

INHALED PARTICLES AND INTERNATIONAL PARTICLE TOXICOLOGY CONFERENCE

MONDAY 11TH MAY

14:00 Registration, Exhibition and Poster Set-up

15:00 Welcome
Conference Chairs (Dr Matthew Boyles, Edinburgh Napier University, Edinburgh and Dr Fiona Murphy, University of Strathclyde, Glasgow) & BOHS President, Adrian Parris

15:30 Keynote
Effects of traffic related air pollution on health
Prof. Jill Belch, University of Dundee, Scotland

16:20

Room A - Queen Mary
1A: Indoor Air Pollution

Combined Microplastic and Indoor or Urban Dust Exposure Potentiates Inflammatory Responses in a Human Alveolar Model In Vitro

Joshua Bateman

Indoor Dust-Induced Cytotoxicity in Dynamic Lung-on-Chip: Role of Exposure Duration and Mechanical Cues

Vânia Vilas-Boas

Unravelling the Impact of Airborne Fibers released from Natural, Biobased and Synthetic Textiles on Human Lung Health

Stephanie Eitner

In vitro exposure of human lung and macrophage cells to chemical and nanoplastic particle mixtures relevant to indoor environments

Isobel Meadows

Room B - Queen Elizabeth II
1B: Exposure Measurement

Mineral Dusts from Racetrack Soils: Composition, Surface Reactivity, and Cytotoxicity within a One Health Framework

Jasmine Rita Petriglieri

Characterisation of airborne particulate exposure at a gold mine tailings dam using real-time personal dust monitors and other methods

Stefan Linde

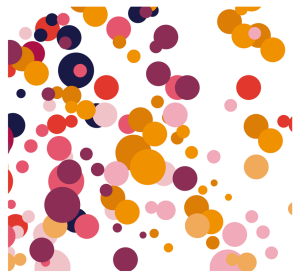
An evaluation of validation schemes for the direct-on-filter X-ray diffraction method for analysis of respirable crystalline silica

Steven Verpaele

17:30 Honorary Lecture: A history of the Inhaled Particles symposia
John Cherrie

18:30 - 20:00 Welcome drinks reception, Pizza & beer
Shilling Brewery, 92 W George St, Glasgow G2 1PJ

Please note the programme is subject to change



INHALED PARTICLES AND INTERNATIONAL PARTICLE TOXICOLOGY CONFERENCE

TUESDAY 12TH MAY

08:30 Registration

09:00 Keynote
Detecting Nanoplastics – challenges for environmental analysis
Dr. Florian Meirer, Utrecht University, The Netherlands

09:50

Room A - Queen Mary
2A: Toxicity and Micro and Nanoplastics

Comparative evaluation of ROS–NLRP3 inflammasome-mediated pulmonary toxicity induced by primary and secondary microplastics

Soyeon Jeon

Heat-treated PTFE nanoplastics cause chronic colon inflammation in mice

Aswin Kuttykattil

In vitro Toxicity of Micro- and Nanoplastics in Alveolar Macrophages and a 3D-Alveolar Model: Influence of Size, Polymer, and Weathering

Emanoela Tha

Deposition of microplastics associated with bioaccumulation of heavy metals in human lungs: Adsorption and mobilization of metals via microplastics

Irfan Rahman

Room B - Queen Elizabeth II
2B: Many Faces of Silica

Silica Deposits in Renal Tissue from a Chronic Kidney Disease of Unknown Etiology (CKDu) Hotspot Region in Mexico

Jared Brown

Occupational Exposure to Respirable crystalline Silica and Its Impact on Lipid Mediators and Oxidative Stress markers in Blood and Urine

Alexander Hedbrant

Redefining Real-World Exposure: Advanced Mineralogical Characterisation of Respirable Particles from Mining and Engineered Stone

Nikky LaBranche

From silica to engineered stone particles: unveiling properties and mechanisms of surface-mediated toxicity

Cristina Pavan

10:50 Coffee Break: Exhibitor and Poster Viewing

Please note the programme is subject to change

11:20

**Room A - Queen Mary
3A: Lung NAMs in Particle Toxicology**

Immune-enriched human lung organoids as a platform for nanotoxicity evaluations

Sandra Vranic

Integrative Transcriptomics to Map Carbon based Nanomaterial-Induced Toxicity Pathways in Human Lung Organoids

Ursula Fiorela Navarro Abarca

Advancing a Human-Relevant 3D Lung Co-culture Model for Predicting Effects of Inhaled Particles

Isidora Loncarevic

Lung organoids model pulmonary epithelial cell circuits induced by carbon-based nanomaterials

Carola Voss

**Room B - Queen Elizabeth II
3B: Occupational Risk Assessment**

Health-based nanomaterial guidance value (HNGV) for occupational exposure to spheroidal biodurable engineered nanomaterials of relatively low substance-specific toxicity

Ilse Gosens

Evaluation of indices of oxidative DNA damage, inflammation, and polycyclic aromatic hydrocarbon metabolites as biomarkers of toxicity in Foundry workers

Augusta Nsonwu-Anyanwu

Welding Fume Exposure and Biomonitoring of Blood Metals and Inflammatory Markers in Exhaled Breath Condensate Among Professional Welders

Parisa Mahdavi

Characterisation of Aerosol Emissions and Short-Term Exposure from Line Marking Sprays in Free State Underground Gold Mines

Unathi Mabandla

12:20

Lunch

13:20

Keynote

The world of the particles we inhale and how to control it

Prof. Lidia Morawska, Queensland University of Technology

14:10

Poster Flash Presentations

15:10

Coffee Break: Exhibitor and Poster Viewing

15:40 -
16:40

**Room A - Queen Mary
4A: Diesel Exhaust and Traffic Emissions**

Not just a particulate matter: Chemistry trumps particle metrics in driving toxicity from exhaust emissions – results from the ULTRHAS project

Johan Øvrevik

**Room B - Queen Elizabeth II
4B: Bioaerosols**

Bacterial composition of settled dust samples across UK railway stations

Rachel Bowsher

Please note the programme is subject to change

Diesel Exhaust Particles Trigger Oxidative–Inflammatory Alveolar Responses That Produce Endothelium-Disrupting Mediators

Gerrit Bredeck

Influence of Hydrodynamic Parameters on Bioaerosol Emissions in Vortex-Driven Motion

Maheen Shafiq

Towards an understanding of the relative toxicity of nanoparticles from different transport sources

Hanna Karlsson

A Roadmap to an Automated Bioaerosol Monitoring Network in the UK – From Old-School to AI

Alison Buckley

Cerebral Oxidative Stress Response to acute Diesel Exhaust and World Trade Center Dust exposures

Kristina Shkirkova

Utilising advanced in vitro lung models to determine the potential toxicological impacts of indoor pollutant component exposure scenarios

Kirsty Meldrum

18:30

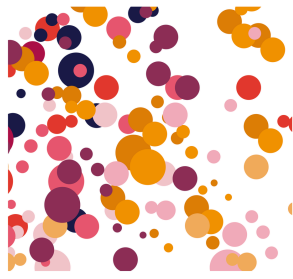
Exhibitor and Poster Viewing / Wine Reception

19:00

Pre-dinner drinks followed by 3 course meal & drinks

Glasgow Marriott Hotel

Please note the programme is subject to change



INHALED PARTICLES AND INTERNATIONAL PARTICLE TOXICOLOGY CONFERENCE

WEDNESDAY 13TH MAY

08:00 Registration

09:00 **Keynote**
Designing Out the Next Asbestos: High-Throughput NAMs, AOPs, FAIR Data and the Future of Advanced Material Safety
Dr. Penny Nymark, Karolinska Institutet

09:50 Poster Flash Presentations

10:45 Coffee Break: Exhibitor and Poster Viewing

11:15

Room A - Queen Mary

5A: Advancing Approaches for Particle Tox

Role of extracellular vesicles in nanoparticle-induced lung inflammation

Haiyun Zhang

Cell culture composition influences cellular responses to particulate matter-associated metals

Liam J. Edgeway

Functionalised thin MWCNTs are less toxic on lung cell lines than their native counterparts

Carole Seidel

Toxicity of an Al₂O₃ nanoparticle and HCl mixture: inhalations in vivo versus in vitro at the air-liquid interface

Maeva Cheriére

Room B - Queen Elizabeth II

5B: Immunotoxicity and Inflammation

Metabolic Disease and Sex Reconfigure Lipid-Mediated Susceptibility to Inhaled Particles

Jonathan Shannahan

Transcriptomic Profiling Reveals Immunomodulatory Effects of Welding Particles in Lung Epithelial and Macrophage-like Cells

Anda Gliga

Luring out Alveolar Macrophage to Enhance Pulmonary Particle Clearance: A Functional Study Using SiglecF-Cell Tracking

Zheng Yin

Role of neutrophil subpopulations during the innate immune response in sterile pulmonary inflammation

Guo Yang

Please note the programme is subject to change

Application of simple and robust in vitro pulmonary models to evaluate the safety of carbon-based lubricants

Alberto Katsumiti

Impaired replenishment of alveolar macrophages as determinant for the fate of particle exposure triggered pulmonary inflammation and chronic lung diseases

Tobias Stoeger

12:30

Lunch

13:30

Room A - Queen Mary
6A: Grouping AOPs and Test Guidelines

Evaluating accuracy of Infinite digital twin for prediction of particle-triggered lung inflammation

Iztok Urbančič

Framework Development for Grouping Polymers Based on Their Toxicology

Bibin Sajan

Application of small molecule inhibition for grouping of nanomaterials by activated inflammatory signalling pathways in-vitro

Morgan Lofty

How could one adapt the assessment of human health impact for micro-and-nanoplastics? Fit-for purpose test materials, in-vitro and in-vivo Test Guidelines.

Wendel Wohlleben

Room B - Queen Elizabeth II
6B: Particle Effects on the Central Nervous System

Mixed Metal Oxide Exposure Drives Astrocytic Activation In Vitro and In Vivo

Souvarish Sarkar

Air pollution, Metal Oxides, and Sex-specific Neurodegeneration

Marissa Sobolewski Terry

Air Pollution Derived Fe-Oxide Inhalation Produces Persistent Sex-Specific Behavioural and Morphological Deficits in Mice

Jithin George

Brain Neurotransmitter Changes Following Gestational Exposures of Mice to Ambient Air Pollution: Modulation by Sex, Behavioral Experience and Life Stage

Deborah Cory-Slechta

14:30

Coffee Break: Exhibitor and Poster Viewing

15:00

From Evidence to Action: Implementing Effective Air Quality Policy

Panel Discussion

Sarah Robertson - Public Health Scotland

Andrew Taylor - Air Quality Policy Manager - Scottish Government

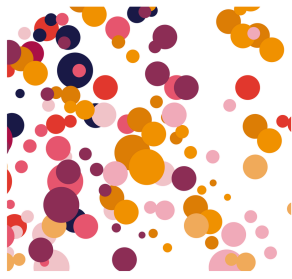
Heather Price - University of Stirling

Mark Miller - University of Edinburgh

Please note the programme is subject to change

16:00 - **Keynote**
16:50 **Innovating Safely: A Policy Framework for Nanomaterials & Advanced Materials**
Wendel Wohleben

18:00 - **Networking Speed Dating for Early Career Researchers at Babbity Bowster, 16–18**
21:00 **Blackfriars St, Glasgow G1 1PE**



INHALED PARTICLES AND INTERNATIONAL PARTICLE TOXICOLOGY CONFERENCE

THURSDAY 14TH MAY

09:00

**Room A - Queen Mary
7A: Neurotoxicology**

Ultrastructural neurovascular alterations in hippocampus induced by environmentally relevant particle exposure revealed by multi-modal imaging

Chang Guo

Inhaled nanoparticle's access, biodistribution, elimination and effects in the brain: A story of exogenous countered by endogenous nanoparticles

Uschi Graham

Neurotoxic impact of atmospheric PM₁₀ from Catalonia: an in vitro study

Esmeralda Ayala

Assessment and characterization of SiO₂ nanoparticles and their potential neuro-nanotoxicity

Ernesto Alfaro-Moreno

Room B - Queen Elizabeth II

7B: In silico Approaches to Hazard and Exposure

In silico Prediction of In Vivo Lung Inflammation Caused by Nanomaterials Using Advanced Nanomaterial Characterisation

Vladimir Lobaskin

LungVis1.0 enables AI-enhanced, high-resolution dosimetry and biokinetics studies in the lung

Otmar Schmid

Comparative analysis of early transcriptomic changes in the lung of F344 rats exposed to different carbon nanotubes and chemical carcinogens

Omnia Ahmed

LungCHEM-Py: A computational model to predict asthma exacerbation risk from indoor air pollutants

Helen L. Davies

10:00

Coffee Break: Exhibitor and Poster Viewing

10:30

**Room A - Queen Mary
8A: Outdoor Environment**

Wildfire surrogate wood smoke particles elicit events linked to premalignant effects in human lung epithelial cells

Alison K. Bauer

**Room B - Queen Elizabeth II
8B: Beyond the Lung**

Chronic PET Nanoplastics ingestion triggers genotoxic and immune responses disrupting gut and systemic homeostasis

Lewis Hodgetts

Please note the programme is subject to change

Investigation of the cellular and molecular effects of airborne emerging pollutants in a unique human cell model

Katja Kanninen

Cytokine Upregulation in Female Placentas of Nano-Titanium Dioxide Exposed Rat Dams

Elizabeth Bowdridge

Repeated Agricultural Dust Exposure Drives Coordinated Pulmonary and Renal Inflammation with Implications for CKDu

Matthew Gibb

Skin Responses to Air Pollution: Keratinocyte Toxicity and Lipidomic Remodeling in Reconstructed Skin

Carmen Bedia

The crystalline silica hazard of volcanic ash: time to get to the bottom of this enigma!

Claire Horwell

A comparative biodistribution and toxicity study of single and multi-component nanomaterials: TiO₂, SiC, and SiC@TiO₂

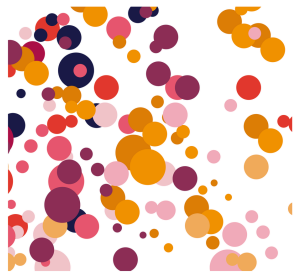
Flemming Cassee

11:30 **Keynote**
From Air to Brain: Investigating the Pulmonary-Neural Axis
Dr. Ian Mudway, Imperial College London

12:35 **Poster Prize Giving**

12:45 **Conference Close**

Please note the programme is subject to change



INHALED PARTICLES AND INTERNATIONAL PARTICLE TOXICOLOGY CONFERENCE POSTER SUBMISSIONS

- | | | |
|----|---|--------------------|
| 3 | In vitro toxicity assessment of ceramic resins used in additive manufacturing: Implications for occupational health | Suranie Horn |
| 5 | From Water-Borne solids to Airborne Pollutants: The Re-Aerosolization of Respirable Dust | Unathi Mabandla |
| 9 | Evaluation of Oxidative Stress Inducibility of Total Suspended Particles (TSP) in Urban Air of Delhi | Yuji Fujitani |
| 10 | Oxidative potential as measure for airborne particulate matter induced health effects | Wanda van der Stel |
| 12 | Multi-omics profiling of protective mechanisms against macrophage senescence induced by brake-derived PM2.5 | Jae-Jun Kim |
| 17 | Dustiness of carbon nanotubes as a prerequisite for inhalation toxicology studies: influence of morphology and surface functionalization | Carole Seidel |
| 18 | In vitro dosimetry of Multi-Walled Carbon Nanotubes on human bronchial epithelial cells (BEAS-2B) | Carole Seidel |
| 23 | Interaction Between Sugarcane Ash-Derived Silica Nanoparticles and Pesticides Leads to Mitochondrial Impairment in Human Proximal Tubular Kidney Cells | Carly Chesterman |
| 25 | Accuracy and interferences associated with direct-on-filter quartz analysis of samples obtained from a brickworks, copper mine and gold mine | Stefan Linde |
| 28 | Plasma Membrane Impacts of Particulate Matter on the Blood-Brain Barrier | Chang Guo |
| 29 | Understanding the Impacts of Inhaled Particulate Matter on the Blood-Brain Barrier | Chang Guo |
| 30 | Exposure to nickel in UK workplaces | Jack Smith |
| 31 | The Neurotoxic Threat of Air Pollution: A Critical Synthesis of Behavioral and Mechanistic Evidence from Rodent Models | Chang Guo |
| 34 | Assessment of Lung Function, Oxidative Stress, Inflammation, Heavy Metals, and Polycyclic aromatic hydrocarbon Metabolites in Occupational Exposure to Sand Dust. | Chinyere Usoro |
| 37 | Attenuation of Toxic Responses Triggered by Ultrafine Particle Overload | So-Young An |

38	Biotransformation-Driven Pulmonary Fate of Iron Oxide Nanoparticles after Repeated Inhalation Exposure	Songyeon Kim
39	In Vivo Assessment of Pulmonary Toxicity and Oxidative Stress–Driven Inflammation Induced by Brake Wear Particles	Gyuri Kim
43	Development of an Animal-Product Free In Vitro Lung Model for Nanomaterial Hazard Assessment	Katie McAllister
49	An experimental approach for the quantitative definition of asbestos-like morphology in naturally occurring mineral fibres	Jasmine Rita Petriglieri
54	Erionite-Induced Carcinogenicity: Mechanistic Insights and Comparative Potency with Asbestos	Kylie Jones
55	Inhalation Hazard of Graphene-Enabled Composite Materials during Manufacture and Degradation of Market-Relevant Products	Peter Wick
57	Silicon Carbide Nanowires Compromise Mucociliary Clearance Function in Human Bronchial Cells	Peter Wick
59	Development of a Simple and Cost-Effective In Vitro Model for Hazard Assessment of Nanomaterials in the Pulmonary System	Alberto Katsumiti
60	In vitro models for respiratory allergic responses: a rapid review of current approaches and challenges.	Emma-Jane Goode
61	Developing a new approach for the investigation of fibrous dust exposure for occupational safety and health in practice	Dawn Webster
63	Liposomal encapsulation of tobramycin: an innovative strategy to enhance treatment of pulmonary infections by <i>Pseudomonas aeruginosa</i>	Alberto Katsumiti
64	Early Method Development for Exhaled Breath Condensate Particle Characterisation Using Single Particle Inductively Coupled Plasma Mass Spectrometry (spICP-MS)	Jasmine Hall
65	Inflammatory effects of Saharan dust in co-cultures: the role of microbial constituents	Lara Boßmann
67	The LowC-project: Safe and sustainable Low-Carbon fuels for heavy-duty, aviation, and maritime sectors.	Johan Øvrevik
71	In vitro human alveolar macrophage (ImmuPHAGE™) responses to particulate matter exposure	Vinit Pereira
72	biological relevance of In finite™ Lung digital twin for animal/hypothesis-free prediction of material-induced chronic lung inflammation	Tilen Koklič
78	Fibre-like behaviour of thin nanotubes: in vitro toxicological and proteomic evidence	Carla Ribalta
80	Testing respiratory effects and immunotoxic impacts employing the NAVETTA in vitro aerosol exposure system	Martin Himly

- 83** Shipping-associated particulate matter enhances viral susceptibility and heightens inflammatory responses in bronchial and alveolar epithelial cells **Liam J. Edgeway**
- 84** The future of Particulate Matter Low-Cost Sensor Devices for emission and exposure measurements in occupational settings **Delphine Bard**
- 88** Modelling the alveolar niche using mono-, co-, and triple-culture systems to mimic the inflammatory response to inhaled nano materials **Osama Huzain**
- 90** Effects of Acute Copper Ultrafine Particle Inhalation in APP/PS1 Mice **Jessica Enos**
- 93** Integrated Analysis of Cellular Pathways of Respiratory Nanotoxicity **Jiating Deng**
- 94** Unveiling the mechanisms of lung injury caused by nanoparticle-triggered virus reactivation **Nethaji Kuruppu**
- 97** Toxicity of welding fumes produced by Gas Metal Arc Welding and Handheld Laser Beam Welding **Bernadette Quemerais**
- 102** Inhalation of Nano and Micro Polyethylene Particles Induces Higher Lung Inflammation in Women Compared to Men **Seokjoo Yoon**
- 104** The role and work of the International Sampler Comparison Group (ISCG) **Steven Verpaele**
- 109** Combined exposure effects of multi-walled carbon nanotubes and silver nanoparticles in in vitro models **Angela Kämpfer**
- 117** Winter Emissions Triggered Stress and Antiviral Cellular Responses in the Human Airway Model **Tereza Cervena**
- 124** Two-dimensional MXenes are increasingly incorporated into biomedical, sensing, and environmental technologies, raising important questions regarding their safety. **Tia Wardlow**
- 135** Chrysotile asbestos accelerates tumour development in mouse models of Mesothelioma and Lung Cancer **Daniel Murphy**