



PROGRAMME

Monday 15 November

18:00-20:00: Registration

Tuesday 16 November

MINATEC AUDITORIUM

Conference opening

(Chair: Georgios Katalagarianakis)

- 8:30-8:50 Welcome by the Organizing Committee
- PL0a**
8:50-9:15 Nanotech's evolving environmental, health and safety landscape: the regulations are coming.
Jurrón Bradley (*Lux Research, U.S.A.*)
- PL0b**
9:15-9:40 Coordination and collaboration in European research for safe nanomaterials.
Michael Riediker (*Institute for work and Health, Switzerland*)
- PL0c**
9:40-10:05 French Public Debate on Nanotechnologies – Conclusion(s) and Perspectives.
Eric Gaffet (*CNRS, France*)
- PL0d**
10:05-10:30 Nanomaterials, human health hazard and new challenges.
Yuguo Song (*University of Beijing, China*)
- 10:30-11:00 Coffee break

Session 1: Exposure assessment

(Chair: Michael Ellenbecker)

1a. Occupational exposures

- PL1**
11:00-11:40 Exposure assessment for engineered nanoparticles: A review of the current state-of-the-art.
Michael Ellenbecker (*University of Massachusetts Lowell, U.S.A.*)
- O1a-1**
11:45-12:00 Workplace air measurements and likelihood of exposure to manufactured nano objects; condensed results of the NANOSH project.
Derk Brouwer, B. van Duuren-Stuurman, M. Berges, C. Moehlmann, J. Pelzer, E. Jankowska, D. Bard, D. Mark (*TNO Quality of Life, The Netherlands*)
- O1a-2**
12:00-12:15 Regulating uncertainty - Performance based benchmark limits for nanoparticles in view of current measurement results at the workplace.
Markus Berges, C. Möhlmann, J. Pelzer (*DGUV – IFA, Germany*)
- O1a-3**
12:15-12:30 Visualisation of exposure to nanoparticles using PIMEX.
Koen Verbist, P. Beurskens (*Arbo Unie, The Netherlands*)
- O1a-4**
12:30-12:45 Measure and characterization of manufactured nanoparticles in workplace air.
Catherine Durand (*CEA, France*)
- O1a-5**
12:45-13:00 Exposure measurements from the paint factory powder mixing stations.
Ismo K. Koponen, K. Jensen (*NRCWE, Denmark*)
- 13:00-14:30 Lunch

Session 2: Characterization, Detection and Monitoring

(Chair: David Y.H. Pui)

2a. Detection in air

- PL2**
14:30-15:10 Nanoparticle characterization, exposure assessment and filtration to support sustainable nanotechnology.
David Y. H. Pui (*University of Minnesota, U.S.A*)
- O2a-1**
15:15-15:30 Direct quantification of airborne nanoparticles composition by TXRF after collection on filters.
Sylvie Motellier, K. Lhaute, A. Guiot, L. Golanski, C. Geoffroy, F. Tardif (*CEA, France*)
- O2a-2**
15:30-15:45 Using the Aerasense nanotracer for simultaneously obtaining several ultrafine particle exposure metrics.
Johan Marra (*Philips Research Laboratories, The Netherlands*)
- O2a-3**
15:45-16:00 Study of nanoparticle collection efficiency of an aspiration-based TEM (Transmission Electron Microscopy) sampler.
Badr R'milj, O. Le-Bihan, O. Aguerre-Chariol, C. Dutouquet, E. Frejafon (*INERIS, France*)
- O2a-4**
16:00-16:15 Specific detection of engineered nanoparticles using catalysis.
Nicole Neubauer, F. Weis, M. Seipenbusch, G. Kasper (*KIT, Germany*)
- O2a-5**
16:15-16:30 Airborne nanoparticle detection by sampling on filters and laser-induced breakdown spectroscopy analysis - Application to workplace safety.
P. Dewalle, Jean-Baptiste Sirven, A. Roynette, F. Gensdarmes, L. Golanski, S. Motellier (*CEA, France*)
- 16:30-17:00 Coffee break

Session 3: Nanomaterials life cycle

(Chair: Bernd Nowack)

- PL3**
17:00-17:40 Modeling environmental exposure to engineered nanomaterials based on nano-product life-cycles.
Bernd Nowack (*Empa, Switzerland*)
- O3-1**
17:45-18:00 Aging of CeO₂ nanocomposites used as out-door wood paint adjuvant. Fate of the byproducts formed in aqueous suspension.
Marie-Ange Diot, J. Rose, J. Labille, W. Liu, J.-Y. Bottero, O. Proux, F. Ziarelli, M. Guiliano, C. Geantet (*CEREGE, France*)
- O3-2**
18:00-18:15 Nanowastes: Risk assessment from the end-of-life combustion of nanomaterials.
J.X. Bouillard, A. Vignes, B. Rmili, D. Moranviller, Dominique Fleury, O. Le Bihan, E. Frejafon (*INERIS, France*)
- 19:00-21:00 Poster session – Evening event

ROOM B**Session 12: Satellite meetings***(Chair: Aurélien Auger)***12a. Labelling, imaging and biodistribution of nanoparticles *in vivo***

- O12a-1** 11:45-12:10 Nano-silicon dioxide toxicological characterization on two human kidney cell lines.
Vincent Paget, J.-A. Sergent, S. Chevillard (*CEA, France*)
- O12a-2** 12:10-12:35 Synthesis of ¹⁴C-Labelled Carbon Nanotubes for *in vivo* biodistribution studies.
Mathieu Pinault, S. Habib, D. Georgin, F. Taran, B. Czarny, B. Bouchet-Fabre, M. Carriere, J.-L. Poncy, R. Maximilien, V. Dive, M. Mayne L'Hermite, C. Reynaud (*CEA, France*)
- 12:35-13:00 Discussion
- 13:00-14:30 Lunch

Session 1: Exposure assessment*(Chair: Olivier Le Bihan)***1b. Environmental exposures**

- O1b-1** 15:15-15:30 Human exposure to lifestyle-related ultrafine particles in domestic environment.
Xiaolin Ji, C. Mandin, O. Le Bihan, O. Ramalho, L. Martinon, J. Larbre, D. Bard, J.-C. Pairon (*INERIS, France*)
- O1b-2** 15:30-15:45 The use of "conventional" exposure models for nanomaterials.
Rianda Gerritsen-Ebben, D. Brouwer, B. van Duuren-Stuurman, G. Uzu, M. van Tongeren, F. Christensen (*TNO Quality of Life, The Netherlands*)
- O1b-3** 15:45-16:00 Mobility vs. deposition of TiO₂ nanoparticles in a natural sandy porous media. Effect of aggregation and natural organic matter.
Natalia Solovitch-Vella, J. Labille, J. Rose, P. Chaurand, D. Borschneck, A. Masion, M.R. Wiesner, J.-Y. Bottero (*CEREGE, France*)
- O1b-4** 16:00-16:15 Characterization of a multiculture *in vitro* cell exposure chamber for assessing the biological impact of diesel engine exhaust.
Akrivi Asimakopoulou, L. Chasapidis, T. Akritidis, M. Daskalos, E. Papaioannou, N.D. Vlachos, A.G. Konstandopoulos (*CPERI/CERTH, Greece*)
- O1b-5** 16:15-16:30 Workplace exposure to traffic-derived nanoscaled particulates.
Mar Viana, S. Díez, A. Alastuey, X. Querol, C. Reche, (*IDAEA-CSIC, Spain*)
- 16:30-17:00 Coffee break

Session 2: Characterization, Detection and Monitoring

(Chair: Jacques Vendel)

2a. Detection in air

- O2a-6**
17:45-18:00 Measuring levels of ultrafine particle concentrations in residential environment - Nanop projet.
Xiaolin Ji, O. Le Bihan, C. Mandin, O. Ramalho, L. Martinon, J. Larbre, D. Bard, J.-C. Pairon (*INERIS, France*)
- O2a-7**
18:00-18:15 An electrical sensor for long term monitoring of ultrafine particles in workplaces.
Juha Tikkanen, M. Lehtimäki, T. Lankia, K. Janka (*Navaro Oy, Finland*)
- O2a-8**
18:15-18:30 Powder suspending system by vortex effect.
Aurélien Ustache, S. Thévenet, M. Morgeneyer, O. Aguerre-Chariol, O. Le Bihan (*INERIS, France*)
- O2a-9**
18:30-18:45 Detection of airborne micrometric-sized CNT (Carbon NanoTubes) bundles using TEM (Transmission Electron Microscopy) samplers and LIBS (Laser-Induced Breakdown Spectroscopy).
Badr R'mili, C. Dutouquet, J.B. Sirven, O. Aguerre-Chariol, E. Frejafon (*INERIS, France*)
- 19:00-21:00 Poster session – Evening event

ROOM C**Session 12: Satellite meetings***(Chair: Kai Savolainen)***12b. NANODEVICE: Impact on safety of nanotechnologies**

- O12b-1**
15:15-15:35 Assuring impact of the NANODEVICE project on the evaluation and measurement of occupational exposure to and prevention of health risks from exposure to nanoparticle aerosol.
Kai Savolainen (*FIOH, Finland*)
- O12b-2**
15:35-15:45 Impact through workplace exposure assessment.
Ismo K. Koponen (*NRCWE, Denmark*)
- O12b-3**
15:45-15:55 Capacity building in safe nanotechnologies.
Markus Keller (*Fraunhofer, Germany*)
- O12b-4**
15:55-16:15 Assessing occupational health risks from exposure to aerosol nanoparticles by using a Bayesian network model.
Qinglan Wu, S. Marion, B. Chin, P. Friis Hansen (*DNV, Norway*)
- O12b-5**
16:15-16:30 Influence on nanosafety through standardization activities – workpackage 17.
Stefan Engel (*BASF, Germany*)
- 16:30-17:00 Coffee break

Session 12: Satellite meetings*(Chair: Stefan Engel)***12b. NANODEVICE: WP17 Workshop**

- O12b-6**
17:45-18:00 Presentation of the WP17 pilot project: Draft SOP for Portable Samplers.
Robert Muir, Harald Gnewuch (*UK*)
- 18:00-18:55 Panel discussion with 4 panelists.
- 18:55-19:00 Wrap-up.
- 19:00-21:00 Poster session – Evening event.

Posters session

19:00-21:00

- P1a-1** Onsite aerosol measurements for various engineered nanomaterials at industrial manufacturing plants.
Isamu Ogura, H. Sakurai, M. Gamo (*AIST, Japan*)
- P1b-1** Stoffenmanager nano 1.0: an online control banding tool for the prioritization of risks related to working with manufactured nano objects.
Maikel van Niftrik, K. Verbist (*TNO Quality of Life, The Netherlands*)
- P1b-2** Potential for exposure during bagging operations in a plant that produces both pigment grade TiO₂ and nano-TiO₂ as powders.
Olivier Witschger, R. Wrobel, B. Bianchi, S. Bau (*INRS, France*)
- P1b-3** Effects of physicochemical properties of zinc oxide nanoparticles on cellular uptake.
Jin Yu, M. Baek, H.-E. Chung, S.-J. Choi (*Seoul Women's University, South Korea*)
- P2a-1** CAIMAN: A versatile facility to produce aerosols of nanoparticles.
J. Jacoby, Sébastien Bau, O. Witschger (*INRS, France*)
- P2a-2** Response of three instruments devoted to surface-area for monodisperse and polydisperse aerosols in molecular and transition regimes.
Sébastien Bau, O. Witschger, F. Gensdarmes, D. Thomas (*INRS, France*)
- P2b-1** Agglomeration and sedimentation of TiO₂ nanoparticles in natural waters.
Markus Sillanpää, T.-M. Paunu, P. Sainio (*Finnish Environment Institute, Finland*)
- P2c-1** Properties of magnetic iron oxides used as materials for waste water treatment.
Ecaterina Matei, A. Predescu, L. Vladutiu, A. Predescu (*Politehnica University of Bucharest, Romania*)
- P2c-2** Synthesis of mesoporous carbon *via* sol-gel process using resorcinol and formaldehyde.
Younes Moussaoui, S. Nouri, E. Elaloui, R. ben Salem (*Science Faculty of Sfax, Tunisia*)
- P2c-3** A DFT study of substrate effect on the magnetism of V(001) surface: For applications in spintronics.
Amal A. Ramanathan, J.M. Khalifeh, B.A. Hamad (*University of Jordan, Jordan*)
- P2c-4** *Ab initio* characterization of the Nb and Ta(001) clean surfaces.
Amal A. Ramanathan (*University of Jordan, Jordan*)
- P2c-5** Bacterial remediation from effluent containing multi-walled carbon nanotubes.
A.P. Lemes, L. Cordi, A. dos Santos, Nelson Durán (*UNICAMP, Brazil*)
- P2c-6** Influence of temperature and ambient on particle size, blocking and vermey temperature of magnetite nanoparticles.
Younes Amini, E. Marzbanrad, M. A. Bahrevar, C. Zamani (*Materials and Energy Research Center, Iran*)

- P3-1** Hydrotalcites: a highly efficient ecomaterial for effluent treatment originated from carbon nanotubes chemical processing.
Oswaldo Luiz Alves, N.V. Parizzoto, D. Stéfani, A.G. Souza Filho (*UNICAMP, Brazil*)
- P4a-1** *In vivo* toxicity evaluation of single-walled carbon nanotubes on zebrafish embryos.
Cheng-Chung Chou, H. Pan, Y-J Lin, M-W Li, H-N Chuang (*National Chung Cheng University, Taiwan*)
- P4a-2** Synergistic action of metal oxide nanoparticles and colchicine on mitotic index in fish thymus *in vivo*.
Eugene Krysanov, T. Demidova (*Institute of Ecology and Evolution, Russia*)
- P4a-3** Nanoparticles in treatment of thermal injured rats: is it safe?
P.S. Melo, P.D. Marcato, S.C. Hubes, I.R. Ferreira, L.B. De Paula, A.B.A. Almeida, N. Durán, A.S.N. Torsoni, Amedea B. Seabra (*UNICAMP, Brazil*)
- P4a-4** Assessment of dermal exposure and histopathologic changes of different sized nano-silver in healthy adult rabbits.
M.K. Koochi, F. Asadi, Marzie Hejazy (*University of Tehran, Iran*)
- P4b-1** Characterizing the interactions CeO₂ nanoparticles-protein.
Wei Liu, M. Sassine, A. Hagège, C. Almunia, J. Rose, C. Vidaud (*CEREGE, France*)
- P4b-2** Zirconium dioxide release from nanopowders in saline.
Evgenia Arzamastseva, A. Godymchuk, E. Yunda (*Tomsk Polytechnic University, Russia*)
- P4b-3** Factors influencing the cytotoxicity of zinc oxide nanoparticles: particle size and surface charge.
Miri Baek, J. Yu, H-E Chung, S-J Choi (*Seoul Women's University, South Korea*)
- P4b-4** Interactions between iron oxide nanoparticles and human lymphoblastoid cells studied by flow cytometry.
Malak Safi, V. Garnier-Thibaud, A. Galimard, M. Seigneuret, H. Conjeaud, J-F. Berret (*University Paris Diderot, France*)
- P4b-5** Glutathione and s-nitrosoglutathione in alginate/chitosan nanoparticles: cytotoxicity.
P.D. Marcato, L.F. Adami, P.S. Melo, Amedea B. Seabra, N. Durán (*UNICAMP, Brazil*)
- P4b-6** Cytotoxicity effects of oxido-metallic nanoparticles in human tumor cell lines.
Tamara Lozano, M. Rey, S. Moya, E. Donath, C. Gao, A. Antipov, Á. González-Fernández (*University of Vigo, Spain*)
- P4b-7** Physico-chemical characteristics and cyto-genotoxic potential of ZnO and TiO₂ nanoparticles on human colon carcinoma cells.
Flavia Barone, B. De Berardis, L. Bizzarri, P. Degan, C. Andreoli, A. Zijno, I. De Angelis (*Istituto Superiore di Sanità, Italy*)

- P4b-8** Evaluation of in vitro toxicity of biopolymer coated PbSe nanoparticles.
Aswathy Ravindran Girija, S. Veerananarayanan, Y. Yoshida, T. Maekawa, D. Sakthi Kumar (*Toyo University, Japan*)
- P4b-9** Translocation of TiO₂ nanoparticles through a Caco-2 gastrointestinal epithelium.
Emilie Brun, M-L Jugan, N. Herlin-Boime, D. Jaillard, B. Fayard, A-M Flank, M. Carrière (*CEA, France*)
- P4b-10** Cytotoxic potency of nickel(II) oxide depending on its particle size: a study of CHO and A549 cells.
Lidia Zapor, E. Dobrzyńska (*Central Institute for Labour Protection, Poland*)
- P4b-11** Synthesis of greener quantum dots and study of nano-cytotoxicity *in vitro*.
Srivani Veerananarayanan, A. Ravindran Girija, A. Cheruvathoor Poulouse, Y. Yoshida, T. Maekawa, D. Sakthi Kumar (*Toyo University, Japan*)
- P4b-12** Impact of degraded titanium and cerium oxides nanoparticles on a model of human intestinal barrier.
M. Fisichella, G. Steinmetz, F. Bérenguer, J. Rose, O. Prat (*CEA, France*)
- P4b-13** Functional-dependent and size-dependent uptake of nanoparticles in PC12.
Nobumitsu Sakai, Y. Matsui, A. Nakayama, A. Tsuda, M. Yoneda (*Kyoto University, Japan*)
- P4b-14** Assessment of phototoxicity, skin irritation, and sensitization potential of polystyrene and TiO₂ nanoparticles.
Y-H Park, S.H Jeong, E.Y. Lee, S.M. Yi, J.E. Choi, M-K Kim, Sang Wook Son (*Korea University College of Medicine, South Korea*)
- P4b-15** Relationship between surface modifications of nanoparticle and invasion into suspension cells.
Yasuto Matsui, N. Sakai, A. Tsuda, N. Yoneda (*Kyoto University, Japan*)
- P4c-1** Development of innovative pH sensor to evaluate phagocytosis of nanoparticles.
Lara Leclerc, D. Boudard, J. Pourchez, L. Marmuse, C. Louis, S. Palle, P. Grosseau, D. Bernache, M. Cottier (*École Nationale Supérieure des Mines, France*)
- P4d-1** The effects of engineered nanoparticles on survival, reproduction, and behaviour of freshwater snail, *Physa acuta* (Draparnaud, 1805).
Lucky M. Sikhwivhilu, N. Musee, P. J. Oberholster, A.-M. Botha (*Nanotechnology Innovation Centre, South Africa*)
- P4d-2** Biological assessment of MWCNTs-incorporated cyclodextrin polymers and phosphorylated MWCNTs in the aquatic environment.
Dumsile W. Nyembe, B.B. Mamba, V. Wepener, N. Musee (*University of Johannesburg, South Africa*)
- P4d-3** Acute toxicity of fresh and used engine oil enriched with copper nano particles in the earthworm.
Mahdi Khodabandeh, G. Sadeghi-Hashjin, M.K. Koochi, A. Roshani, J. Malakootikhah, E. Shahroziyan, B. Badri, A. Pourfallah, Gh. Shams (*University of Tehran, Iran*)

- P5-1** Nanosized aluminosilicates: what is the difference between imogolite and allophane ?
C. Levard, Armand Masion, J. Rose, E. Doelsch, F. Ziarelli, D. Borschneck, A. Thill, P. Maillet, J.Y. Bottero (*CEREGE, France*)
- P5-2** Highly porous nanocomposites based on TiO₂-noble metal particles for sensitive detection of water pollutants by SERS.
M. Baia, M. Popa, C. Cotet, G. Melinte, L. Baia, V. Iancu, V. Danciu, S. Astilean (*Babes-Bolyai University, Romania*)
- P5-3** Immunotoxicity of TiO₂ nanoparticles on earthworm's coelomocytes (*E.fetida*) using an *in vitro* approach.
Emilie Bigorgne, A. Dagtekin, F. Rodius, J. Falla, C. Caillet, F. Thomas, J. Nahmani, L. Foucaud (*Université Paul Verlaine Metz, France*)
- P5-4** Application of the direct estimation of ecological effect potential (DEEEP) approach as a first tier tool for the ecological hazard assessment of metal nanoparticles.
Lungile P. Lukhele, B.B. Mamba, V. Wepener, M. Ndeke (*University of Johannesburg, South Africa*)
- P9-1** Challenges in assessing the environmental fate and exposure of nanosilver.
Cherrie Whiteley, M. Dalla Valle, A.J Sweetman, K.C Jones (*Lancaster University, UK*)
- P9-2** Survey of current safety practices in two nanotechnology research labs in Iran.
Medhi Jahangiri, S.J. Shahtaheri, J. Adl, H. Kakooe (*Tehran University of Medical Sciences, Iran*)
- P10-1** Nano-Evaluris: A risk evaluation method for nanoparticle use *via* a control banding approach. Application to industrial systems.
Jacques X. Bouillard, A. Vignes (*INERIS, France*)
- P11-1** Re-examination of safety parameters using kinetic theory of nano-granular flows.
Jacques X. Bouillard, P. Marchal, F. Henry, A. Vignes, O. Dufaud, L. Perrin, E. Plasari (*INERIS, France*)
- P12b-1** NANODEVICE: Novel concepts, methods and technologies for the production of portable, easy-to-use devices for the measurement and analysis of airborne engineered nanoparticles in workplace air.
Sari Sirviö, K. Savolainen (*Finnish Institute of Occupational Health, Finland*)

Wednesday 17 November

MINATEC AUDITORIUM

Session 4: Toxicology

(Chair: Günter Oberdörster)

4a. *In vivo* studies

- PL4**
8:30-9:10 Nanotoxicology: need for a science based analysis.
Günter Oberdörster (*University of Rochester, U.S.A.*)
- O4a-1**
9:15-9:30 Nanoparticle transport across the human placenta.
Jean-Pierre Kaiser, A. Malek, H.F. Krug, U. von Mandach, P. Wick (*Empa, Switzerland*)
- O4a-2**
9:30-9:45 Prenatal exposure to rutile type and its surface-coated titanium dioxide impairs spermatogenesis in mice.
H. Uchida, Y. Yoshida, K. Suzuki, M. Kubo-Irie, Y. Shinkai, S. Oshio, K. Takeda (*Tokyo University of Science, Japan*)
- O4a-3**
9:45-10:00 Modulation of asthmatic responses by nanoparticles in a mouse model of chemical-induced asthma.
S. Hussain, J.A.J. Vanoirbeek, K. Luyts, V. De Vooght, S. Boland, F. Marano, B. Nemery, Peter HM Hoet (*K.U. Leuven, Belgium*)

4b. *In vitro* studies

- O4b-1**
10:00-10:15 Antibacterial activity and toxicity of silver – nanosilver versus ionic silver.
Libor Kvitek, A. Panacek, R. Prucek, J. Soukupova, M. Vanickova, M. Kolar, R. Zboril (*Palacky University, Czech Republic*)

4c. New thinking approach

- O4c-1**
10:15-10:30 Development of prognostic occupational air standards for nanoparticles.
A.S. Radilov, Anzhela V. Glushkova, S.A. Dulov, N.S. Khlebnikova (*Federal Medical Biological Agency, Russia*)
- 10:30-11:00 Coffee break

Session 5: Environmental impact

(Chair: Jean-Yves Bottero)

- PL5**
11:00-11:40 Environmental impacts of nanomaterials: physico-chemical properties and mechanisms disturbing the biological activity in aqueous environment.
Jean-Yves Bottero (*CEREGE, France*)
- O5-1**
11:45-12:00 Investigation of titanium dioxide nanoparticles toxicity and uptake by plants.
C. Larue, H. Khodja, N. Herlin-Boime, F. Brisset, A.-M. Flank, B. Fayard, S. Chaillou, Marie Carrière (*CEA, France*)

- O5-2** 12:00-12:15 Effect of ZnO nano-particles on root exudates from pearl millet and clusterbean.
Uday Burman, J.C. Tarafdar, R.K. Kaul, M. Saini, K. Kumar, P. Kumar (*Central Arid Zone Research Institute, India*)
- O5-3** 12:15-12:30 Effects of ceria oxide nanoparticles in aquatic algae and invertebrates.
Nicolas Manier, M. Garaud, A. Gouron, P. Delalain, O. Aguerre-Chariol, P. Pandard (*INERIS, France*)
- O5-4** 12:30-12:45 Nanoparticles-pollutants cocontamination: is there a trojan horse effect?
Mélanie Auffan, J. Rose, L. Benameur, E.M. Hotze, A. Masion, J.-Y. Bottero, O. Proux (*CEREGE, France*)
- 13:00-14:30 Lunch

Session 6: Nanoparticles release from consumer products

(Chair: Tinh Nguyen)

- PL6** 14:30-15:10 Fate of nanoparticles during life cycles of polymer nanocomposites.
Tinh Nguyen (*NIST, U.S.A.*)
- O6-1** 15:15-15:30 Reproducing the use of a nanostructured product within an emission chamber: study of nanoparticle release.
L. Gheerardyn, Olivier Le Bihan, M. Morgeneyer (*INERIS, France*)
- O6-2** 15:30-15:45 Substantiation of low risk from nanocomposites: low release of micron-size hybrids, low hazard of inhalable fractions.
Wendel Wohlleben, S. Brill, M.W. Meier, M. Mertler, G. Cox, S. Hirth, B. von Vacano, M. Wiemann, L. Ma-Hock, R. Landsiedel (*BASF, Germany*)
- O6-3** 15:45-16:00 Characterization of abrasion-induced nanoparticle release from paints into liquids and air.
L. Golanski, A. Gaborieau, A. Guiot, G. Uzu, J. Chatenet, François Tardif (*CEA, France*)
- O6-4** 16:00-16:15 Environmental fate and impact of nano-residues from the degradation of commercialized sunscreens.
Jérôme Labille, C. Botta, P. Chaurand, M. Auffan, J. Garric, B. Vollat, P. Noury, K. Abbaci, A. Masion, J. Rose (*CEREGE, France*)
- O6-5** 16:15-16:30 New method to quantify silica nanoparticles accumulation on the surface of epoxy nanocomposites exposed to UV radiation.
Coralie Bernard, T. Nguyen, B. Pellegrin, J. Chin (*NIST, U.S.A.*)
- 16:30-17:00 Coffee break

Session 7: Commercial equipments related to safe production and use of nanomaterials

(Chair: Frédéric Schuster)

- 07-1** 17:00-17:15 Particle Measuring Systems: Portable Differential Mobility Analyzing System (DMAS) for *in-situ* aerosol characterisation.
B. Steer, B. Gorbunov, Robert Muir, A. Ghimire, J. Gromala (*Naneum, UK; Particle Measuring Systems, U.S.A.*)
- 07-2** 17:15-17:30 NANOSIGHT: The Characterization of nanoparticles by nanoparticle tracking and analysis.
Patrick Hole, J. Smith, B. Carr (*NanoSight Ltd., UK*)
- 07-3** 17:30-17:45 PHILIPS AERASENSE: Nanoparticle measurements with portable devices.
Willem van den Brink, H. Goossens, J. Marra, S. Kessels (*Philips Aerasense, The Netherlands*)
- 07-4** 17:45-18:00 Benchtop low voltage electron microscope combining 3 imaging modes TEM, SEM, STEM.
Benoit Maxit, Mathieu Legrand (*Cordouan Technologies, France*)
- 07-5** 18:00-18:15 Full characterization of nanoparticles and nanotubes using DLS.
Michel Terray, K. Mattison, M. Connah, M. Kaszuba (*Malvern Instruments, France*)
- 07-6** 18:15-18:30 Accurate measurement of nanoparticle charge, number and size with the ELPI + instrument.
Erkki Lamminen (*Dekati Ltd., Finland*)
- 07-7** 18:30-18:45 Comprehensive measurement of atmospheric aerosols with a wide range aerosol spectrometer.
Lothar Keck, M. Pesch, H. Grimm (*GRIMM Aerosol Technik GmbH & Co. KG, Germany*)
- 07-8** 18:45-19:00 A High Transmission Efficiency Centrifugal Particle Mass Analyser for Determination of Nanoparticle Mass and Morphology.
J. Symonds, Arnaud Noirtin, J. Olfert (*Intertek, France*)
- 19:30 Conference dinner at *La Bastille*.



Departure for the Conference dinner



ROOM B**Session 2: Characterization, Detection and Monitoring***(Chair: François Gendarmes)***2b. Detection in biomedica**

- O2b-1** Single particle ICPMS as a screening tool for nanoparticles.
9:15-9:30 Ruud Peters, E. Wijma, M. v.d. Lee, H. Bouwmeester (*RIKILT, The Netherlands*)
- O2b-2** *In vitro* characterization of magnetic iron oxide nanoparticles for the magnetic drug targeting therapy.
9:30-9:45 Nelica Ciobanu, F.G. Parak (*Technical University of Munich, Germany*)
- O2b-3** Development of a novel method to detect a potential inhalation of nanoaerosols.
9:45-10:00 Caroline Marie-Desvergne, F. Tardif, S. Motellier, V. Mossuz (*CEA, France*)
- O2b-4** Nanoparticle uptake, colocalization and toxicity assessment at single cell level by means of confocal Raman microscopy.
10:00-10:15 Irina Estrela, G. Romero, E. Rojas, E. Donath, S. E. Moya (*Leipzig University, Germany*)
- O2b-5** Nanoparticles in food - Analytical methods for detection and characterization.
10:15-10:30 Stefan Weigel, H. Bouwmeester, H. Marvin, R. Peters (*RIKILT, The Netherlands*)
- 10:30-11:00 Coffee break

Session 4: Toxicology*(Chair: Claude Emond)***4b. In vitro studies**

- O4b-2** Toxicity of silver nanoparticles in human macrophages: Uptake, intracellular distribution, oxidative stress, membrane lipid alterations and functional impairment.
11:45-12:00 Andrea Haase, J. Tentschert, H. Jungnickel, P. Graf, A. Manton, F. Draude, J. Plendl, M.E. Goetz, S. Galla, A. Mašić, A.F. Thuenemann, A. Taubert, H.F. Arlinghaus, A. Luch (*Federal Institute of Risk Assessment, Germany*)
- O4b-3** Interaction of nanoparticles used in medical applications with lung epithelial cells: uptake, cytotoxicity, oxidative stress and inflammatory response.
12:00-12:15 Rina Guadagnini, S. Boland, S. Vranic, K. Moreau, S. Hussain, A. Baeza, C. Borot, F. Marano (*University Paris Diderot, France*)
- O4b-4** *In vitro* cytotoxicity assays of solid lipid nanoparticles in epithelial cells.
12:15-12:30 D.M. Ridolfi, P.D. Marcato, D. Machado, R.A. Silva, G.Z. Justo, Nelson Durán (*UNICAMP, Brazil*)
- O4b-5** *In vitro* toxicity of magnetic nanorods.
12:30-12:45 Malak Safi, M. Yan, V. Garnier-Thibaud, J.-F. Berret (*University Paris Diderot, France*)

O4b-6 Effects of nanoparticules on murine macrophages.
 12:45-13:00 Mireille Chevallet, C. Aude-Garcia, C. Lelong, S. Candéias, S. Luche, S. Triboulet, D. Diallo, H Diemer, A. van Dorsselaer, T. Rabilloud (*CEA, France*)

13:00-14:30 Lunch

Session 4: Toxicology

(Chair: Peter Hoet)

4a. *In vivo* studies

O4a-4 Gene expression analysis in rat lungs after intratracheal exposure to nanoparticles doped with cadmium.
 15:15-15:30 T. Coccini, E. Roda, Marco Fabbri, M. Grazia Sacco, L. Manzo, L. Gribaldo (*European Commission, Joint Research Centre, Italy*)

O4a-5 The effect of carbon nanotubes on diatom growth.
 15:30-15:45 Kazuo Umemura, M. Hamada, Y. Yamada, T. Shiota, S. Ogasawara, S. Mayama (*Tokyo University of Science, Japan*)

4c. New thinking approach

O4c-2 Dispersion of nanoparticles in media of biological interest.
 15:45-16:00 Marie Carriere, A. Casanova, N. Herlin Boime (*CEA, France*)

O4c-3 A novel comprehensive evaluation platform to assess nanoparticle toxicity *in vitro*.
 16:00-16:15 C. Hirsch, Jean-Pierre Kaiser, F. Wessling, K. Fischer, M. Roeslein, P. Wick, H. Hofmann, H.F. Krug (*Empa, Switzerland*)

O4c-4 Nanoparticle toxicity and cancer.
 16:15-16:30 Thomas Prevenslik (*QED Radiations, China*)

16:30-17:00 Coffee break

Session 4: Toxicology

(Chair: Jean-Pierre Kaiser)

4b. *In vitro* studies

O4b-7 Interference between nanoparticles and metal homeostasis.
 17:45-18:00 Anne-Noëlle Petit, C.Aude Garcia, S. Candéias, A. Casanova, P. Catty, P. Charbonnier, M. Chevallet, V. Collin-Faure, M. Cuillel, T. Douki, N. Herlin-Boime, C. Lelong, S. Luche, E. Mintz, J.M. Moulis, V. Nivière, S. Ollagnier de Choudens, T. Rabilloud, J.-L. Ravanat, S. Sauvaigo, M. Carrière, I. Michaud-Soret (*CEA, France*)

O4b-8 Toxicity of nano- and micro-sized silver particles in human hepatocyte cell line L02.
 18:00-18:15 Pengpeng Liu, R. Guan, X. Ye, J. Jiang, M. Liu, G. Huang, X. Chen (*China Jiliang University, China*)

- O4b-9**
18:15-18:30 Influence of TiO₂ nanoparticles on cellular antioxidant defence and its involvement in genotoxicity in HepG2 cells.
Jana Petković (*National Institute of Biology, Slovenia*)
- O4b-10**
18:30-18:45 Cytotoxic and genotoxic effects of imogolite nanotubes towards human dermal fibroblasts and Chinese hamster ovary (CHO) cells.
Wei Liu, P. Chaurand, C. Di Giorgio, M. De Méo, A. Thill, M. Auffan, J. Rose, J.-Y. Bottero (*CEREGE, France*)
- O4b-11**
18:45-19:00 Novel food contact materials and the in vitro toxicity of low dose nano ZnO exposures to human intestinal cells.
Niall Ó Claonadh, A. Casey, G. Chambers (*Dublin Institute of Technology, Ireland*)
- 19:30 Conference dinner at *La Bastille*.

ROOM C**Session 12: Satellite meetings***(Chair: Robert Schaller)***12c. SAPHIR**

- O12c-1** 9:15-9:35 SAPHIR - European project: Safe, integrated and controlled production of high-tech multifunctional materials and their recycling.
Frédéric Schuster (CEA, France)
- O12c-2** 9:35-9:55 Monitoring of nano-objects.
Jean-Paul Dufour (CILAS, France)
- O12c-3** 9:55-10:10 Consolidating nanoparticles in micron sized granules using spray drying.
Jesper Sæderup Lindeløv, M. Wahlberg (GEA Niro, Denmark)
- O12c-4** 10:10-10:25 Spark plasma sintering of metal matrix nanocomposites.
G. Liu, Zhijian Shen, F. Guillard, B. Jancar, D. Mari, R. Schaller (Stockholm University, Sweden)
- 10:30-11:00 Coffee break

Session 12: Satellite meetings*(Chair: Frédéric Schuster)***12c. SAPHIR**

- O12c-5** 11:45-12:05 Polymer nanocomposites for automotive lighting systems, industrial issues: safety and cost-efficiency.
Sabino Sinesi, J.A. Bomfim, G. Campagnoli, A. Filipuzzi, I. Di Vora (CRP, Italy)
- O12c-6** 12:05-12:25 Nanoparticle risk management and cost evaluation: a general framework.
Dominique Fleury, S. Metz, J.A.S. Bomfim, J.X. Bouillard, J.-M. Brignon (INERIS, France)
- O12c-7** 12:25-12:40 Advanced injection moulded bipolar plates on the basis of CNT-containing carbon-polymer compounds.
Falko Mahlendorf, T. Derieth, M. Grundler (ZBT, Germany)
- O12c-8** 12:40-12:55 Mechanical spectroscopy of nanostructured composite materials.
Daniele Mari, M. Mazaheri, R. Schaller (EPFL, Switzerland)
- 13:00-14:30 Lunch

Session 2: Characterization, Detection and Monitoring*(Chair: Olivier Witschger)***2c. Characterization**

- O2c-1**
15:15-15:30 Gaseous effluents from the combustion of nanocomposites in controlled-ventilation conditions.
Didier Calogine, G. Marlair, J-P Bertrand, S. Duplantier, J-M Lopez-Cuesta, R. Sonnier, C. Longuet, B. Minisini, C. Chivas-Joly, E. Guillaume, D. Parisse (*INERIS, France*)
- O2c-2**
15:30-15:45 Synthesis, characterization and speciation of nanosilver: implications in ecotoxicological assays.
Glauciene P. S. Marcone, J. J. R. Rohwedder, A. Oliveira, W. F. Jardim (*UNICAMP, Brazil*)
- O2c-3**
15:45-16:00 On line characterization of SiC nanoparticles produced by laser pyrolysis.
Gaëtan Wattieaux, Y. Leconte, O. Sublemontier, N. Herlin, L. Boufendi, L. Meyer, P. Lecerf, A. Asimakopoulou, A. Tsakis, M. Daskalos, A. G. Konstandopoulos, F.-X. Ouf (*GREMI, France*)
- O2c-4**
16:00-16:15 Characterization of aerosol emitted by the combustion of nanocomposites.
Charles Motzkus, C. Chivas-Joly, E. Guillaume, S. Ducourtieux, L. Saragoza, D. Lesenechal, T. Macé, J-M. Lopez-Cuesta, C. Longuet, S. Duplantier, J.P. Bertrand, D. Calogine, B. Minisini, D. Parisse (*LNE, France*)
- 16:30-17:00 Coffee break

Thursday 18 November

MINATEC AUDITORIUM

Session 8: Personal protective equipment

(Chair: François Tardif)

- PL8**
8:30-9:10 Is it possible to protect workers against nano-aerosols and hydrosols?
François Tardif, L. Golanski, A. Guiot, S. Motellier (CEA, France)
- O8-1**
9:15-9:30 Aerosol penetration through particulate protective clothing.
Chih-Chieh Chen, J.-C. Cho, S.-H. Huang, C.-W. Chen, Y.-M. Kuo (National Taiwan University, Taiwan)
- O8-2**
9:30-9:45 Development of a test method for the evaluation of the efficiency of protective gloves against nanoparticles in conditions simulating occupation use.
Patricia Dolez, L. Vinches, T. Vu-Khanh, K. Wilkinson, P. Plamondon (École de technologie supérieure, Canada)
- O8-3**
9:45-10:00 A new measurement method for polymeric membrane barriers and textile properties against nano hydrosols, application to gloves and protective clothings.
L. Golanski, C. Brouard, Sylvie Motellier, F. Tardif (CEA, France)
- O8-4**
10:00-10:15 Nanofiber-based filters as novel barrier systems for nanomaterial exposure scenarios.
Mirko Faccini, D. Amantia, S. Vázquez-Campos, L. Aubouy (LEITAT Technological Center, Spain)
- O8-5**
10:15-10:30 Penetration results of two fibrous media towards nanoparticles in the range 5 nm to 400 nm.
Clothilde Brochot, N. Michielsen, S. Chazelet, D. Bemer, D. Thomas (IRSN, France)
- 10:30-11:00 Coffee break

Session 10: Secure industrial production

(Chair: Paul R. Amyotte)

- PL10**
11:00-11:40 Are classical process safety concepts relevant to nanotechnology applications?
Paul R. Amyotte (Dalhousie University, Canada)
- O10-1**
11:45-12:00 Long and aligned multi-walled carbon nanotubes grown on carbon substrates by injection-CVD process: synthesis process, characterisation and functionalization.
Youssef Magga, S. Patel, M. Pinault, G. Deniau, C. Reynaud, M. Mayne-L'Hermite (CEA, France)
- O10-2**
12:00-12:15 Can induction plasma technology be nano-safe, "green" and energy efficient?
Claude Ostiguy, M.I. Boulos, L. Brochu, J.P. Crête, N. Dignard, D. Héraud, F. Hudon, J.W. Jurewicz (IRSST, Canada)

- O10-3**
12:15-12:30 Polyfire project: an example of an industrial research project promoting safe industrial production of fire-resistant nanocomposites.
Celina Vaquero, J. López de Ipiña, B. Hargreaves, B. Weager, C. Breen (*LEIA Technology Centre, Spain*)
- O10-4**
12:30-12:45 Green nanoparticle production using micro reactor technology.
Andrea Kück, M. Steinfeldt, K. Schmitter, P. Swiderek, A. von Gleich, J. Thöming (*Universität Bremen, Germany*)
- 13:00-14:30 Lunch

Session 11: Safety parameters evaluation

(Chair: Rolf K. Eckhoff)

- PL11**
14:30-15:10 Are enhanced dust explosion hazards to be foreseen in production, processing and handling of powders consisting of nano-size particles?
Rolf K. Eckhoff (*University of Bergen, Norway*)
- O11-1**
15:15-15:30 Ignition and explosion of nanopowders: something new under the dust.
Olivier Dufaud, A. Vignes, F. Henry, L. Perrin, J. Bouillard (*Université de Lorraine, France*)
- O11-2**
15:30-15:45 Nano-immunosafety: issues in assay validation.
Diana Boraschi, G.J. Oostingh, E. Casals, P. Italiani, I. Nelissen, V.F. Puentes, A. Duschl (*Institute of Biomedical Technologies, Italy*)
- O11-3**
15:45-16:00 Approaches for establishing safe exposure levels for engineered nanomaterials.
Karin Aschberger, F.M. Christensen (*European Commission-JRC, Italy*)
- 16:00-16:30 **Conclusions**

ROOM B**Session 4: Toxicology**

(Chair: Ken Takeda)

4b. In vitro studies

- O4b-12**
9:15-9:30 Effects of carbon black nanoparticles on the biotransformation of carcinogen aromatic amines by the human arylamine N-acetyltransferase 1.
Elodie Sanfins (*University Paris Diderot, France*)
- O4b-13**
9:30-9:45 Biological effects of multi-walled carbon nanotubes on different cell types.
Jean-Pascal Piret, S. Vankoningsloo, J.M. Mendoza, F. Noel, C. Saout, O. Toussaint (*University of Namur, Belgium*)
- O4b-14**
9:45-10:00 Study of the toxicity of inhaled alumina engineered nanoparticles.
Mélanie Pailleux, J. Pourchez, D. Boudard, P. Grosseau, M. Cottier (*École Nationale Supérieure des Mines, France*)
- O4b-15**
10:00-10:15 Oxidative stress of amorphous monodisperse silica nanoparticles in human endothelial cells.
D.H. Napierska, L. Thomassen, L. Gonzalez, V. Rabolli, D. Lison, M. Kirsch-Volders, J. Martens, B. Nemery, Peter H.M. Hoet (*K.U. Leuven, Belgium*)
- O4b-16**
10:15-10:30 Evaluation of small size magnetite iron oxide nanoparticles toxicity on endothelial cells.
Amel Hanini, A. Schmitt, K. Kacem, J. Gavard, S. Ammar (*University Paris Diderot, France*)
- 10:30-11:00 Coffee break

Session 12: Satellite meetings

(Chair: Claude Emond)

12d. TITNT

- O12d-1**
11:45-11:55 The International Team in NanosafeTy (TITNT): a multidisciplinary group for an improvement of nanorisk assessment and management.
Claude Emond, C. Rolando, S. Hirano, F. Schuster, S. Hallé, A. Meyer-Plath, O. Jolliet, K. Maghni, L. Vandelac, C. Sentein, C. Tokarski (*University of Montréal, Canada*)
- O12d-2**
11:55-12:10 Status of characterization techniques for carbon nano tubes and suggestions towards standards suitable for toxicological assessment.
Florian F. Schweinberger, A.A. Meyer-Plath (*Technische Universität München, Germany*)
- O12d-3**
12:10-12:25 Aligned multi-walled carbon nanotubes: synthesis by aerosol-assisted CCVD process and characterisation.
Y. Magga, M. Pinault, C. Castro, C. Reynaud, Martine Mayne-L'Hermite (*CEA, France*)
- O12d-4**
12:25-12:40 Differential proteomic study of exposed cells to SiC and SWCNT nanoparticles.
C. Tokarski, S. Hirano, Christian Rolando (*Université de Lille 1, France*)

- O12d-5** Kinetic behaviour of nanoparticles across the biological physiology.
12:40-12:55 Claude Emond (*University of Montréal, Canada*)
- O12d-6** Agrinano's and nanofoods: some conditions for sustainability.
12:55-13:10 Louise Vandelac, S. Beaudoin (*University of Quebec, Canada*)
- O12d-7** The NE³LS Network, Quebec's initiative to evaluate the impact and promote a responsible and sustainable development of nanotechnology.
13:10-13:20 C.-A. Endo, R. Battista, C. Beaudry, M.-H. Parizeau, Claude Emond (*NE³LS Network, Centre de Recherche de l'Hôpital Ste-Justine, Canada*)
- 13:20-14:30 Lunch

Session 4: Toxicology

(Chair: Marie Carrière)

4a. *In vivo* studies

- O4a-6** Biological response of individually dispersed multi-wall carbon nanotubes in the lung after intratracheal instillation in rats.
15:15-15:30 Norihiro Kobayashi, M. Naya, M. Ema, S. Endoh, J. Maru, K. Mizuno, J. Nakanishi (*AIST, Japan*)
- O4a-7** Maternal exposure to nanoparticulate titanium dioxide alters gene expression related to brain development of offspring in the mouse.
15:30-15:45 M. Shimizu, M. Umezawa, H. Tainaka, Ken Takeda (*Tokyo University of Science, Japan*)

4b. *In vitro* studies

- O4b-17** Toxicity test: Fluorescent silicon nanoparticles.
15:45-16:00 K. Fujioka, S. Hanada, A. Hoshino, K. Yamamoto, K. Hirakuri, K. Sato, A. Shiohara, R. Tilley, Y. Manome, Fumihide Kanaya (*National Centre for Global Health and Medicine, Japan*)

ROOM C**Session 9: Standardization, Regulations and Education***(Chair: Daniel Bernard)*

- PL9**
8:30-9:10 Nanomaterials uncertainties : regulation needs and standardisation answer.
Daniel Bernard (*Arkema, France*)
- O9-1**
9:15-9:30 Socio-economic analysis: a tool for regulating nanotechnologies.
Jean-Marc Brignon, S. Metz (*INERIS, France*)
- O9-2**
9:30-9:45 Improving workplace prevention associated to nanoparticles: the needs of
considering uncertainties.
E. Draï, Sandrine Caroly (*INRS, France*)
- O9-3**
9:45-10:00 Challenges in assessing the environmental fate and exposure of nanosilver.
Cherrie Whiteley, M. Dalla Valle, A.J Sweetman, K.C Jones (*Lancaster
University, UK*)
- 10:30-11:00 Coffee break

Session 12: Satellite meetings*(Chair: Martie van Tongeren)***12e. NANEX**

- O12e-1**
11:45-13:00 NANEX internal programme.
Introduction, Martie van Tongeren (*IOM, UK*)
Human exposure, Derk Brouwer (*TNO Quality of Life, The Netherlands*)
Environmental, Bernd Nowack (*EMPA, Switzerland*)
Case study, Steffi Friedrichs (*NIA, Belgium*)
Gap analysis, research agenda, discussion.
- 13:00-14:30 Lunch

Session 5: Environmental impact*(Chair: Mélanie Auffan)*

- O5-5**
15:15-15:30 Comparative ecotoxicity of silver and cerium dioxide nanoparticles in adult and
embryos fish.
Tatiana Demidova, E. Krysanov (*Severtsov Institute of Ecology and Evolution,
Russia*)
- O5-6**
15:30-15:45 Aquatic mobility of natural and engineered nanoparticles.
Armand Masion, J. Rose, M. Auffan, C. Levard, E. Doelsch, J. Labille,
P. Chaurand, N. Solovitch, F. Ziarelli, M.A. Diot, C. Botta, D. Borschneck,
A. Thill, J.Y. Bottero (*CEREGE, France*)