

Sunday September 10th Arrival

18:30 - 21:00 *Welcome drink and Dinner*

Program of the Advanced courses

Monday September 11th

09:10 - 09:30 Introduction to the advanced courses

09:30 - 11:30 NP synthesis – T. Nguyen

11:30 - 12:00 *Coffee break*

12:00 - 13:00 NP Characterization / first part- D. Mitrano

13:00 - 14:30 *Lunch*

14:30 - 15:30 NP characterization / second part - D. Mitrano

15:30 - 16:30 Asymmetric flow field flow fractionation (AF4) - G. Lespes

16:30 - 17:00 *Refreshment*

17:00 - 19:00 Ecotox studies – K. Schirmer

19:00 - 20:00 *Discussion over a drink*

20:00 - 21:30 *Dinner*

Tuesday September 12th

08:30 - 10:00 Spectroscopic and imaging techniques - G. Veronesi

10:00 - 10:30 *Coffee break*

10:30 - 11:30 TEM sample prep - B. Gallet

11:30 - 12:30 X-ray tomography - C. Levard

12:30 - 15:00 *Lunch or Walking tour around Villard de Lans + Picnic*

15:00 - 17:00 Cellular biology, Omics - T. Rabilloud

17:00 - 17:30 *Refreshment*

17:30 - 18:30 *in vitro* dosimetry - B. Trouiller

18:30 - 19:00 Safer by design approach - J. Rose

19:30 - 21:00 *Dinner*

Program of the Conference on Metallic nanoparticles: health, environment, applications and safer-by-design

Wednesday September 13th

Safer-by-design / Applications

09:00 - 09:30 Introduction - Jérôme Rose

Safer and eco-designed innovative nanomaterials

09:30 - 10:20 Plenary Invited lecture: Thanh Nguyen

Synthesis of plasmonic and magnetic nanoparticles for biomedical applications

10:20 - 10:40 Jérôme Laisney, A Deniaud, V Bartolomei, D Boutry and I Michaud-Soret.
Safer-by-design conception of TiO₂ nanoparticles coated with bio-inspired ligands for industrial applications in paints

10:40 - 11:10 *Coffee break*

11:10 - 11:30 Anh-Minh Nguyen, C Larqueta, A Ridoux, S Lanone, C Chanéac and S Carenco
Bimetallic oxysulfide nanoparticles: towards a Safer-by-Design approach

Safer-by-design / Applications

11:30 - 12:00 Keynote: Francesco Stellacci

The effect of ligands in the interaction of nanoparticles with cell membranes, lipid bilayers, and viruses

12:00 - 12:20 Marianne Marchioni, I Worms, T Gallon, C Gateau, E Mintz, P Delangle, A Deniaud and I Michaud-Soret.
Impact of thiols containing molecules on silver nanoparticle behavior

12:20 - 12:40 Andreas Halbleib, T Schlotter and K Höhener
The Safe-by-Design concept for nanomaterials and a corresponding web application

12:40 - 14:10 *Lunch*

Characterization Methods

14:10 - 14:40 Keynote: Denise Mitrano

Life-cycle inspired protocols for aging engineered nanomaterials: applicability of comparing pristine and transformed particles to understand nanoparticle behaviour and (eco)toxicity

14:40 - 15:00 S Faucher, G Charron, Y Sivry, Gaëtane Lespes
Field-flow fractionation- multidetection: an attractive analytical strategy for the characterization of nanoparticles

15:00 - 15:20 Vanessa Tardillo-Suarez, J Villanova, D Salomon, J-P Suuronen, S Laboure, R Kumar and R Tucoulou
ID16B: the state-of-the-art nanoprobe beamline at the ESRF for the study of metallic nanoparticles in health and environmental applications

15:20 - 15:40 Sergio Dominguez Medina, S Fostner, M Sansa Perna, T Alava, AK Stark, A Brenac, H Blanc, M Gely, S Hentz and C Masselon.
Inertial-mass sensing of nebulized metallic and non-metallic particles with high efficiency using nanomechanical resonators

15:40 - 16:10 *Refreshment*

Exposure and toxicity

16:10 - 17:00 Plenary Invited lecture: Phil Demokritou

Assessing the dose of nanomaterials in cellular toxicological studies: advanced integrated approaches utilizing experimentation and fate and transport modeling

17:00 - 17:20 Alice Balfourier, J Volatron, N Luciani, C Anne-Longin, C Sagné, F Carn and F Gazeau
How lysosome can suffer from persistent nanoparticles sequestration?

17:20 - 17:40 Valérie Forest, JF Hochepped, L Leclerc, A Trouvé, K Abdelkebir, G Sarry and J Pourchez.
Construction of a nano-QSAR model to predict the toxicity of metal (hydr)oxide nanoparticles based on a dataset considering chemical and dimensional variety and experimentally assessed physico-chemical and biological descriptors

17:40 -19:20 Poster session

19:30 - 21:00 *Dinner*

Thursday September 14th

Impact on the Environment

09:00 - 09:50 Plenary Invited lecture: Kristin Schirmer

Effects of short- and long-term exposure to silver nanoparticles on freshwater microbial communities

09:50 - 10:10 Susilaine Maira Savassa, NM Duran, H Castillo-Michel and HWP Carvalho.
The impact of interaction of ZnO nanoparticles in common beans germination

10:10 - 10:30 Ana Elena Pradas del Real, C Santaella, M Hamidat, H Castillo-Michel, R Kaegi, B Sinnet, M Carriere M and G Sarret.
Effects of AgNPs on soil microbial community composition and plant development after sewage sludge application on agricultural soils

10:30 - 10:50 Carolyn M. Wilke, JF Gaillard and KA Gray.
Night and day: combined toxicity of photoactive nanomaterial mixtures differs under dark and light conditions

10:50 - 11:20 *Coffee break*

11:20 - 11:40 Camille Larue, M Bakshi, C Liné, M Carrière, G. Sarret, AE Pradas del Real and H Castillo-Michel.
Combining different approaches to better understand TiO₂ nanoparticle uptake by plants

Safer-by-design / Applications

11:40 - 12:30 Plenary Invited lecture: Wendel Wohlleben

Copper-based nanomaterials: on the diversity of functionality, hazard and exposure for different compositions and uses

12:30 - 12:50 K. David Wegner, A Tarantini, M Carrière, P Reiss.
Safer-by-design quantum dots and toxicological studies

12:50 - 13:10 Vincent Bartolomei, D Slomberg, J Labille and D Boutry
A safer by design approach to anticipate fate of nanosized titanium dioxide (TiO₂) in sunscreen products

13:10 - 14:40 *Lunch*

Impact on Health

14:40 - 15:10 Keynote: David Allsop and Barbara Maher

Pollution-derived magnetite nanoparticles as a possible risk factor for Alzheimer's disease

15:10 - 15:30 Alexis Gonon, C Villiers, V Forest, M Cottier, PN Marche.
Gold nanoparticle exposure can impair the development of the adaptive immune response to pathogens

15:30 - 15:50 Chloé Puisney, EK Oikonomou, A Chevillot, S Nowak, JF Berret and A Baeza-Squiban
Effects of brake wear nanoparticles on respiratory cells

15:50 - 16:20 *Refreshment*

Impact on Health

16:20 - 16:50 Keynote: Sybille van den Brule and Dominique Lison

Food nanoparticles: what have we learned from experimental studies?

16:50 - 17:10 Romain Grall, P Castelnau-Marchand, T Gharsalli, C Sicard-Roselli, E Brun, E Porcel, S Lacombe, F Leteurtre, J Lebeau and S Chevillard.
Metallic nanoparticles to impair cancer radio resistance: impact of tumour heterogeneity and study of long term effects on biological conclusions

17:10 - 17:30 Sylvia Lehmann, B Gilbert, D Toybou, M Viau, A Pradas Del Real, C Celle, JP Simonato, P Cloetens, M. Salome ,H Castillo and L Charlet
Towards Safer by design silver nanowires: modulation of their characteristics and evaluation of their dermal cytotoxicity

17:30 - 17:50 Giulia Veronesi, V Tardillo-Suarez, B Gallet, M Chevallet, P-H Jouneau, E Mintz, I Michaud-Soret and A Deniaud.
Silver subcellular distribution and impact on hepatocyte functions following exposure to silver nanoparticles

18:30 - 22:00 *Banquet at Les Allières, typical mountain food*

Friday September 15th

Impact on Health

09:00 - 09:50 Plenary Invited lecture: Bengt Fadeel

Cytotoxicity assessment and cytokine profiling of metal and metal oxide nanoparticles: lessons from EC-funded nanosafety projects

09:50 - 10:10 C Aude-Garcia, B Dalzon, V Collin-Faure, H Diemer, D Béal, JL Ravanat, S Cianférani, M Carrière and Thierry Rabilloud.

Input of proteomic analyses for understanding cellular responses to nanoparticles: toward mechanistic data and evidence for cross-toxic effects

10:10 - 10:30 Dalel Askri, S Ouni, SG Lehmann, V Cunin, W Rachidi, M Sakly, S Amara and M Sève. Investigating the pathophysiological effects and the proteome changes after iron oxide nanoparticles administration.

10:30 - 10:50 Laurent Charlet, B Gilbert, S Lehmann, T Maffeis, D Toyboud, C Louka, M Viau, A Pradas Del Real, C Celle, JP Simonato, P Cloetens, M Salome, H Castillo. Compared chemistry and toxicity of AgNW and ZnONW

10:50 - 11:20 *Coffee break*

Characterization Methods / Impacts on Health

11:20 - 11:40 Wei Liu, I Worms, N Herlin, D Boutry, E Mintz, I Michaud-Soret, C Vidaud and F Rollin-Genetet

Interaction of silver nanoparticles with metallothionein and ceruloplasmin: impact on metal substitution by Ag(I), corona formation and enzymatic activity

11:40 - 12:00 F Mousseau, C Puisney, S Mornet, A Baeza and Jean-François Berret

Supported pulmonary surfactant bilayers on silica nanoparticles: Formulation and impact on lung epithelial cells

12:00 - 12:20 L Marichal, M Biola-Clier, G Klein, C Mathé, S Devineau, E Hatem, B Alonso, JC Gaillard, G Lagniel, J Armengaud, S Chédin, Y Boulard, S Pin, JP Renault, M Carrière, J Labarre and Jean-Christophe Aude.

Large-scale analysis of proteins adsorbed on titanium nanoparticles in human cell extracts

12:20 - 12:40 W Dufefoi, H Terrisse, B Humbert and Marie-Hélène Ropers.

Following titanium dioxide from a food product to the intestine: what's new?

12:40 – 13:00 Concluding remarks

13:00 - 13:40 *Lunch before departure*