

IPXIII & NanOEH

MONDAY 15TH MAY

14:30 Registration, exhibition and Poster Set-up

15:30 Opening remarks
Conference Chairs & BOHS President

15:45 **Keynote**
An overview of carbon nanotube carcinogenesis from mouse inhalation data
Prof. Jun Kanno (National Institute of Health Sciences, Japan)

16:30 **1A: *In vivo* Nanotoxicology**

Carcinogenicity risk assessment of various carbon nanotubes by intra-tracheal intra-pulmonary spray (TIPS) dosing followed by 2-year observation.

Hiroyuki Tsuda

Persistent macrophage depletion and arrested replenishment is dependent on carbon nanotube type as shown by single cell transcriptomics.

Carola Voss

Chronic Immunotoxicity of Multi-Walled Carbon Nanotubes on Macrophages via MMP-12.

Naozumi Ishimaru

Nitrogen-Doped Multi-Walled Carbon Nanotubes show attenuated Pathogenicity in a Mouse Model of Pleural Exposure.

Marion MacFarlane

1B: Silica Hazard

Biomonitoring for respirable crystalline silica: Determination of Si-containing particles in exhaled breath condensate using single particle inductively coupled mass spectrometry.

Jackie Morton

Acute and chronic effects on inflammatory markers by quartz and particle exposure in the iron foundry environment.

Alexander Hedbrant

A Case for Amorphous Silica Nanoparticle Exposure in the Development of Chronic Kidney Disease of Unknown Etiology.

Jared Brown

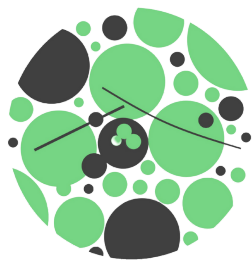
Nearly free surface silanols: from silica towards a new paradigm for particle toxicity.

Cristina Pavan.

17:30 Day One Close

18:00 Welcome reception

Please note the programme is subject to change



IPXIII & NanOEH

TUESDAY 16TH MAY

09:00 **Keynote**
Characterising microplastic exposure and hazards: challenges and opportunities.
Dr. Stephanie Wright (Imperial College London, UK)

09:45

2A: Micro-/Nano-plastics and Human Health

Evaluation of the toxicity, alveolar cell accumulation and clearance of PET and PS nanoplastics in mouse lungs.

Thomas Loret

The relative toxicity and bioreactivity of ambient microplastic pollution to human alveolar lung epithelial cells with and without urban PM2.5.

Julia Laskovska

Elucidating the Impact of Inhaled Micro-, Nanoplastics (MNPs) from Surgical Face Masks In Vitro.

Lewis Hodgetts

Exposures to Airborne Human-Respirable Microplastic Particles.

Alison Elder

2B: Exposure Modelling

Nano Exposure Quantifier (NEQ) - A quantitative tool for assessing exposure in the workplace.

Wouter Fransman

Combination of screening and higher tier modelling approaches for estimating inhalation exposure during spray applications.

Stefan Hahn

Novel Stoffenmanager® algorithms for quantitative estimation of exposure to respirable dust and quartz in construction, formulating and metal manufacturing industry.

Hicham Zilaout

Meteorological influence on measurement strategy and estimated respirable dust and respirable crystalline silica exposure levels within the European Minerals Industry.

Nicola Blagrove-Hall

10:45

Break & Exhibition

11:15

3A: Particle Measurement Evaluation

Microplastic References for Inhalation Studies.

Katherine Santizo

Laboratory testing of an innovative respirable sampler and chemical analysis of filters at multiple research facilities.

Delphine Bard

3B: Alternative Methods for Toxicology Testing

Advancing In Vitro Airway Models for Engineered Nanomaterial Genotoxicity Testing.

Stephen J. Evans

In vitro cytokinesis block micronucleus (CBMN) assay to evaluate the genotoxicity of multicomponent nanomaterials – a tiered testing approach.

Angela Saccardo

Colorimetric Assessment of Household Settled Dust Captured on Silicon Nanomembranes.

Samantha Romanick

Finding optimal methods for SbD hazard testing of nanomaterials: The effect of cell model and exposure method on cytokine response.

Nienke Ruijter

A test chamber to quantify emission factors for welding fumes.

Bernadette Quemerais

Human lung organoids predict response to carbon-based nanomaterials and model pulmonary fibrosis.

Rahaf Issa.

12:15

Lunch & Exhibition

13:15

Session 4: Poster flash presentations

15:00

Break - Official Poster Session

15:45

5A: Adverse Outcome Pathways

Metabolomics study of a lung model exposed to different ultrafine particles (UFP) aerosols.

Rasha Alsaleh

Lung single cell transcriptomics to guide the development of AOP anchored cell-based assays in response to nanoparticle exposure.

Lianyong Han

Longitudinal Profiling of Carbon Nanotube-induced Sporadic Mesothelioma Development: defining the Adverse Outcome Pathway for Disease Progression.

Joaquin Zacarias Cabeza

Effect of multi-walled carbon nanotube exposure on wild type and p53+/- rat lungs.

Laurent Gaté

5B: Particle Risk and Construction Materials

Safe-by-design advanced materials: A case study on paint formulation

Neeraj Shandilya

Toxicity Assessment of a Carbon Nanotube Embedded Concrete

Aaron Erdley

Fibre-aerogel-mats for façade insulation: How to guide SSbD development by screenings?

Wendel Wohlleben

A task-based approach to nanomaterials exposure assessment in the construction trades

Gavin West

16:50

Keynote

Adverse Outcome Pathways – a framework for designing Novel Approach Methods for safety assessment

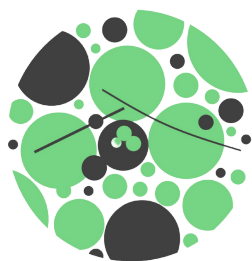
Dr. Sabina Halappanavar (Health Canada, Canada)

17:30

Day 2 Close

19:00

Social Event: Conference dinner – Hilton Hotel



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WEDNESDAY 17TH MAY

09:00

6A: Non-exhaust Particle Health Effects

Toxicity of aircraft engine emissions in Calu-3 human cells in air-liquid interface condition.

Gloria Melzi

Physicochemical Characterisation and Potential Health Effects of Tyre Wear Particles

David O'Loughlin

Dual proteomic exploration of the mechanisms underlying brake dust-induced impairment of phagocytic capacity in macrophages

Liza Selley

Tyre wear particle sampling position during real-world driving impacts bioreactivity on human lung alveolar epithelial cells in vitro

Toyosi Akande

Differential alveolar toxicity of exhaust and non-exhaust fine particulate matter

James Parkin

Photochemical aging increases toxicity of EURO 6 gasoline car exhaust in lung epithelial cells at the air-liquid interface

Mathilde N. Delaval

6B: Heart, Mind & Body

(Nano)particle exposure, acute phase response and cardiovascular disease.

Ulla Vogel

Biological effects of Benzo-[A]-Pyrene and cerium nanoparticles on the human placental barrier

Gaëlle Deval

Placental-fetal distribution of carbon particles in a pregnant rabbit model after repeated exposure to diluted diesel engine exhaust.

Eva Bongaerts

Behavior and effect of nanoparticles on neutrophil recruitment in the pulmonary microcirculation.

Chenxi Li

An approach to test effects on secondary organs via lung cells exposed at the air liquid interphase.

Espen Mariussen

Inhalation exposure to traffic-related air pollution accelerates Alzheimer's disease-like pathology in a murine model.

Roel P. F. Schins

10:30

Break & Exhibition

11:00

7A: Air Pollution and Human Health

Using advanced in vitro approaches to elucidate the differential toxicity of nitrogen dioxide and particulate matter in ambient air pollution

Joshua Bateman

7B: Occupational Exposure Surveys

Engineered Nanoparticle Resuspension Contributing to Inhalation Exposure from Contaminated Protective Clothing

Candace Tsai

Assessment of gene expression modulation using graph analysis on pairwise expression ratios. Impact of PM2.5-0.3 on 3-D bronchial epithelium model.

Philomène Despréaux

Workplace exposure to ultrafine particles, dust, and chemicals during plastic production with recycled plastics

Patrick Ferree

Effect of Atmospheric Aging on Soot Particle Toxicity in Airway Epithelial-Endothelial Co-culture Models at the Air-Liquid Interface

Svenja Offer

Emission and exposure characterization during metal waste recycling

Christina Isaxon

TRPA1/V3-dependent regulation of airway epithelial cell damage and repair triggered by wood/biomass smoke particulate

Christopher Reilly

Exposure to soot, measured as black carbon and PAH, in Swedish chimney sweeps

Therese Klang

Keynote

12:05

Linking Air Pollution to Mortality: The role of the hallmarks of environmental insults.
Prof. Anette Peters (Universität München, Germany)

12:45

Lunch & Exhibition

13:45

8A: 2D Materials

8B: Risk Management Frameworks

Analysis of the material properties of importance in the classification of toxicity of graphene nanomaterials.

Jenny R. Roberts

Setting targets for particles in outdoor air: advice from the Committee on the Medical Effects of Air Pollutants (COMEAP)

Anna Hansel

Evaluating the risks of prolonged exposure to graphene oxide on healthy and Streptococcus pneumoniae infected 3D reconstituted human lung cultures

Tina Buerki-Thurnherr

Human hazard assessment of nanomaterials: Supporting risk decision making through interlaboratory trial data

Michael Burgum

First-in-human controlled exposure to inhaled graphene oxide

Mark Miller

A phase-gate nano-risk governance approach reflecting international standards

Keld Alstrup Jensen

Graphene – exposure and emissions at two pilot plants

Håkan Tinnerberg

A Framework for Grouping inhaled Multi-Component Nanomaterials to streamline hazard assessment.

Vicki Stone

14:45

Session 9: Poster flash presentations

15:15

Break & Exhibition

15:45

10A: Occupational Health and Biomarkers

Exposure to metals and particles in welding and episodes of asthma/wheeze and rhinitis: a Canadian cohort study.

Nicola Cherry

The Adverse Health Effects of Exposure to PM2.5 on the London Underground

Justie Mak

Short-term exposure to nanomaterials and effect biomarkers at local and systemic levels: dose-response modelling results from the NanoExplore project

Irina Guseva Canu

Urinary metals exposure and oxidative stress biomarkers in nanotechnology workers: results from the NanoExplore project

Valeria Bellisario

10B: Risk Management Evaluation

An approach towards in vitro-based human toxicity effect factors for the Life Cycle Impact Assessment of inhaled low-solubility particles.

Peter Wick

Safe-by-Design guidance for MultiComponent Nanostructured Materials (MCNM): heavy metals containing perovskites

Veronica Di Battista

The InnoMat.Life Extended Fibre Human Risk Banding Scheme

Andrea Haase

Toward a general approach to risk assessment of naturally occurring asbestos and asbestos-like minerals: the case of fibrous antigorite

Francesco Turci

16:50

Keynote

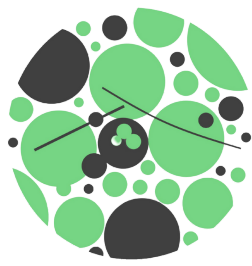
Understanding Exposure, Hazard Identification, and Human Health Effects: How Ultrafine Particle Toxicology Influenced Occupational Safety and Health.

Dr. Aaron Erdely (National Institute for Occupational Safety and Health (NIOSH), US)

17:30

Day 3 Close

Evening at leisure



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THURSDAY 18TH MAY

09:00

11A: Metal and Metal Oxides Particle Risk

Understanding how CeO₂ nanoparticles modulate bleomycin-induced inflammatory and fibrotic events in both in vivo and in vitro models

Chang Guo

Solubility and the toxicity of metal oxide nanoparticles: Looking through the lens of toxicogenomics and DNA damage

Andrey Boyadzhiev

Murine expression of humanized Toll-like receptor 4 augments local and systemic immune responses following oropharyngeal aspiration of nickel oxide nanoparticles

Katie Roach

Downregulation of ABCG1 and ABCG4 transporters by rare earth oxide nanoparticles induces the pulmonary alveolar proteinosis

Soyeon Jeon

Evaluating the potential exposure to metal fine and nano particles generated during wire and powder Laser Metal Deposition

Roberta Perneti

Insights from workplace exposure campaigns during metal 3D printing procedures with portable equipment to monitor ultrafine particles emissions

Carla Martins

11B: Air Pollution: Susceptible Scenarios

Effects of indoor air pollution on both a healthy and “an inflamed” model of the alveolar barrier in vitro.

Kirsty Meldrum

2D-hexagonal boron nitride and lung exposure: Exploring long-term effects in healthy versus asthmatic human lung in vitro model

Govind Gupta

Understanding the effects of quartz aerosols on human airway 3D models combined with primary macrophages

Sandeep Keshavan

Endotoxin exacerbates the NLRP3-dependent inflammatory potency of Saharan dust

Gerrit Bredeck

What is the association between smoking or vaping and COVID-19 susceptibility?

Rachel Bowsher

Use of a human bronchial epithelium model to assess the impact of PM_{2.5} exposure on the severity of viral infections

Chloé Chivé

10:30

Break & Exhibition

11:00 **12: Analytical Techniques for Particle Risk Assessments**

Raman Spectroscopy to Monitor Short-Term and Transient RCS Aerosol Exposure

Zoltán Szakács

Monitoring diesel exhaust particles by lock-in thermography

Ruiwen He

Multimodal imaging and artificial intelligence unveil hot-spot deposition, bronchial/alveolar dose and cellular fate of biopersistent nanoparticles in the lung

Lin Yang

Alveolar macrophage degranulation initiates the spatially restricted innate immune response during ventilator-assisted nanoparticle inhalation

Qiongliang Liu

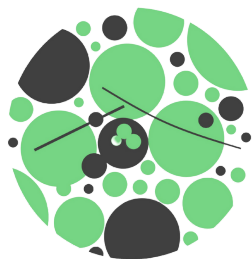
Keynote

12:05 **Useful measurements of air pollutants for evaluating their impacts on health.**
Prof. Gordon McFiggans (University of Manchester, UK)

12:45 **Prize Giving and Closing Remarks**
Conference Chairs

13:15 **Lunch**

13:45 **Close of Conference**



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POSTER LIST

An introduction to the SUNSHINE project investigating the risk assessment of multicomponent nanomaterials.	Neil Hunt
Exploring the carcinogenic potential of nanoplastics.	Josefa Domenech
Construction and characterization of a thermal spray coating aerosol generator.	Eun Gyung Lee
Can the indoor environment influence the toxicity of indoor and outdoor air pollution particulates?	Kirsty Meldrum
Does developmental status and age of the lung influence the hazard elicited by exposure to both indoor and outdoor pollutants?	Kirsty Meldrum
Development of an integrated exposure pathway model for health impact assessment of traffic ultrafine particles (H2020 ULTRHAS-project)	Johan Øvrevik
An advanced triple cell co-culture of the alveolar epithelial barrier for inhalation hazard assessment in vitro	Joshua Bateman
Functional requirements to develop a new risk assessment model for exposure to biological agents	Carlota Alejandre Colomo
The Mechanisms of Allergy to Fungal Bioaerosols in the Lung	Emma-Jane Goode
Particle and VOC emissions during the thermal processing of plastics to make filaments for 3D-printing	Gunilla Runström Eden
Cognitive decline, dementia and air pollution: A report by the Committee on the Medical Effects of Air Pollutants	Naomi Earl
Investigating the co-exposure of micro(nano)plastics and indoor/outdoor particulate matter using an alveolar barrier in vitro model	Olivia Whittle Wright
Particles in outdoor air: are they all equal?	Naomi Earl
Development of a physiologically-relevant in vitro model of the lung, incorporating novel peptide hydrogels as biomimetic extracellular matrix scaffolds	Fiona Murphy
Activation of the Aryl hydrocarbon Receptor - a major mode of combustion particle toxicity?	Johan Øvrevik
TRAAC framework and tool for regulatory acceptance and wider usability of tools/methods for safe innovation and sustainability of nanomaterials	Neeraj Shandilya

**Assessing exposure to fungal bioaerosols in transport environments:
Analysing fungal composition of passive dust samples collected in UK
railway stations** **Emma Marczylo**

**Assessing translocation of diesel particles across permeable insert
membranes with different pore sizes** **Gowsinth
Gunasingam**

**Identifying physicochemical properties of nanomaterials as potential drivers
of oral hazard and their modulation by safe and sustainable-by-design
strategies** **Adriana Roriguez-
Garraus**

**Transferability and reproducibility of exposed air-liquid interface co-culture
lung models** **Flemming Cassee**

**Co-culture of human type I and type II pneumocyte cell lines as a model of
alveolar epithelium for toxicity testing** **Sonja Boland**

**Establishing a physiologically relevant in vitro airway model to assess the
impacts of environmental exposures, like smoking, on COVID-19
susceptibility.** **Rachel Bowsher**

**The impact of cell passage number on elucidating toxicological mechanisms
in vitro** **Katie Marchant**

**Cross Government, Industry and Academia Knowledge Sharing Workshops on
Opportunities for Advanced Materials (AM) in the UK** **Delphine Bard**

**Risk assessment and management of exposure in a nanotechnology
industrial plant: tools and exposure monitorization following a tiered
approach** **João Laranjeira**



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POSTER FLASH LIST

The following posters will also have a presentation in the poster flash presentation sessions

Humanising nanotoxicology testing: Moving towards animal-free approaches for hazard assessment of nanomaterials	Fiona Murphy
An introduction to the SbD4Nano project	Neil Hunt
Characterization of aerosolized particles generated during cutting of carbon nanotubes-embedded concrete	Eun Gyung Lee
Validation of an Aerosol Exposure-Air Liquid Interface (AE-ALI) system to facilitate realistic hazard identification of nano-sized aerosols	Alison Buckley
Changes in exposure and related health effects after preventive actions at black steel welding environments	Stefan Ljunggren
The ULTRHAS project: ULtrafine particles from TRansportation – Health Assessment of Sources	Johan Øvrevik
An investigation into mechanisms responsible for (geno)toxicity induced by exposure to industrially-relevant multi-component nanomaterials and high aspect ratio nanomaterials	Sian Brooks
Investigation of workplace silica exposures using novel samplers and methods	Samantha Hall
Establishing a physiologically relevant in vitro airway model to assess the health impacts from different fungal species	Emma-Jane Goode
Elucidating an Association between Air pollution and Mental Health	Ella Christoforou
Exposure assessment and health surveys at metal additive manufacturing facilities	Maria Assenhøj
Retained particle surface area drives inflammation in rat lungs following acute, subacute, and subchronic inhalation of nanomaterials	Frédéric Cosnier
Use of exposure data to evaluate the impact of the BOELV on industry practices; case study ASW/RCF.	Dawn Webster
Impact of carbon nanoparticle-triggered gammaherpesvirus reactivation on lung immunity and diseases	Eva M. Guenther
Effects of Graphene Oxide, Molybdenum Disulfide and Boron Nitride on Human Dendritic Cells	Hazel Lin

Sugarcane Ash and Sugarcane Ash-Derived Silica Nanoparticles Alter Mitochondrial Function and Metabolic Activity in Human Proximal Tubular Kidney Cells	Arthur Stem
On the role of chemical identity over the size of model ultrafine particles driven (geno)-toxicity	Jana Pantzke
Inhalation exposure of copper particles - Quantitative differentiation between copper oxides and metallic copper	Katharina Bluemlein
Impact of air pollution on lung immune responses in a mouse model of influenza infection	Lydie Martín-Faivre
Combined exposure to road wear particles and diesel exhaust particles induces enhanced pro-inflammatory responses in cells of the human airways	Vegard Sæter Grytting
Aerosolized particulate matter from fragmentation of Carbon Nanotube-enhanced concrete	Camilla Abrahamsson
Bugs and our airways: Successful development and evaluation of a school outreach project	Emma Marczylo
Development of methods for exposure- and risk assessment of graphene	Tobias Storsjö
Linking the molecular mechanisms of alveolar macrophage cell death induced by inhaled nanoparticles with the subsequent pathological outcome	Hongyu Ren
MetalSafety – In vitro, ex vivo and in vivo investigations on particulate and nanofibrous metal compounds	Florian Schulz
Influence of the physicochemical properties of multi-walled carbon nanotubes on their toxicity in lung cells	Carole Seidel
Assessment of in vitro toxicity of inhalable incidental nanoparticles originating in the ceramic industry	Verónica Moreno Martín
Inter- and intra-laboratory comparison of 6 dustiness testing methods: towards the development of an OECD testing guideline	Keld A. Jensen
Development of a direct reading instrument for oxidative potential measurement in air	Antonio Toto
An evaluation of uncertainty within control banding tools used for occupational exposure assessment of nanoforms and nano-enabled products	Rebecca Nebbia
Hybrid Nanostructures Using Polymers to Reduce the Toxicity of Inorganic Luminescent Nanomaterials and Organic Dyes	Masakazu Umezawa
Lung clearance kinetics and biotransformation of iron oxide nanoparticles: the role of particle dissolution	Jiyoung Jeong

Analysis of debris generated during the process of cutting and grinding of carbon fibers-reinforced plastics

Gaku Ichihara

Occupational exposure to particles measured by nanoparticles tracking analysis (NTA) in exhaled breath condensate (EBC).

Marco Panizzolo

Cumulative occupational exposure to nanoparticles, inflammatory biomarkers and respiratory health in the NanoExplore cohort

Giulia Squillacioti

Development of a test method to determine inhalation exposure of microplastic particles when reusable disposable masks in place

Jhy-Charm Soo

Top-down preparation and characterization of crystalline nanosilica for toxicological investigations

Chiara Bellomo

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