Nguetcheu, A. Ridoux, J. Boczkowski, S. Lanone, (Inserm U955 Équipe 4, Faculté de Médecine, France)

S5.1-P15 Hazard assessment of nanomaterials: outline of the guidenano approach

Gemma Janer, Margriet Park, Julia Catalan, Joan Cabellos, Maria Diez, Maria Luisa Fernandez-Cruz, Natalia Ferraz, David Hernandez-Moreno, Juan Jose Izquierdo-Galvez, Viviana Lopes, Marianne Matzke, Helene Stockmann-Juvala, Socorro Vázquez-Campos, Claus Svendsen, (LEITAT Technological Center, Spain)

S5.1-P16 Effects of cerium oxide nanoparticles on the respiratory epithelium in vitro

Sonja Boland, Mathilde Delaval, Lan Ma-Hock, Wendel Wohlleben, Robert Landsiedel, Armelle Baeza-Squiban, (University Paris Diderot, Sorbonne Paris Cité, Unit of Functional and Adaptive Biology - BFA, UMR CNRS 8251, France)

S5.1-P17 Aligning nanotoxicology with the 3Rs: What is needed to realise the short, medium and long-term opportunities?

Karin Aschberger, Natalie Burden, Qasim Chaudhry, Martin J.D. Clift, Shareen H. Doak, Paul Fowler, Helinor Johnston, Robert Landsiedel, Joanna Rowland, and Vicki Stone, (JRC-F3, EURL ECVAM, Italy)

S5.1-P18 Evaluation of the potential health risk of silver nanowires via dermal exposure

Sylvia G. Lehmann, Benjamin Gilbert, Thierry Maffeis, Walid Rachidi, Michel Seve, Laurent Charlet, (Univ. Grenoble Alpes, ISTerre, France)

S5.1-P19 Polarization of phorbol myristate acetate-induced THP-1 macrophages following exposure to silver nanoparticles alone or in combination with aluminum chloride, butylparaben or dibutylphthalate

Joanna Roszak, K. Domeradzka-Gajda, A. Smok-Pieniążek, J. Grobelny, E. Tomaszewska, G. Celichowski, M. Cieślak, D. Puchowicz, M. Stępnik, (Department of Toxicology and Carcinogenesis, Nofer Institute of Occupational Medicine, Poland)

S5.1-P20 Nanocellulose and Health: state of the art

Cécile Sillard, Julien Bras, (Laboratory of Pulp and Paper Science and Graphic Arts – LGP2 UMR 5518 / CNRS – Grenoble INP - Agefpi, France)

S5.1-P21 Toxicity ranking of nanomaterials based on two different in vitro human cytotoxicity assays

Elise Rundén-Pran, Naouale El Yamani, Lise Marie Fjellsbø, Maria Dusinska, (NILU - Norwegian Institute for Air Research, Department of environmental chemistry, Health Effects Laboratory, Norway)

S5.1-P22 High throughput comet assay: applications in genotoxicity testing of nanomaterials

Naouale El Yamani, Andrew R. Collins, Elise Rundén-Pran, Lise Marie Fjellsbø, Sergey Shaposhnikov, Maria Dusinska, (NILU - Norwegian Institute for Air Research, Department of environmental chemistry, Health Effects Laboratory, Norway)

S5.1-P23 The reactive oxidative potential of PM associated with sources and its impact on human health

Spyros P. Karakitsios, Dimosthenis A. Sarigiannis, Marianthi V. Kermenidou, (Aristotle University of Thessaloniki, Department of Chemical Engineering, Environmental Engineering Laborator, Greece)

S5.1-P24 Nanoencapsulation of the herbicide atrazine: a safer alternative for weed control?

Monique Culturato Padilha Mendonça, Maria Alice da Cruz-Höfling, Leonardo Fernandes Fraceto, Marcelo Bispo de Jesus, (Department of Biochemistry and Tissue Biology, Institute of Biology, University of Campinas - UNICAMP, Brazil)

S5.1-P25 The effect of silver nanowire diameter on cytotoxicity to human fibroblasts

Muriel Viau, Djadidi Toybou, Sylvia Lehmann, Jean-Pierre Simonato, Caroline Celle, Benjamin Gilbert, Laurent Charlet, (Université Aix-Marseille, CEREGE, France), (Université Grenoble Alpes, ISTERre, France)

S5.1-P26 Whole genome epigenetic and transcriptional effects of exposing human bronchial epithelial cells to single- and multi-wall carbon nanotubes

Peter Hoet, Deniz Öner, Matthieu Moisse, Manosij Ghosh, Radu C. Duca, Katrien Poels, Bram Boeckx, Katrien Luyts, Eveline Putzeys, Jeroen Vanoirbeek, Diether Lambrechts, Lode Godderis, (KU Leuven, Department of Public Health and Primary Care, Unit of Environment and Health, Laboratory of Toxicology, Belgium)

Session 5.2: Environmental interactions of nanomaterials

S5.2-P1 Erbium and dysprosium nanoparticles and their impacts to the production of enzymes with white-rot fungus *Cerrena unicolor*

Mika A. Kähkönen, Anu Kinnunen, Annele Hatakka, (University of Helsinki, Department of Food and Environmental Sciences/ Microbiology and Biotechnology Division, Biocenter, Finland)

S5.2-P2 Toxicological effects of graphene oxide on adult zebrafish (*Danio rerio*)

Jaqueline P. Souza, Fabrício Santos, Ieda M. M. Paino, Valtencir Zucolotto, (Nanomedicine and Nanotoxicology Group - Physics Institute of São Carlos - University of São Paulo, Brazil)

S5.2-P3 Study of changes in the bioavailability of silver nanoparticles by the bacterial strain *Bacillus subtilis*

Elise Eymard-Vernain, Cécile Lelong, Géraldine Sarret, Thierry Rabillour, (CEA – Grenoble, France), (ISTERre, France)

S5.2-P4 Lack of pattern in the relationship between nanoparticle coatings and cytotoxicity in fish cell lines

Maria Luisa Fernandez-Cruz, David Hernandez-Moreno, Javier Hernandez-Gonzalo, Jose M Navas, (Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria - INIA, Departamento de Medio Ambiente, Spain)

S5.2-P5 Transport and mobility of nanomaterials in porous, soil-like media

André Nogowski, Martin Hoppe, Urs Dippon, Daniel Göhler, Benno Wessely, (Research Group Mechanical Process Engineering, Institute of Process Engineering and Environmental Technology, Germany)

S5.2-P6 Impact of a cerium dioxide nanoparticles enriched biosolid on a soil-plant-bacteria system

Blanche Collin, Mohamed. Barakat, Philippe. Ortet, Wafa Achouak, Emmanuel Doelsch, Nicolas Roche, Mélanie Auffan, Catherine Santaella, (Aix-Marseille Université, CEA, CNRS, Biosciences and biotechnology Institute of Aix-Marseille BIAM, DRF, UMR 7265, LEMIRE, CEA Cadarache, France), (GDRI iCEINT, international Consortium for the Environmental Implication of Nanotechnology, CNRS-Duke University, France), (Aix-Marseille Univ, CNRS, IRD, CEREGE UM34, UMR 7330, France)

S5.2-P7 Joint toxicity of chlorpyrifos and zinc oxide nanoparticles at sub-lethal concentrations to the earthworm *Eisenia foetida*

Mar Babin, M^a Dolores Fernández, Sandra García, Ana Obrador, Carmen del Rio, Concepción García-Gómez, (INIA. Dep. Environment, Spain)

S5.2-P8 Ecotoxicological effects of multiwalled carbon nanotubes and carbofuran on metabolism of *Astyanaxribeirae*fish: influence on oxygen consumption and ammonia excretion

Edison Barbieri, Alessandra Maria Tegon Ferrarini, Karina, F. O. Rezende, Diego S.T. Martinez, Oswaldo Luiz Alves, (Instituto de Pesca, Brazil)

Session 5.3: Safe use of nano objects for medicine applications

S5.3-P1 Graphene oxide and 6 arm-poly(ethulene glycol) amine polymeric film: adherence and growth of adipose-derived mesenchymal stromal cells (ADMSC) culture on rat bladder

Nelson Durán, Marcela Durán, Angela C.M. Luzo, Adriana S. S. Duarte, Bruno B. Volpe, Helder J. Ceragioli, Patricia F. Andrade, Joel G. De Souza, Wagner J. Fávoro, (Urogenital Carcinogenesis: *Urogenital* and Immunotherapy Lab Inst. Biology, University of Campinas, Brazil), (NanoBioss, Institute of Chemistry, UNICAMP, Brazil)

S5.3-P2 The investigation of nanosilver as a replacement antibiotic in aquaculture

Tayyaba Bibi, Michelle Giltrap, Gordon Chambers, (Nanolab, Focas Institute, Dublin Institute of Technology - DIT, Ireland)

S5.3-P3 Investigation of iron oxide nanoparticles effects on macrophages in the frame of a metal-activated radiotherapy scheme

Bastien Dalzon, Catherine Aude-Garcia, Thierry Rabilloud, (CEA – Grenoble, France)

Session 6: Regulation / Standardization

S6-P1 Current safety practices in two nanotechnology research labs in Iran

Medhi Jahangiri, S. J. Shahtaheri, (Department of Occupational Health, School of Health, Shiraz University of Medical Sciences, Iran)

S6-P2 A new approach on nanosafety: assessing the value chain of nanoproducts manufactured in Brazil

Andre Luiz Meira De Oliveira, Leandro Antunes Berti, Carlos Roberto De Rolt, (CERTI Foudation, Campus Universitário UFSC, Brazil), (LabGES, ESAG/UDESC, Brazil)

S6-P3 Mapping nanomedicine terminology in the regulatory landscape

Laia Quiros Pesudo, Alexandra Balahur, Gerhard Wagner and Susanne Bremer-Hoffmann, (JRC Directorate F – Health, Consumer and Reference Materials. F.2 Consumer Product Safety, Italy)

Panel Discussions

Nanomedicine: Benefit / Risk



Chair : Claude EMOND

University of Montreal, Canada

Nanomedicine is a growing part of nanotechnology, who over the past 10 years has promised to add a new motivation to the diagnostics and therapeutics of a wide range of human pathologies including cancer, cardiovascular diseases and diseases of the central nervous system. As any other technology, we can enumerate advantage and potential risk using it. Over this round table, we will try to understand some of the most convincing problems related to the nanopharmacology and nanotoxicology of nano-materials. To process, the coordinator will introduce the topic provoking the debate about the dichotomy of the benefit and the potential risk introduced by nanomaterials in the organism. After that, the coordinator will ask 4 questions to the expert panel related to these subjects. The objective of this round table is to discuss about using nanomaterial in medicine in the context of risk characterization.

Day: Tuesday, 8th November, 2016

Room: Chrome 5 / 5:30pm - 6:30pm

Urban particles mitigation: What is reasonably possible?



Chair : Alexandre THOMASSON

ATMO Auvergne-Rhône-Alpes (French network for air quality Survey), France

Introduction

Atmospheric particles pollution – Context, Issues and Implications
What is the situation in France, Rhône-Alpes and Grenoble region?
Alexandre Thomasson [10min]

Monitoring of fine and ultrafine urban particles

What are the instrumentation for monitoring? (mass, number, size, chemical characterization...) - How do we measure UFP in France? - What are the results? [15min]

Health impact

What is the health impact of urban particles pollution? What about nanoparticles? - What are the best indicators to be measured for health assessment? - What about the “oxidative potential” of PM? - What are the public's questions? [15min]

Mitigation solutions

What is reasonably possible for reducing particles pollution? - What are the sources? What are the action levers? - What are the mitigation solution today? - What actions can be implemented by policy makers? [15 min]

Conclusion [5 min]

Day: Wednesday, 9th November, 2016

Room: Chrome 5 / 9:00am - 10:00am

Responsible Development

Chair : Nayla FAROUKI

CEA, France

Three questions about nanosafety topics in relation to responsible innovation in the development of nanomaterials :

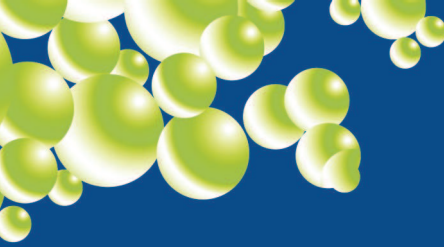
-According to you, what is a “Nanoresponsible Development”?

-What is the broad assessment of nanosafety regulations as introduced by law or otherwise, in France and elsewhere in the world? Have the objectives been attained? What are the major advancements or hindrances for R&D in relation to these regulations?

-How to interpret the notion of "responsible development of nanomaterials" in research and industry? How to assess day-to-day responsibility on the part of researchers and developers, in relation to social, economic, and industrial challenges?

Day: Thursday, 10th November, 2016

Room: Chrome 5 / 10:30am - 12:00pm



Satellite Meetings

NANOSTREEM // Project Coordinator: Dimiter PRODANOV (IMEC, Belgium)



Day: Thursday, 10th
2:00pm– 5:00pm

Room: Chrome 5, level 1

The overall objective of NanoStreeM (NANOmaterials: STRategies for Safety Assessments in advanced Integrated Circuits Manufacturing)European project is to support and coordinate activities in relation to research and development of novel nanoscale or nanofunctionalized materials enabling further increase of semiconductor manufacturers' productivity and innovation. The project proposal addresses the ICT call 25 section c) *“International cooperation with USA and Asia in the areas of standardization including in manufacturing (450 mm wafers); improved assessment of the potential impact on workers of the manipulation of nano-materials in the semiconductor fabrication process.*

The project consortium therefore sets forth the following high level objectives:

1. Assembling inventories of materials, research topics and directions relevant for nanomaterial use and exposure in nano- electronics manufacturing.
2. Identifying gaps in the knowledge available to the semiconductor industry and the methodologies of risk assessment of nanomaterials (either engineered an purposefully used or incidentally released) during manufacturing.
3. Usage of obtained results for better risk governance, dissemination and outreach.

NANOMET // LNE Coordinator: Nicolas FELTIN - CEA Coordinator: Sebastien ARTOUS



Day: Thursday, 10th
8:00am– 12:00pm

Room: Palladium 2, level 0

During the last decade, advances in nanotechnology offered major opportunities in terms of industrial growth and new applications. Nevertheless, this growth faces a transfer of these technologies from the laboratory scale towards industry production scale with, in the same time, the challenge to succeed in addressing occupational and societal issues on nanomaterials.

The French national project “Nanomet” aims to improve the industrial feasibility of the nanomaterials production by making available to SMEs affordable and more reliable, reproducible and “friendly to use” methodological tools for the metrological characterisation of nanomaterials. This workshop presents the main results of this project.

Pay attention, this workshop will be done in French language.

Satellite Meetings

LabEX SERENADE // Project Coordinator: Jérôme ROSE (CEREGE-CNRS)

NanoID // Project Coordinator: Delphine BOUTRY (CEA)



LabEx SERENADE (Laboratory of Excellence for Safe(r) Ecodesign Research and Education applied to Nanomaterial Development) is a **Safer by Design project**. It creates a dynamic network of academic research laboratories and industry to design tomorrow's nanomaterials that are safe for both humans and the environment. The Labex leads both research and education programs to fulfill three main goals:

- to develop products made of nanomaterials or nanostructured materials incorporating socio-environmental constraints (exposure and risk) throughout the life cycle,
- to design and optimize parameters controls that allow companies placing their products in the market,
- to develop innovative processes about products end of life: recycling, wastes, effluents and superficial waters treatment.

NanoID (Nanoparticle IDentification) is a French platform including 5 Equipment of Excellence able to detect nanoparticles and identify their chemical nature in complex matrices (protective equipment, workstations, waste water treatment plants, biological environments, plants, food, construction materials...). After 2 years of equipment optimization, this platform is now open to laboratories and manufacturers engaged in nanosafety. The EquipEx fulfills 3 main goals:

- to facilitate research programs in the field of nanosafety in France and also abroad,
- to strengthen the scientific position of national research in nanosafety,
- to contribute to responsible development of nanomaterials industry in France.

Day: Thursday, 10th - 2:00pm – 5:00pm

Room: Chrome 1, level 1

GUIDENANO // Project Coordinator: Socorro VÁZQUEZ-CAMPOS (LEITAT)

A Tool for the Risk Assessment of nano-enabled products: **GUIDEnano Tool**



Day: Thursday, 10th

8:00am – 12:00pm

Room: Chrome 1, level 1

GUIDEnano project's main objective is to develop a web-based guidance Tool that helps the nano-enabled product developers and users to design and apply the most appropriate risk assessment and mitigation strategies for the safety assessment of these products. The tool guides the user through the entire life cycle of the nano-enabled product to provide the most precise insight that can be reached today on the potential risks entailed by nano-enabled products.

This workshop will focus on the presentation of **GUIDEnano Tool v2** to stakeholders: showing all the parameters, modules and data sources as the basis for evaluating risks associated to nano-enabled products along their life cycle. The workshop is especially relevant for industrials working with nano-enabled products interested in a risk-assessment tool to assess the risks associated with their products, including proposals for their mitigation (risk mitigation strategies).

GUIDEnano, a project funded from the European Union's 7th Framework Programme (FP7/2007-2013) under the grant agreement n° 604387.

NANOSAFETY CLUSTER

**NanoSafety
Cluster**



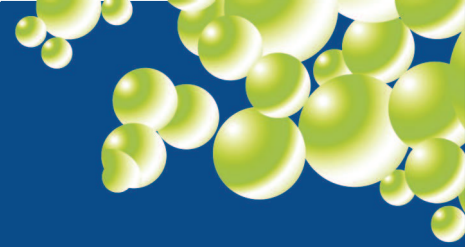
Day: Wednesday, 9th
2:00pm– 6:30pm

Room: Titane 2, level 0

The EU NanoSafety Cluster maximises the synergies between European-level projects addressing the safety of materials and technologies enabled by the use of nanoparticles. The studied aspects include toxicology, ecotoxicology, exposure assessment, mechanisms of interaction, risk assessment and standardisation.

The Cluster is an initiative of the European Commission Directorate-General for Research and Innovation (DG RTD), which sponsors these large projects. Overall, Europe targets safe and sustainable nanomaterials and nanotechnology innovations. Cluster projects contribute to assuring environmental health and safety (EHS) of this Key Enabling Technology.

Practical Information



For its fifth edition, Nanosafe Conference is happy to welcome you to the Maison MINATEC, Grenoble - France.

Maison MINATEC
Parvis Louis Néel
38054 Grenoble Cedex 9

THE CONFERENCE

Beginning: Monday 7th of November - 1:30 pm
End: Thursday 10th of November - 2:00 pm

BADGES

Upon check-in, you will receive a personalized name badge. It must be clearly visible throughout the conference period and it enables you to access all conference areas as well as coffee breaks and lunches.

POSTERS

Posters will be on display for the entire 4-days conference, at Level 0:

- All posters must be set up on Monday 7th, November
- Presenters must take their posters down by 4:00 on Thursday 10th, November

You will find material at the reception desk of the conference in order to install your posters.

LUNCH BREAKS

Lunch will be served at Level 0, at the poster area

- Tuesday 8 November: 12:30 pm - 2:00 pm
- Wednesday 9 November: 12:30 pm - 2:00 pm
- Thursday 10 November: 1:00 pm - 2:00 pm

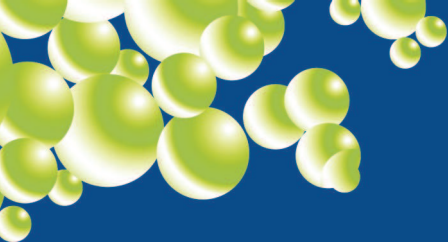
COFFEE BREAKS

Coffee breaks will be served at Level 0, at the poster area

- Every morning: 10:00 am - 10:30 am
- Every afternoon: 4:00 pm - 4:30 pm

INTERNET ACCESS

Free Wi-Fi will be available in all areas during the 4-days Conference
Wi-Fi code will be available at the registration desk



Practical Information

ELECTRONIC BOOK OF ABSTRACTS



Along with your badge, you have been given your attendee bag and a memory stick.

The Local Organizing Committee promotes responsible development. This is why, for the second edition, you will find a lot of information in relation with the conference on a memory stick:

- A digital version of this programme
- The Nanosafe 2016 Book of Abstracts

GALA DINNER

For this edition, a Gala Dinner will be held at LA BASTILLE, in the heart of Grenoble.

LA BASTILLE is a small fortified mountain located at the crossroad of three valleys, served by the first urban cable-car in the world. In a few minutes, days and night, the famous “bubbles” of Grenoble take you in the air from the center of the town up to the Bastille fortress.

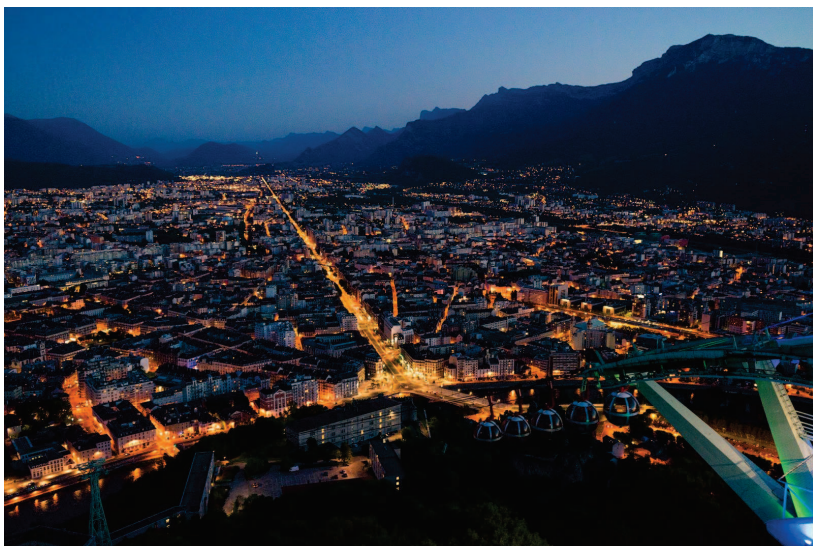
We offer you a never to be forgotten experience: the impressive panorama on the mountain chains and the town at your feet, the unique atmosphere of the stone walls, the privileged surrounding of a well preserved and pleasantly fitted fortress.

A buffet will be served and some performances will be planned.

Please note that cable-car transfer will be organized between 7 pm and 8 pm.



Photo credit: Pierre JAYET / CEA



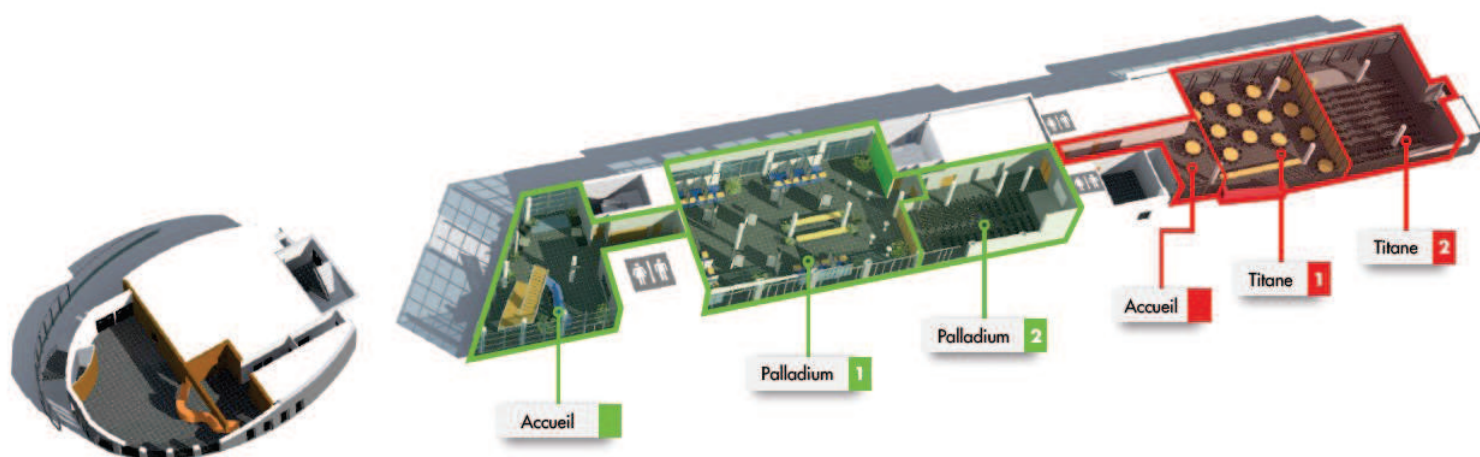
At your conference arrival, you have been given an invitation card with an access map to LA BASTILLE.

Photo credit: Pierre JAYET / CEA

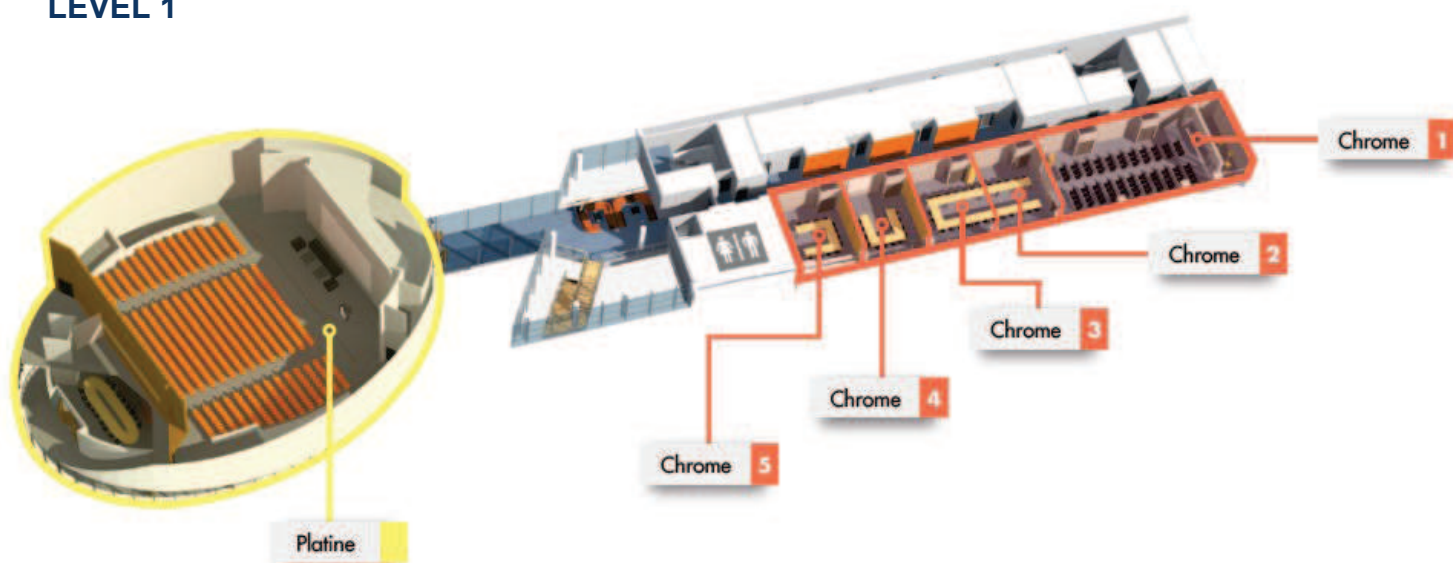
Practical Information

VENUE MAP

LEVEL 0



LEVEL 1





Partners

The Nanosafe 2016 local organizing committee acknowledges the contribution of :

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UNDERSTANDING, ACCELERATED



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