Fraunhofer
NANOTECH

FRAUNHOFER NANOTECHNOLOGY ALLIANCE

# 3RD JOINT SYMPOSIUM ON NANOTECHNOLOGY

## APRIL 9 – 10, 2019

The Fraunhofer Alliance on Nanotechnology, the Fraunhofer Alliance Food Chain Management, and the German Federal Institute for Risk Assessment BfR invite you to their third Joint Symposium on Nanotechnology in spring 2019. This time, the event is hosted by the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB in Stuttgart.

The focal points of the symposium range from nanotechnology in medicine to applications in the food industry or water treatment to applications in the field of energy and construction.

**MORE INFORMATION AND REGISTRATION**
*www.igb.fraunhofer.de/json*

Please consider the participation fee of 120 Euro.

**CONTACT**

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Fraunhofer
FOOD CHAIN

BfR
Bundesinstitut für Risikobewertung

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## APRIL 9 – 10, 2019

**Tuesday, April 9, 2019**

10:30 – 10:40 Uhr
**Welcome note.**
Dr. Markus Wolperdinger, Fraunhofer Institute for Interfacial Process Engineering and Biotechnology IGB (Stuttgart, Germany)

**Session I:**
**Biokinetics and mechanistic toxicology of nanomaterials (Chairperson Prof. Dr. Dr. Andreas Luch)**

10:40 – 10:45 Uhr
**Introduction to Session I.**
Prof. Dr. Dr. Andreas Luch, German Federal Institute for Risk Assessment BfR (Berlin, Germany)

10:45 – 11:10 Uhr
**Avoiding of animal testing: status and availability of *in vitro* systems.**
Dr. Otmar Schmid, Helmholtz-Zentrum Munich – German Research Center for Environmental Health (München, Germany)

11:10 – 11:35 Uhr
**Fate of aerosolized nanoparticles: The influence of surface active substances on lung deposition and respiratory effects.**
Frank Bierkandt, BfR (Berlin, Germany)

11:35 – 12:00 Uhr
**Stable isotope tracing of engineered nanoparticles - concepts, methods and (kinetic) applications.**
Prof. Dr. Mark Rehkämper, Imperial College London (London, United Kingdom)

12:00 – 13:10 Uhr
**Lunch break / Guided Lab Tour I**

13:10 – 13:35 Uhr
**Graphenes / MWCNT toxicity – Two-tiered *in vitro / in vivo* approach.**
Dr. Otto Creutzenberg, Fraunhofer Institute for Toxicology and Experimental Medicine ITEM (Hannover, Germany)

13:35 – 14:00 Uhr
**Genotoxicity of metallic nanoparticles.**
Dr. Valerie Fessard, Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail ANSES (Fougère, France)

14:00 – 14:25 Uhr
**Al toxicology and organ burden.**
Prof. Dr. Andrea Hartwig, Karlsruhe Institute of Technology KIT (Karlsruhe, Germany)

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**Session II: Food / Water**
**(Chairperson Dr. Roland Franz)**

14:25 – 14:30 Uhr
**Introduction to Session II.**
Dr. Roland Franz, Fraunhofer Institute for Process Engineering and Packaging IVV (Freising, Germany)

14:30 – 14:55 Uhr
**Is Nano released from food packaging?**
Dr. Roland Franz, Fraunhofer IVV (Freising, Germany)

14:55 – 15:20 Uhr
**Risk assessment of the application of nanoscience and nanotechnologies in the food and feed chain.**
Dr. Reinhilde Schoonjans, European Food and Safety Authority EFSA (Parma, Italy)

15:20 – 15:35 Uhr
**Coffee break**

15:35 – 16:00 Uhr
**Nano-sized delivery systems for food applications.**
Dr. Ralf Greiner, Max-Rubner-Institute (Karlsruhe, Germany)

16:00 – 16:25 Uhr
**Nanostructured ceramic membranes for water treatment.**
Dr.-Ing. Hannes Richter, Fraunhofer Institute for Ceramic Technologies and Systems IKTS (Dresden, Germany)

**Session III Nanomedicine**
**(Chairperson Prof. Dr. Günter Tovar)**

16:25 – 16:30 Uhr
**Introduction to Session III.**
Prof. Dr. Günter Tovar, Fraunhofer IGB (Stuttgart, Germany)

16:30 – 16:55 Uhr
**Biofabrication, 3D-printing and additive manufacturing.**
Prof. Dr. Jürgen Groll, Julius-Maximilians-Universität JMU (Würzburg, Germany)

16:55 – 17:20 Uhr
**Selection of drug carriers.**
Dr. Tanja Hansen, Fraunhofer ITEM (Hannover, Germany)

17:20 – 17:45 Uhr
**Nanomedicine – Scientific breakthroughs or more of the same?**
Prof. Dr. Pauline Iden, Nanid Scientific Consulting (Dudenhofen, Germany)

17:45 – 17:50 Uhr
**Conclusions Day One.**

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## APRIL 9 – 10, 2019

**Wednesday: April 10, 2019**

08:30 – 08:35 Uhr
**Re-Opening Session III.**
Prof. Dr. Günter Tovar, Fraunhofer IGB

08:35 – 09:00 Uhr
**Local and systemic exposure to metallic nanoparticles from orthopedic implants.**
Dr. Janosch Schoon, Charité (Berlin, Germany)

09:00 – 09:25 Uhr
**Nose-to-brain-patch – circumventing the blood-brain barrier.**
Dr. Carmen Gruber-Traub, Fraunhofer IGB (Stuttgart, Germany)

**Session IV: Fate of Nanomaterials/Ökotox/Grouping (Chairperson Dr. Peter Laux)**

09:25 – 09:30 Uhr
**Introduction to Session IV.**
Chairperson Dr. Peter Laux, BfR (Berlin, Germany)

09:30 – 09:55 Uhr
**Establishing nanomaterial grouping: current status and lessons learnt from different projects.**
Dr. Andrea Haase, BfR (Berlin, Germany)

09:55 – 10:20 Uhr
**Coffee break**

10:20 – 10:45 Uhr
**Frameworks and case studies to support grouping for industrial and regulatory purposes: GRACIOUS & nano-GRAVUR projects.**
Dr. Wendel Wohlleben, BASF SE (Ludwigshafen, Germany)

10:45 – 11:10 Uhr
**Grouping concept for nanomaterials regarding fate and effect of nanomaterials.**
Dr. Kerstin Hund-Rinke, Fraunhofer Institute for Molecular Biology and Applied Ecology IME (Schmallenberg, Germany)

11:10 – 11:35 Uhr
**Critical applications and exposure scenarios of engineered $CeO_2$-, $SiO_2$- and Ag-nanomaterials in Germany.**
Dr. Bernd Giese, University of Natural Resources and Life Sciences BOKU (Wien, Austria)

11:35 – 12:00 Uhr
**Safe use of nanomaterials for drinking and industrial water purification.**
Prof. Dr. Paul Westerhoff, Arizona State University (Tempe, Arizona, USA)

12:00 – 13:20 Uhr
**Lunch break / Guided Lab Tour II**

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**Block V: Energy / Construction**
**(Chairperson Dr. Karl-Heinz Haas)**

13:20 – 13:25 Uhr
**Introduction to Session V.**
Dr. Karl-Heinz Haas, Fraunhofer Institute for Silicate Research ISC (Würzburg, Germany)

13:25 – 13:50 Uhr
**Perovskite solar cells, a novel development in photovoltaics.**
Dr. Andreas Hinsch, Fraunhofer Institute for Solar Energy Systems ISE (Freiburg, Germany)

13:50 – 14:15 Uhr
**Nanomaterials for energy storage.**
Dr. Henning Lorrmann, Fraunhofer ISC (Würzburg, Germany)

14:15 – 14:40 Uhr
**Nanostructured semiconductors for solar energy conversion.**
Prof. Dr. Roland Marschall, University of Bayreuth (Bayreuth, Germany)

14:40 – 15:05 Uhr
**Overview on nanomaterials for construction.**
Dr. Karl-Heinz Haas, Fraunhofer ISC (Würzburg, Germany)

15:30 – 15:50 Uhr
**Coffee break**

15:50 – 16:15 Uhr
**Life cycle approach for nanoparticle-based products used in house coatings to balance benefits and risks.**
Claudia Som, EMPA Materials Science and Technology (St. Gallen, Switzerland)

**Session VI: Registration / Regulation**
**(Chairperson Dr. Hund-Rinke)**

16:15 – 16:20 Uhr
**Introduction to Session VI.**
Dr. Kerstin Hund-Rinke, Fraunhofer IME (Schmallenberg, Germany)

16:20 – 16:45 Uhr
**Analysis of nanomaterials in food.**
Dr. Karin Löschner, Technical University of Denmark (Lyngby, Denmark)

16:45 – 17:10 Uhr
**The European Commission's definition of nanomaterials: regulatory implementation and challenges.**
Dr. Hubert Rauscher, European Commission, DG Joint Research Centre (Ispra, Italy)

17:10 – 17:35 Uhr
**Standardization in nanotechnology – status and requirements review from the occupational safety and health perspective.**
Dr. Wolfgang, Luther, VDI Technologiezentrum (Düsseldorf, Germany)

17:35 – 17:45 Uhr
**Conclusions (Fraunhofer/BfR)**

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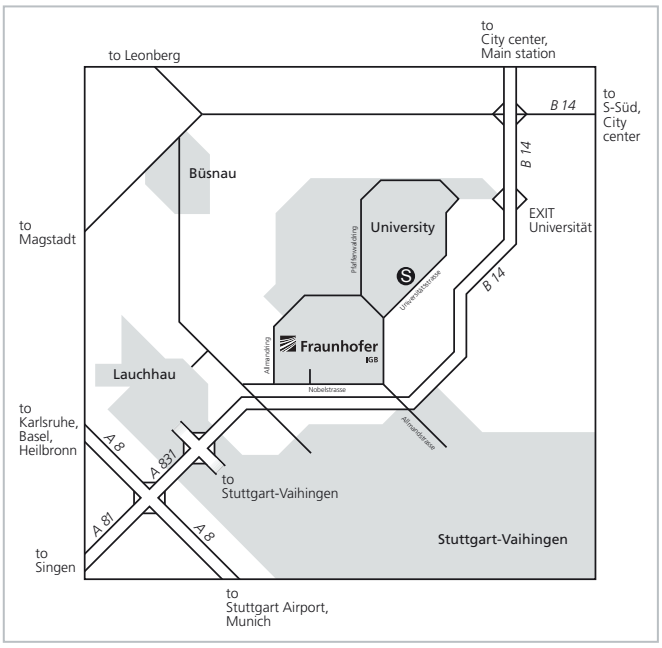
# DIRECTIONS

The symposium is hosted by the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB:

**Adress**
**Fraunhofer-Institute for Interfacial Engineering and Biotechnology IGB**
Nobelstr. 12
70569 Stuttgart
*www.igb.fraunhofer.de*




**By train**
From Stuttgart's main station (Hauptbahnhof), take either the S-Bahn (city rail) S1 (towards Herrenberg), S2 or S3 (both towards Airport), all departing from platform 101 on the lower level underneath the train station. Get off at the "Universität" station and follow the signs there to the "Wohngebiet Schranne/Endelbang/Nobelstrasse" exit. You are now on Universitätsstrasse where you will find signs directing you to "Fraunhofer-Gesellschaft" (approx. 650 m). Alternatively, take bus no. 84 or 92 from the "Universität" station to the "Nobelstrasse" bus-stop. Plan approx. 30 minutes from the main station to the IGB building (this includes walking time).

**By car**
Leave motorway A 81 or A 8 at the "Stuttgarter Kreuz" junction. Take the A 831 in the direction of "Stuttgart Zentrum" (City center) and exit at "Universität". Turn left at the traffic lights onto Universitätsstrasse and keep straight on until Universitätsstrasse becomes Nobelstrasse after a sharp bend to the right. After a further 400 m, the Fraunhofer-Institutszentrum will appear on the right.

**By air**
From Stuttgart airport, take the S-Bahn (city rail) S2 or S3 in the direction of Stuttgart-Vaihingen/Hauptbahnhof. Get off at the "Universität" station and continue as described directly above. A taxi from the airport will cover the distance of 14 km in approx. 20 minutes.