

# 9<sup>th</sup> International Conference on Nanotoxicology

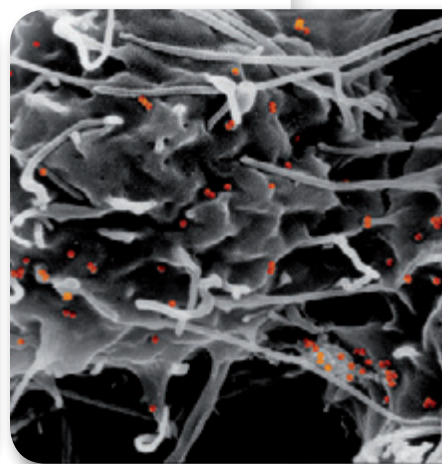
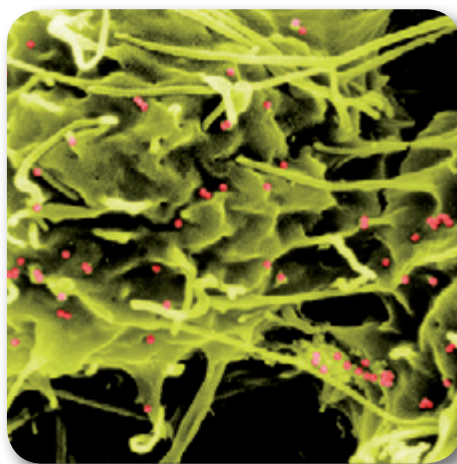
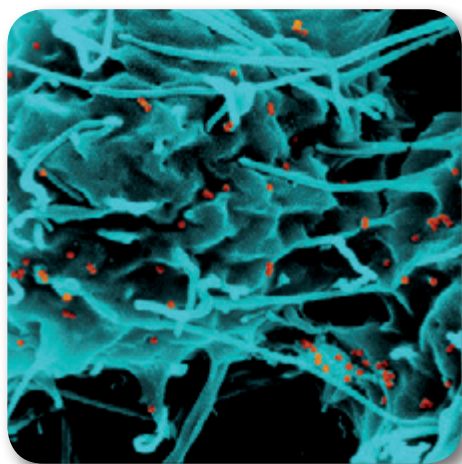
**New tools in risk assessment of nanomaterials**

18 – 21 September 2018

Dorint Kongresshotel Düsseldorf/Neuss

Germany

[www.nanotox2018.org](http://www.nanotox2018.org)



## PROGRAMME

ORGANISER:



**DECHEMA**

Gesellschaft für Chemische Technik  
und Biotechnologie e.V.

SUPPORTED BY:



## SCIENTIFIC PROGRAMME

## TUESDAY, 18 SEPTEMBER 2018

Stadthalle

14:00 **OPENING CEREMONY**15:00 **PLENARY LECTURE****History and future perspectives of Nanoparticles as Nanomedical Tools**J. Kreuter<sup>1</sup>; <sup>1</sup> University of Frankfurt, Frankfurt am Main/D15:30 **PLENARY LECTURE****From particles to fibres to plates – everything nano?**M. MacFarlane<sup>1</sup>; <sup>1</sup> University of Cambridge, Leicester/UK

16:00 COFFEE BREAK

16:30 **PLENARY LECTURE****The road to the market: Safer by design and grouping**A. Sips<sup>1</sup>; <sup>1</sup> National Institute of Public Health & the Environment, Bilthoven/NL17:00 **PLENARY LECTURE****Nanomaterials cytotoxicity assessment by biomechanics and risk management plan for nanomaterials implemented at Universidad de los Andes**H.F. Pastrana Rendon<sup>1</sup>; <sup>1</sup> Universidad de los Andes, Bogotá/CO17:30 **KEYNOTE LECTURE**18:00 **Informal Get Together (18:00 – 20:00)**

## WEDNESDAY, 19 SEPTEMBER 2018

## Stadthalle

- 09:00 **PLENARY LECTURE**  
**Dosimetry: The unsolved mystery in inhalation toxicology**  
O. Schmid<sup>1</sup>; <sup>1</sup> Helmholtz Zentrum München, Munich/D
- 09:45 **PLENARY LECTURE**  
**Statistics and harmonisation – unwanted tools**  
J. Elliott<sup>1</sup>; <sup>1</sup> National Institute of Standards and Technology, Gaithersburg/USA
- 10:30 COFFEE BREAK
- 11:00 **PLENARY LECTURE**  
**Advanced analytical approaches in understanding biological interactions of nanomaterials**  
C. Chen<sup>1</sup>; <sup>1</sup> Chinese Academy of Science, Beijing/CN
- 11:30 **PLENARY LECTURE**  
**Systems toxicology for nanomaterial safety**  
T. Hartung<sup>1</sup>; <sup>1</sup> The Johns Hopkins University Bloomberg School of Public Health, Baltimore/USA
- 12:00 LUNCH BREAK

## Raum 1

## Data reliability, grouping and prediction

Chair: P. Wick<sup>1</sup>; T. Lee<sup>2</sup>; <sup>1</sup> Empa - Swiss Federal Laboratories for Materials Science and Technology, St. Gallen/CH; <sup>2</sup> Korea Research Institute of Standards and Science (KRISS), Daejeon/ROK

- 13:00 **Understanding nanosafety – the importance of assay performance in vitro**  
C. Hirsch<sup>1</sup>; M. Rösslein<sup>1</sup>; N. Bohmer<sup>1</sup>; P. Wick<sup>1</sup>; <sup>1</sup> Empa - Swiss Federal Laboratories for Materials Science and Technology, St. Gallen/CH
- 13:20 **Towards Nanomaterial Grouping: Linking physico-chemical Properties to Toxicity**  
A. Haase<sup>1</sup>; <sup>1</sup> German Federal Institute for Risk Assessment (BfR), Berlin/D
- 13:40 **Systems toxicology approaches to ENM classification and prioritization**  
P. Kinaret<sup>1</sup>; G. Scala<sup>1</sup>; V. Marwah<sup>1</sup>; A. Serra<sup>1</sup>; V. Fortino<sup>1</sup>; D. Greco<sup>1</sup>; <sup>1</sup> University of Tampere, Tampere/FIN
- 14:00 **Grouping of nanomaterials regarding their risk to the environment**  
D. Kühnel<sup>1</sup>; M. Herrchen<sup>2</sup>; K. Hund-Rinke<sup>2</sup>; C. Nickel<sup>3</sup>; E. van der Zalm<sup>4</sup>; <sup>1</sup> Helmholtz-Zentrum für Umweltforschung (UFZ), Leipzig/D; <sup>2</sup> Fraunhofer Institute for Molecular Biology and Applied Ecology IME, Schmallenberg/D; <sup>3</sup> Institute for Energy and Environmental Technology e.V. (IUTA), Duisburg/D; <sup>4</sup> German Federal Environmental Agency (UBA), Berlin/D
- 14:15 **Oxidative Potential of nanomaterials and associated oxidative stress responses determined by multiple assays**  
B. Hellack<sup>1</sup>; T. Kuhlbusch<sup>2</sup>; L. Santiago-Aragao<sup>3</sup>; S. Boland<sup>3</sup>; A. Baeza-Squiban<sup>3</sup>; A. Neumeyer-Sickinger<sup>4</sup>; C. Albrecht<sup>4</sup>; R. Schins<sup>4</sup>; <sup>1</sup> Institute for Energy and Environmental Technology e.V. (IUTA), Duisburg/D; <sup>2</sup> Federal Office for Occupational Safety and Occupational Medicine, Dortmund/D; <sup>3</sup> University Paris Diderot (UPD) (Sorbonne Paris Cité), Unit of Functional and Adaptive Biology, UMR CNRS 8251, Paris/F; <sup>4</sup> IUF-Leibniz Research Institute for Environmental Medicine, Duesseldorf/D

14:30 COFFEE BREAK

## Raum 2

## Interactions of nanoparticles with bacterial and viral pathogens

Chair: A. Shvedova<sup>1</sup>; Y. Zhao<sup>2</sup>; <sup>1</sup>NIOSH/CDC, Morgantown/USA; <sup>2</sup> National Center for Nanoscience and Technology of China, Beijing/D

- 13:00 **Nanomaterial-Microbe Crosstalk: Principles and Relevance for Sustainable Nanotechnology**  
R. Stauber<sup>1</sup>; <sup>1</sup> Universität Mainz, Mainz/D
- 13:20 **Risk of Altered Respiratory Immune Responses Invoked by Exposure to Fibrous Nanomaterials, Anthropogenic Mineral Fibers and Asbestos Cleavage Fragments.**  
A. Shvedova<sup>1</sup>; <sup>1</sup> NIOSH/CDC, Morgantown/USA
- 13:40 **Nanoantibiotics: A new therapeutic strategy for bacterial infections**  
A. Engin<sup>1</sup>; <sup>1</sup> Gazi University, Ankara/TR
- 14:00 **Interactions between nanomaterials and reactive oxygen species: effects of composition, coating, size, and environment**  
W. He<sup>1</sup>; J. Yin<sup>2</sup>; <sup>1</sup> Xuchang University, Henan/CN; <sup>2</sup> US FDA, USA/USA
- 14:15 **Bacterial toxicity of crystalline vanadium dioxide nanoparticles**  
D. Wu<sup>1</sup>; Q. Su<sup>2</sup>; Y. Li<sup>1</sup>; Z. Chen<sup>1</sup>; X. Qin<sup>3</sup>; Y. Liu<sup>1</sup>; W. Xi<sup>1</sup>; Y. Gao<sup>1</sup>; A. Cao<sup>1</sup>; X. Liu<sup>4</sup>; H. Wang<sup>1</sup>; <sup>1</sup> Shanghai University, Shanghai/CN; <sup>2</sup> Shanghai University/National University of Singapore, Shanghai/CN; <sup>3</sup> National University of Singapore, Singapore/SGP; <sup>4</sup> National University of Singapore/Institute of Materials Research and Engineering, Singapore/SGP

## SCIENTIFIC PROGRAMME

## WEDNESDAY, 19 SEPTEMBER 2018

## Raum 1

## Adverse outcome pathways as a framework for risk assessment

Chair: *J. Shatkin<sup>1</sup>; S. Halappanavar<sup>2</sup>; <sup>1</sup>Vireo Advisors LLC, Boston/USA; <sup>2</sup>Health Canada, Ottawa/CDN*

15:00 **Relationship between inflammasome activation in vitro by engineered nanomaterials and inflammatory responses in vivo**  
*R. Vandebriel<sup>1</sup>; <sup>1</sup> National Institute for Public Health and the Environment, Bilthoven/NL*

15:20 **Developing key events for Adverse Outcome Pathways from the nanotoxicity literature: considerations from an extensive literature review**  
*I. Lynch<sup>1</sup>; <sup>1</sup> The University of Birmingham, Birmingham/UK*

15:40 **An approach for identifying potential key events for Adverse Outcome Pathway development using available nanotoxicity literature in a risk assessment context**  
*S. Halappanavar<sup>1</sup>; <sup>1</sup> Health Canada, Ottawa/CDN*

16:00 **An adverse outcome pathway for ENM-induced risk of developing atherosclerotic plaques**  
*U. Vogel<sup>1</sup>; S. Poulsen<sup>1</sup>; K. Knudsen<sup>1</sup>; A. Saber<sup>1</sup>; N. Jacobsen<sup>1</sup>; H. Wallin<sup>2</sup>; S. Halappanavar<sup>3</sup>; <sup>1</sup> National Research Centre for the Working Environment, Copenhagen/DK; <sup>2</sup> Statens Arbejdsmiljøinstitut, Oslo/N; <sup>3</sup> Health Canada, Ottawa/CDN*

16:15 **Adverse Outcome Pathways as Tools for the Risk Assessment of Nanomaterials**  
*J. Ede<sup>1</sup>; J. Shatkin<sup>2</sup>; <sup>1</sup> Vireo Advisors, Edmonton, Alberta/CDN; <sup>2</sup> Vireo Advisors, Boston/USA*

16:30 **POSTERSESSION** (16:30 – 18:00)

## Raum 2

## Young women in science

Chair: *B. Rothen-Rutishauser<sup>1</sup>; C. Hirsch<sup>2</sup>; <sup>1</sup> Fribourg/CH; <sup>2</sup>Empa - Swiss Federal Laboratories for Materials Science and Technology, St. Gallen/CH*

15:00 **Introduction**  
*B. Rothen-Rutishauser<sup>1</sup>; <sup>1</sup> University of Fribourg/CH*

15:10 **Physico-chemical properties of different ZnO nanoparticles during artificial digestion**  
*L. Voss<sup>1</sup>; P. Saloga<sup>2</sup>; V. Stock<sup>1</sup>; L. Boehmert<sup>1</sup>; C. Kaestner<sup>2</sup>; A. Breuning<sup>1</sup>; A. Thuenemann<sup>2</sup>; H. Sieg<sup>1</sup>; A. Lampen<sup>1</sup>; <sup>1</sup> German Federal Institute for Risk Assessment, Berlin/D; <sup>2</sup> German Federal Institute for Materials Research and Testing, Berlin/D*

15:27 **Intestinal Absorption of Food Additive Nanoparticles and Microparticles by Human Volunteers**  
*A. Barreto da Silva<sup>1</sup>; D. Koller<sup>1</sup>; K. Kessler<sup>1</sup>; R. Hewitt<sup>1</sup>; R. Jugdaohsingh<sup>1</sup>; J. Powell<sup>1</sup>; <sup>1</sup> Department of Veterinary Medicine, University of Cambridge, Cambridge/UK*

15:44 **The Role of Disease State and Environmental Exposures on Gold Nanoparticle Brain Accumulation in Mice**  
*C. Wong<sup>1</sup>; B. Gelein<sup>1</sup>; A. Kennel<sup>1</sup>; G. Oberdörster<sup>1</sup>; A. Elder<sup>1</sup>; <sup>1</sup> University of Rochester, Rochester, NY/USA*

16:01 **Investigating Alternative Models to Evaluate the Impact of Nanomaterials on Neutrophils during Inflammation**  
*R. Verdon<sup>1</sup>; D. Brown<sup>1</sup>; S. Gillies<sup>1</sup>; A. Rossi<sup>2</sup>; C. Tucker<sup>2</sup>; V. Stone<sup>1</sup>; H. Johnston<sup>1</sup>; <sup>1</sup> Heriot-Watt University, Edinburgh/UK; <sup>2</sup> University of Edinburgh, Edinburgh/UK*

16:18 **Conclusion**  
*C. Hirsch<sup>1</sup>; <sup>1</sup> Empa, St. Gallen/CH*

## THURSDAY, 20 SEPTEMBER 2018

## Stadthalle

09:00 **PLENARY LECTURE**  
**Predicting nanomaterial flows to the environment: state of the art and new developments**  
 B. Nowack<sup>1</sup>; <sup>1</sup> Empa-Swiss Federal Laboratories, St. Gallen/CH

09:45 **PLENARY LECTURE**  
**Nanoimaging of Tissue Materials and in situ Characterization**  
 U. Graham<sup>1</sup>; <sup>1</sup> University of Kentucky, Lexington/USA

10:30 COFFEE BREAK

11:00 **PLENARY LECTURE**  
**Results of a Long-term inhalation study with Ceria and Bariumsulphate nanoparticles**  
 R. Landsiedel<sup>1</sup>; <sup>1</sup> BASF SE, Ludwigshafen/D

11:30 **PLENARY LECTURE**  
**In vitro models – the new in vivo?**  
 S.H. Doak<sup>1</sup>; <sup>1</sup> Swansea University Medical School/UK

12:00 LUNCH BREAK

## Raum 1

## Databases and nanoinformatics

Chair: H. Krug<sup>1</sup>; K. Nau<sup>2</sup>; <sup>1</sup> NanoCASE GmbH, Engelburg/CH; <sup>2</sup> Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

13:00 **How Nature Indexing Helps You Find Nanotechnology Literature and Data Efficiently**  
 A. Ghejsi<sup>1</sup>; <sup>1</sup> SpringerNature, Heidelberg/D

13:20 **DaNa2.0 - reliable information on the safety of nanomaterials**  
 C. Steinbach<sup>1</sup>; N. Bohmer<sup>1</sup>; H. Krug<sup>2</sup>; K. Nau<sup>3</sup>; C. Marquardt<sup>3</sup>; D. Kühnel<sup>4</sup>; <sup>1</sup> DECHEMA e.V., Frankfurt am Main/D; <sup>2</sup> NanoCASE GmbH, Engelburg/CH; <sup>3</sup> KIT Karlsruhe Institute of Technology, Karlsruhe/D; <sup>4</sup> Helmholtz Centre for Environmental Research GmbH – UFZ, Leipzig/D

13:40 **eNanoMapper solutions for FAIR sharing of nanosafety data**  
 E. Willighagen<sup>1</sup>; <sup>1</sup> Maastricht University, Maastricht/NL

14:00 **Advanced tools for grouping and data quality curation for nanoregulation**  
 C. Carnovale<sup>1</sup>; B. Balusamy<sup>1</sup>; S. Sabella<sup>1</sup>; <sup>1</sup> Istituto Italiano di Tecnologia, Genova/I

14:15 **Literature Evaluation on Nanotoxicology – the Big Surprise**  
 H. Krug<sup>1</sup>; <sup>1</sup> NanoCASE GmbH, Engelburg/CH

14:30 COFFEE BREAK

## Raum 2

## Graphene and 2D materials

Chair: B. Fadeel<sup>1</sup>; <sup>1</sup> Karolinska Institutet, Stockholm/S

13:00 **Toxicological Evaluation of Pulmonary Exposure to Different Graphene Nanomaterials in Vivo**  
 J. Roberts<sup>1</sup>; M. Barger<sup>2</sup>; K. Roach<sup>2</sup>; W. McKinney<sup>1</sup>; T. Chen<sup>1</sup>; S. Friend<sup>1</sup>; R. Mercer<sup>1</sup>; A. Stefaniak<sup>3</sup>; I. Chaudhuri<sup>4</sup>; A. Kyrilidis<sup>4</sup>; M. Orandle<sup>1</sup>; V. Kodali<sup>1</sup>; N. Yanamala<sup>1</sup>; A. Erdelyi<sup>1</sup>; <sup>1</sup> CDC/NIOSH/HELD, Morgantown, WV/USA; <sup>2</sup> West Virginia University, Morgantown, WV/USA; <sup>3</sup> CDC/NIOSH/RHD, Morgantown, WV/USA; <sup>4</sup> Cabot Corporation, Billerica, MA/USA

13:20 **Graphene impact on immune cells**  
 L. Delogu<sup>1</sup>; M. Orecchioni<sup>2</sup>; D. Bedognetti<sup>3</sup>; V. Bordoni<sup>2</sup>; A. Bianco<sup>4</sup>; K. Kostarelos<sup>5</sup>; <sup>1</sup> University of Trieste/I; <sup>2</sup> University of Sassari/I; <sup>3</sup> Sidra Medical & Research Centre, Doha/Q; <sup>4</sup> CNRS, Institut de Biologie Moléculaire et Cellulaire, Strasbourg/F; <sup>5</sup> University of Manchester/UK

13:40 **Surface Modifications Related Biosafety of 2D MoS<sub>2</sub> Nanosheets for Biomedical Application**  
 W. Yin<sup>1</sup>; <sup>1</sup> Institute of High Energy Physics, Institute of High Energy Physics, CAS/D

14:00 **Graphene and the brain: interaction of graphene flakes with neurons, astrocytes and microglia**  
 M. Bramini<sup>1</sup>; <sup>1</sup> Istituto Italiano di Tecnologia, Genova/I

14:15 **Graphene based materials affect the pollen performance of *Nicotiana tabacum* and *Corylus avellana***  
 F. Candotto Carniel<sup>1</sup>; D. Gorelli<sup>2</sup>; M. Crosera<sup>1</sup>; E. Flahaut<sup>3</sup>; M. Bramini<sup>4</sup>; L. Fortuna<sup>4</sup>; G. Cai<sup>2</sup>; M. Nepi<sup>2</sup>; S. Bosi<sup>1</sup>; E. Vázquez Fernandez-Pacheco<sup>5</sup>; G. Adami<sup>1</sup>; M. Prato<sup>1</sup>; M. Tretiach<sup>1</sup>; <sup>1</sup> University of Trieste/I; <sup>2</sup> University of Siena/I; <sup>3</sup> University of Toulouse/F; <sup>4</sup> Istituto Italiano di Tecnologia, Genova/I; <sup>5</sup> University of Castilla-La Mancha, Ciudad Real/E

## SCIENTIFIC PROGRAMME

## THURSDAY, 20 SEPTEMBER 2018

## Raum 1

## Long-term low dose exposure

Chair: *R. Schins<sup>1</sup>; A. Elder<sup>2</sup>; <sup>1</sup>IUF – Leibniz Research Institute for Environmental Medicine, /D; <sup>2</sup>University of Rochester/USA*

- 15:00 **Comparative multi-generation study of long-term effects of pristine and wastewater-borne silver and titanium dioxide nanoparticles on reproduction in *Daphnia magna***  
K. Witte<sup>1</sup>; S. Hartmann<sup>1</sup>; R. Louch<sup>2</sup>; R. Zeumer<sup>3</sup>; C. Schlechtriem<sup>4</sup>; <sup>1</sup> University of Siegen, Siegen/D; <sup>2</sup> Faculty of Biology, Medicine and Health, University of Manchester, Manchester/UK; <sup>3</sup> Fraunhofer IME, Schmallenberg/D; <sup>4</sup> IME Fraunhofer, Schmallenberg/D
- 15:20 **Markers of oxidative stress in researchers of nano-composites**  
D. Pelc clova<sup>1</sup>; V. Zdimal<sup>2</sup>; P. Kacer<sup>3</sup>; D. Bello<sup>4</sup>; <sup>1</sup> 1st Medical Faculty, Charles University, Prague/CZ; <sup>2</sup> Institute of Chemical Process Fundamentals of the CAS, Prague/CZ; <sup>3</sup> Biocev, 1st Faculty of Medicine, Charles University, Prague/CZ; <sup>4</sup> UMass, Lowell, Department of Biomedical and Nutritional Sciences, Zuckerberg College of Health Sciences, Lowell/USA
- 15:40 **Outcome of an extended 90-day inhalation study with CeO<sub>2</sub> nanoparticles for prediction of long-term effects**  
D. Schwotzer<sup>1</sup>; H. Ernst<sup>1</sup>; M. Niehof<sup>1</sup>; D. Schaudien<sup>1</sup>; H. Kock<sup>1</sup>; J. Knebel<sup>1</sup>; D. Ritter<sup>1</sup>; T. Hansen<sup>1</sup>; O. Creutzenberg<sup>1</sup>; <sup>1</sup> Fraunhofer Institut für Toxikologie und Experimentelle Medizin ITEM, Hannover/D
- 16:00 **Effects of longterm exposures of primary human bronchial epithelial cells in air-liquid interface cultures to atmospheric particulate matter or cerium oxide nanoparticles**  
S. Boland<sup>1</sup>; <sup>1</sup> University Paris Diderot (Sorbonne Paris Cité), Paris cedex 13/F
- 16:15 **RNA-sequencing reveals long-term effects of silver nanoparticles on human lung cells indicative of oncogenic cell transformation**  
A. Gliga<sup>1</sup>; S. Di Bucchianico<sup>1</sup>; J. Lindvall<sup>2</sup>; B. Fadeel<sup>1</sup>; H. Karlsson<sup>1</sup>; <sup>1</sup> Institute of Environmental Medicine, Karolinska Institutet, Stockholm/S; <sup>2</sup> Science for Life Laboratory, Stockholm University, Stockholm/S

## Raum 2

## Cheap and robust tests

Chair: *A. Duschl<sup>1</sup>; <sup>1</sup> University of Salzburg, Salzburg/A*

- 15:00 **Optical Observation and Hyperspectral Characterization of Nanomaterials in Ex-vivo Tissue and Other Complex Matrixes**  
B. Cheatham<sup>1</sup>; <sup>1</sup> CytoViva Inc., Auburn/USA
- 15:20 **ToxTracker reporter cell lines as a tool for mechanism-based (geno)toxicity screening of nanoparticles and read across**  
H. Karlsson<sup>1</sup>; S. McCarrick<sup>1</sup>; F. Cappellini<sup>1</sup>; R. Derr<sup>2</sup>; J. Hedberg<sup>3</sup>; I. Odnevall-Wallinder<sup>3</sup>; G. Hendriks<sup>2</sup>; <sup>1</sup> Karolinska Institutet, Stockholm/S; <sup>2</sup> Toxys, Leiden/NL; <sup>3</sup> KTH Royal Institute of Technology, Stockholm/S
- 15:40 **A multiparametric platform for safety testing of nanoparticles**  
J. Fleddermann<sup>1</sup>; J. Susewind<sup>2</sup>; H. Peuschel<sup>1</sup>; J. Przibilla<sup>2</sup>; S. Kiefer<sup>1</sup>; A. Kraegeloh<sup>1</sup>; <sup>1</sup> INM - Leibniz Institute for New Materials, Saarbrücken/D; <sup>2</sup> Pharmacelsus GmbH, Saarbrücken/D
- 16:00 **NanoGenotox – Automatable Determination of the Genotoxicity of Nanoparticles with DNA-based Optical Assays**  
M. Wegmann<sup>1</sup>; D. Geißler<sup>1</sup>; T. Jochum<sup>2</sup>; M. Hannemann<sup>3</sup>; V. Somma<sup>3</sup>; K. Hoffmann<sup>1</sup>; J. Niehaus<sup>2</sup>; D. Roggenbuck<sup>3</sup>; U. Resch-Genger<sup>1</sup>; <sup>1</sup> Federal Institute for Materials Research and Testing (BAM), Berlin/D; <sup>2</sup> Centrum of applied nanotechnology - Hamburg GmbH, Hamburg/D; <sup>3</sup> MEDIPAN GMBH, Dahlewitz/Berlin/D
- 16:15 **Precision Cut Liver Slices as a promising ex vivo model for nanosafety studies**  
R. Bartucci<sup>1</sup>; Y. Boersma<sup>2</sup>; C. Åberg<sup>2</sup>; P. Olinga<sup>2</sup>; A. Salvati<sup>2</sup>; <sup>1</sup> University of Groningen, Groningen/NL; <sup>2</sup> Groningen Research Institute of Pharmacy (GRIP), University of Groningen (RUG), Groningen/NL

16:15 **POSTERSESSION** (16:30 – 18:00)

19:30 **CONFERENCE DINNER** (19:30 – 22:00)  
Vogthaus Neuss, Münsterplatz 10, Neuss  
(separate registration necessary)

## FRIDAY, 21 SEPTEMBER 2018

## Raum 1

## Read across of nanomaterials and risk assessment

- Chair: *T. Kuhlbusch<sup>1</sup>; A. Oomen<sup>2</sup>; <sup>1</sup> German Federal Institute of Occupational Safety and Health (BAuA), Dortmund/D; <sup>2</sup> The Dutch National Institute for Public Health and the Environment (RIVM), Bilthoven/NL*
- 09:00 **The nanoGRAVUR framework to group (nano)materials for their occupational, consumer, environmental risks based on a harmonized set of material properties**  
*W. Wohlleben<sup>1</sup>; B. Funk<sup>2</sup>; D. Göhler<sup>3</sup>; A. Haase<sup>4</sup>; B. Hellack<sup>5</sup>; K. Hund-Rinke<sup>6</sup>; C. Schumacher<sup>7</sup>; M. Wiemann<sup>8</sup>; T. Kuhlbusch<sup>9</sup>; <sup>1</sup> BASF SE, Ludwigshafen/D; <sup>2</sup> ZOZ GmbH, Wenden/D; <sup>3</sup> TU Dresden, Dresden/D; <sup>4</sup> German Federal Institute for Risk Assessment (BfR), Berlin/D; <sup>5</sup> Institut für Energie- und Umwelttechnik e.V. (IUTA), Duisburg/D; <sup>6</sup> Fraunhofer Institute IME, Schmallingenberg/D; <sup>7</sup> Institut für Arbeitsschutz der Deutschen Gesetzliche Unfallversicherung (DGUV-IFA), St. Augustin/D; <sup>8</sup> IBE R&D Institute for Lung Health gGmbH, Münster/D; <sup>9</sup> Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA), Dortmund/D*
- 09:20 **Developing a framework for assessing the human health risks of nanomaterials in commerce in Canada**  
*C. Lemieux<sup>1</sup>; D. Vladislavljjevic<sup>1</sup>; Y. Zhang<sup>1</sup>; M. Hill<sup>1</sup>; <sup>1</sup> Health Canada, Ottawa/CDN*
- 09:40 **Nano Toxicity Ranking – Pathway-based Bench Mark Dose Response Modelling to Rank Inflammogenic and Pro-fibrotic Responses of Nanomaterials**  
*S. Halappanavar<sup>1</sup>; J. Nikota<sup>2</sup>; D. Wu<sup>2</sup>; A. Williams<sup>2</sup>; U. Vogel<sup>3</sup>; <sup>1</sup> Health Canada, Ottawa, Canada/CDN; <sup>2</sup> Health Canada, Ottawa/CDN; <sup>3</sup> National Research Center for the Working Environment, Copenhagen/DK*
- 10:00 **Computational approaches to support nanomaterial grouping**  
*A. Bahl<sup>1</sup>; W. Wohlleben<sup>2</sup>; B. Hellack<sup>3</sup>; M. von Bergen<sup>4</sup>; P. Nollau<sup>5</sup>; F. Chainiaux<sup>6</sup>; M. Salmon<sup>7</sup>; A. Dinischiotu<sup>8</sup>; J. Laloy<sup>9</sup>; M. Wiemann<sup>9</sup>; A. Haase<sup>10</sup>; B. Renard<sup>11</sup>; <sup>1</sup> German Federal Institute for Risk Assessment (BfR) & Robert Koch Institute, Berlin/D; <sup>2</sup> BASF SE, Ludwigshafen am Rhein, Germany, Ludwigshafen/D; <sup>3</sup> Institute for Energy and Environmental Technology e.V. (IUTA), Duisburg/D; <sup>4</sup> Helmholtz Centre for Environmental Research - UFZ, Leipzig/D; <sup>5</sup> University Medical Center Hamburg-Eppendorf, Hamburg/D; <sup>6</sup> University of Namur/B; <sup>7</sup> StratiCELL SA, Gembloux/B; <sup>8</sup> University of Bucharest/RO; <sup>9</sup> IBR R&D gGmbH Institute for Lung Health, Münster/D; <sup>10</sup> German Federal Institute for Risk Assessment (BfR), Berlin/D; <sup>11</sup> Robert Koch Institute, Berlin/D*
- 10:15 **Weighted Gene Correlation Network Analysis to develop nanomaterial grouping strategies**  
*I. Kratochvil<sup>1</sup>; A. Bannuscher<sup>2</sup>; K. Kettler<sup>2</sup>; A. Haase<sup>2</sup>; M. von Bergen<sup>2</sup>; K. Schubert<sup>1</sup>; <sup>1</sup> Helmholtz-Centre for Environmental Research - UFZ, Leipzig/D; <sup>2</sup> German Federal Institute for Risk Assessment (BfR), Berlin/D*
- 10:30 COFFEE BREAK

## Raum 2

## Tissue barriers

- Chair: *T. Bürki-Thurnherr<sup>1</sup>; H. Bouwmeester<sup>2</sup>; <sup>1</sup> Empa - Swiss Federal Laboratories for Materials Science and Technology, St. Gallen/CH; <sup>2</sup> Wageningen University, Wageningen/NL*
- 09:00 **Behavior and effects of nanoparticles at and beyond the blood-tissue barrier in vivo**  
*M. Rehberg<sup>1</sup>; F. Krombach<sup>2</sup>; <sup>1</sup> Helmholtz Zentrum München GmbH, München/D; <sup>2</sup> LMU Munich, München/D*
- 09:20 **Developmental effect of ENM: development of a novel in vitro model for the screening of nanomaterial toxicity to embryonic tissues**  
*V. Lacconi<sup>1</sup>; A. Pietroiusti<sup>1</sup>; M. Massimiani<sup>1</sup>; L. Campagnolo<sup>1</sup>; <sup>1</sup> University of Rome „Tor Vergata“, Rome/I*
- 09:40 **Relevance of the pulmonary response for the extra-pulmonary effects of inhaled carbon nanoparticles**  
*T. Stöger<sup>1</sup>; <sup>1</sup> Helmholtz Zentrum München GmbH, Neuherberg / München/D*
- 10:00 **Nanoparticles at the lung epithelial barrier – insights into particle uptake and immune responses**  
*M. Geppert<sup>1</sup>; R. Mills-Goodlet<sup>1</sup>; B. Grotz<sup>1</sup>; M. Sageder<sup>1</sup>; M. Himly<sup>1</sup>; A. Duschl<sup>1</sup>; <sup>1</sup> University of Salzburg, Salzburg/A*
- 10:15 **Gene expression profiling of an ex vivo human placenta perfusion model following exposure to engineered nanomaterials**  
*S. Chortarea<sup>1</sup>; P. Manser<sup>2</sup>; V. Fortino<sup>3</sup>; P. Wick<sup>1</sup>; D. Greco<sup>4</sup>; T. Bürki-Thurnherr<sup>1</sup>; <sup>1</sup> Empa - Swiss Federal Laboratories for Materials Science and Technology, St. Gallen/CH; <sup>2</sup> Empa, St. Gallen/CH; <sup>3</sup> University of Eastern Finland, Joensuu/FIN; <sup>4</sup> University of Tampere, Tampere/FIN*

## SCIENTIFIC PROGRAMME

## FRIDAY, 21 SEPTEMBER 2018

Raum 1	Raum 2
<b>Particle dosimetry</b>	<b>Oral exposure and intestinal handling of nano</b>
<i>Chair: F. Cassee<sup>1</sup>; P. Demokritou<sup>2</sup>; <sup>1</sup> National Institute for Public Health and the Environment, Bilthoven/NL; <sup>2</sup> Harvard T. H. Chan School of Public Health, Boston/USA</i>	<i>Chair: J. Powell<sup>1</sup>; D. Marko<sup>2</sup>; <sup>1</sup> University of Cambridge/UK; <sup>2</sup> University of Vienna/A</i>
11:00 <b>Silver nanoparticle deposition to the lung lobes of Sprague-Dawley rat</b> <u>I. Yu<sup>1</sup>; J. Park<sup>2</sup>; J. Kim<sup>3</sup>; M. Jo<sup>3</sup>; Y. Kim<sup>1</sup>; K. Jeon<sup>1</sup>; J. Lee<sup>4</sup>; E. Fasutman<sup>4</sup>; K. Ahn<sup>5</sup>; G. Oberdörster<sup>6</sup>; <sup>1</sup> HCTm, Icheon/ROK; <sup>2</sup> Chung-Ang University, Seoul/ROK; <sup>3</sup> Hoseo University, Asan/ROK; <sup>4</sup> University of Washington, Seattle/USA; <sup>5</sup> Hanyang University, Ansan/ROK; <sup>6</sup> University of Rochester/USA</u>	11:00 <b>In Vivo Interaction of Food-Grade Titanium Dioxide Particles with Intestinal Immune Cells</b> <u>J. Robertson<sup>1</sup>; J. Wills<sup>2</sup>; M. Minitier<sup>2</sup>; R. Hewitt<sup>2</sup>; J. Powell<sup>2</sup>; <sup>1</sup> MRC - Elsie Widdowson Laboratory, Cambridge/UK; <sup>2</sup> Department of Veterinary Medicine, University of Cambridge/UK</u>
11:20 <b>Assessing the dispersion of nanocellulose fibers and crystals in biological and environmental media and its role in bioactivity</b> <u>D. Bitounis<sup>1</sup>; <sup>1</sup> Harvard University, Boston/USA</u>	11:20 <b>Synthetic Amorphous Silica (SAS) – No Adverse Effects in Lung, Liver and Intestine</b> <u>K. Weber<sup>1</sup>; A. Bosch<sup>2</sup>; C. Gopinath<sup>3</sup>; J. Hardisty<sup>4</sup>; N. Krueger<sup>5</sup>; E. McConnell<sup>6</sup>; G. Oberdörster<sup>7</sup>; <sup>1</sup> AnaPath GmbH, Oberbuchsitzen/CH; <sup>2</sup> Wacker Chemie AG, Munich/D; <sup>3</sup> Independent Consultant in Toxicology &amp; Pathology, Alconbury/UK; <sup>4</sup> EPL Inc., Research Triangle Park, North Carolina/USA; <sup>5</sup> Evonik Resource Efficiency GmbH, Hanau-Wolfgang/D; <sup>6</sup> ToxPath, Inc., Laurdale Estates Raleigh, North Carolina/USA; <sup>7</sup> The University of Rochester, Dept. of Environmental Medicine, Rochester, New York/USA</u>
11:40 <b>Dosimetry and monitoring of nanomaterials at single cell level by means of label-free techniques</b> <u>I. Estrela-Lopis<sup>1</sup>; C. Merker<sup>1</sup>; J. Böttner<sup>1</sup>; T. Venus<sup>1</sup>; T. Meyer<sup>1</sup>; V. Calcagno<sup>1</sup>; J. Keller<sup>2</sup>; R. Landsiedel<sup>2</sup>; D. Schwotzer<sup>3</sup>; O. Creutzenberg<sup>3</sup>; <sup>1</sup> Universität Leipzig/D; <sup>2</sup> BASF SE, Ludwigshafen/D; <sup>3</sup> Fraunhofer ITEM, Hannover/D</u>	11:40 <b>Water Solubility of non-surface treated Synthetic Amorphous Silica (SAS) using a dedicated OECD 105 protocol</b> <u>J. Nolde<sup>1</sup>; T. Schuster<sup>2</sup>; N. Krueger<sup>2</sup>; J. Sergent<sup>3</sup>; <sup>1</sup> GRACE Europe Holding GmbH, Worms/D; <sup>2</sup> Evonik Resource Efficiency GmbH, Hanau/D; <sup>3</sup> Solvay S.A., Brussels/B</u>
12:00 <b>Relationship between exposure and lung dose using MPPD models and particle concentration measurement techniques</b> <u>T. Hammer<sup>1</sup>; H. Fissan<sup>2</sup>; J. Wang<sup>1</sup>; <sup>1</sup> ETH Zürich/CH; <sup>2</sup> Center for Nanointegration Duisburg – Essen (CENIDE), Duisburg/D</u>	12:00 <b>Evaluating toxicity of nanoparticle exposure in gastrointestinal tract: changes in microbiota composition and induction of colitis in mice</b> <u>W. Feng<sup>1</sup>; <sup>1</sup> Institute of High Energy Physics, Chinese Academy of Sciences (CAS), Beijing/CN</u>
12:15 <b>Defining Dose Parameters of Airborne Particles in Toxicological Studies: Correlating in vivo and in vitro dosimetry</b> <u>G. Oberdörster<sup>1</sup>; <sup>1</sup> University of Rochester, NY/USA</u>	12:15 <b>Proteomic analysis of rat liver following 28 days of repeated-dose oral treatment with nanoparticulate or ionic silver</b> <u>S. Jüling<sup>1</sup>; A. Oberemm<sup>1</sup>; C. Meckert<sup>1</sup>; J. Potkura<sup>1</sup>; A. Niedzwiecka<sup>1</sup>; H. Sieg<sup>1</sup>; A. Braeuning<sup>1</sup>; A. Lampen<sup>1</sup>; <sup>1</sup> German Federal Institute for Risk Assessment, Berlin/D</u>
12:30 LUNCH BREAK	
13:30 <b>PLENARY LECTURE</b> <b>Nanoparticle Uptake by the Gut: The Endogenous Process and Hijack by by strangers</b> <u>J. Powell<sup>1</sup>; <sup>1</sup> Department of Veterinary Medicine, University of Cambridge/UK</u>	
14:00 <b>PLENARY LECTURE</b> <b>Future-proof approaches for NM risk assessment (or what is the information need from regulators and policymakers)</b> <u>M. Groenewold<sup>1</sup>; <sup>1</sup> RIVM, Bilthoven/NL</u>	
14:30 <b>AWARD CEREMONY</b>	
15:15 <b>End of the conference</b>	