

4th Joint Symposium on Nanotechnology

Nanotechnology is used as a key technology in numerous areas. The consideration of opportunities and risks will also be the focus of the 4th symposium. During the two-day event, topics such as the use of nanotechnology in textiles and packaging, its application in agriculture, the introduction of nanomaterials into the body and future-oriented assessment approaches will be presented.

The 4th Joint Symposium on Nanotechnology is organised by the German Federal Institute for Risk Assessment (BfR) together with the Fraunhofer Network Nanotechnology FNT.

Scientific committee:

Fraunhofer Network Nanotechnology (FNT)

Karl-Heinz Haas

Günter Tovar

Carsten Gellermann

German Federal Institute for Risk Assessment (BfR)

Harald Tschiche

Peter Laux

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Venue:

German Federal Institute for Risk Assessment Lecture Hall Diederendorfer Weg 1, 12277 Berlin (Marienfelde)

Directions: www.bfr.bund.de/en/location-marienfelde.html

Destination stop (www.bahn.de, www.bvg.de/en)
“Nahmitzer Damm/Marienfelder Allee (Berlin)”

Online access:

We will inform you about the access data after registration.

Registration:

www.bfr-akademie.de/english/nano2022.html

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Fraunhofer Network Nanotechnology FNT

www.nano.fraunhofer.de/en.html

4th Joint Symposium on Nanotechnology

30–31 May 2022, Berlin



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Monday, 30. May 2022

10:00–10:15 am

Welcome

Andreas Hensel, President of the German Federal Institute for Risk Assessment (BfR)

10:15–10:20 am

Organisational issues

I Micro- and nanoplastics – key issues and solutions

Session Chair: Peter Laux, BfR

10:20–10:25 am

Introduction by session chair

10:25–10:50 am

Food safety research and risk assessment of submicro- and nanoplastics

Holger Sieg, BfR

10:50–11:15 am

Sorption characteristics of polycyclic aromatic hydrocarbons and a variety of polydisperse micro- and nanoplastics

Alexander Roloff, BfR

11:15–11:40 am

Novel membrane filter cascade system for the selective analysis of nano and micro plastic particles from water and air

Paul Miclea, Fraunhofer Center for Silicon Photovoltaics CSP, Halle, Germany

11:40 am–12:05 pm

How to avoid microplastics?

Alternatives to plastic entering the environment

Marc Kreutzbruck, Institute for plastics technology University of Stuttgart, Germany

12:05–01:00 pm Lunch break

II Innovative textile materials

Session Chair: Karl-Heinz Haas, Fraunhofer Network Nanotechnology (FNT)

01:00–01:05 pm

Introduction by session chair

01:05–01:35 pm

Overview nano for textiles

Karl-Heinz Haas, FNT

01:35–02:00 pm

Overview lecture on our current developments in the field of surface functionalisation

Yvonne Zimmermann, Textilforschungsinstitut Thüringen-Vogtland e.V., Greiz, Germany

02:00–02:25 pm

Electrospun nanofiber products for cosmetic and biomedical applications

Beatrice Coltelli, University of Padua, Italy

02:25–02:50 pm

Coatings for innovative textile materials

Ferdinand Somorowsky, Fraunhofer institute for Silicate Research ISC, Würzburg, Germany

02:50–03:15 pm

Textile functionalisation and its effects on the release of silver nanoparticles into artificial sweat

Heike Romanowski, BfR

03:15–03:30 pm Coffee break

III Nano in humans (I)

Session Chair: Günter Tovar, FNT

03:30–03:35 pm

Introduction by session chair

03:35–04:00 pm

Sensitising properties of nanoparticles

Katherina Siewert, BfR

04:00–04:25 pm

Life cycle of tattooing pigments in the body: Particulate? Agglomerated? Dissolved ions?

Michael Giubudagian, BfR

04:25–04:50 pm

Influence of physiological environments on particulate substances

Ines Freese, Fraunhofer Institute for Microengineering and Microsystems IMM, Mainz, Germany

04:50–05:15 pm

Nanoparticles in dental materials

Gottfried Schmalz, Polyclinic for Dental Preservation and Periodontology, University Hospital Regensburg, Germany

05:15–05:40 pm

Nanoparticles for advanced biomaterials

Laura Saenz del Burgo Martínez, University of the Basque Country, Vitoria-Gasteiz, Spain

05:40 pm

Conclusion/end of day one

Tuesday, 31 May 2022

III Nano in humans (II)

Session Chair: Günter Tovar, FNT

09:00–09:05 am

Introduction by session chair

09:05–09:30 am

Preparation of nanoparticulate drug carriers

Nazende Günday-Türel, Head of R&D Pharma, MyBiotech GmbH, Überherrn, Germany

09:30–09:55 am

Tailored particles for the intranasal delivery of APIs – treatment of diseases of the central nervous system

Carmen Gruber-Traub, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart Germany

IV Safety/risk assessment of nanomaterials

Session Chair: Harald Tschiche, BfR

09:55–10:00 am

Introduction by session chair

10:00–10:30 am

Harmonised guidance for characterisation and testing of nanomaterials

Thomas Kuhlbusch, Federal Institute for Occupational Safety and Health, Dortmund, Germany

10:30–10:55 am

Solubility/Surface reactivity testing: chances and challenges

Benjamin Krause, Charlotte Kromer, BfR

10:55–11:10 am Coffee break

11:10–11:35 am

Establishing an *in vitro* fibre toxicity test strategy to support risk assessment and facilitate grouping

Rico Ledwith, BfR

11:35 am–12:00 pm

3D printing –

evaluating particle emissions of a 3D printing pen

Frank Bierkandt, BfR

12:00–01:00 pm Lunch break

V Nanotechnology in agriculture

Session Chair: Carsten Gellermann, FNT

01:00–01:05 pm

Introduction by session chair

01:05–01:35 pm

Overview of nanotechnology for plant agriculture

Thilo Hofmann, Centre for Microbiology and Environmental Systems Science, University of Vienna, Austria

01:35–02:00 pm

Sustainable agriculture through multidisciplinary seed nanoprimer: prospects of opportunities and challenges

Ajay Vikram Singh, BfR

02:00–02:25 pm

Printed ion-selective sensors for precision agriculture

Michael Jank, Fraunhofer Institute for Integrated Systems and Device Technology IISB, Erlangen, Germany

02:25–02:50 pm

Nanotechnological detectors for mycotoxins in cereals

Florian Schröper, Fraunhofer Institute for Molecular Biology and Applied Ecology IME, Aachen, Germany

02:50–03:15 pm

Detection of particulate bullet residues in wild and cultivated plants

Julia Steinhoff-Wagner, BfR

03:15–03:30 pm Coffee break

VI Safety of innovative packaging for consumers

Session chair: Alexander Roloff, BfR

03:30–03:35 pm

Introduction by session chair

03:35–04:00 pm

New nano-functional coatings for shrink films

Stefan Schießl, Fraunhofer Institute for Process Engineering and Packaging IVV, Freising, Germany

04:00–04:25 pm

Update on nanomaterials in food contact materials

Stefan Merkel, BfR

04:25–04:50 pm

Mechanochromic shear-stress indicator supraparticles in thin coatings for food packaging

Sarah Wenderoth, Fraunhofer Institute for Silicate Research ISC, Würzburg, Germany

04:50 pm

Farewell