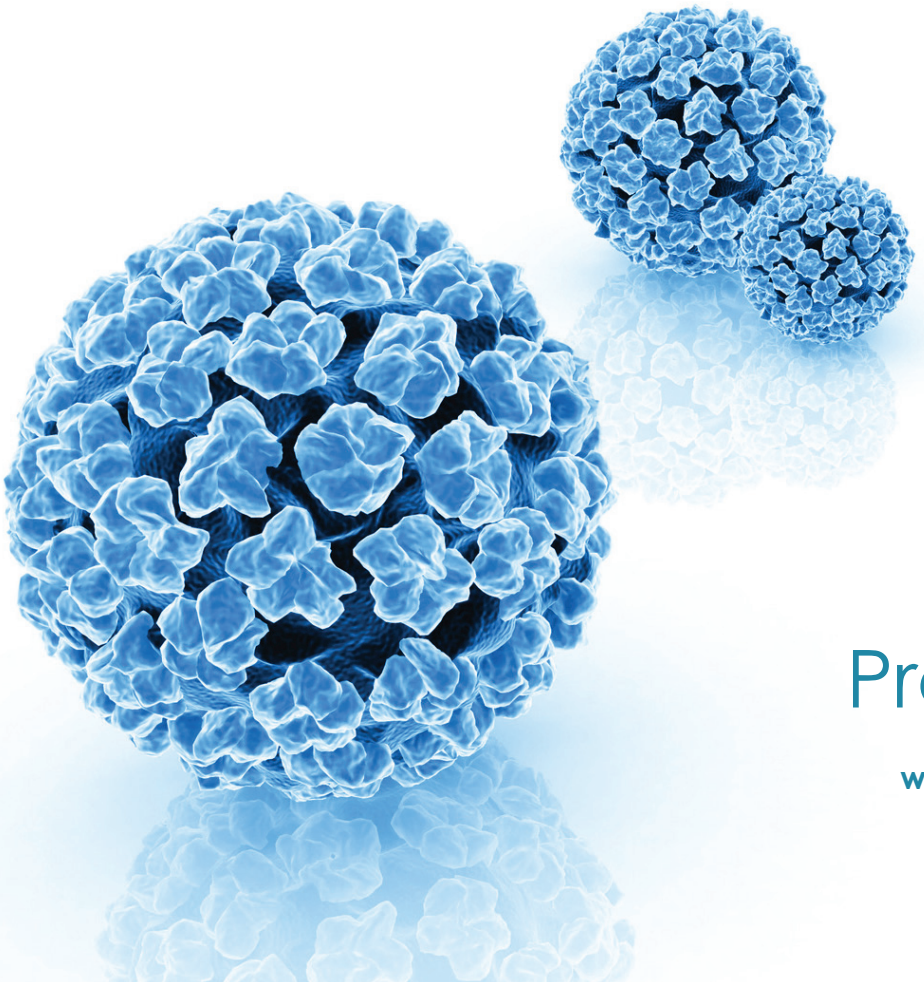
BOHS
The Chartered Society for Worker Health Protection

IPXII

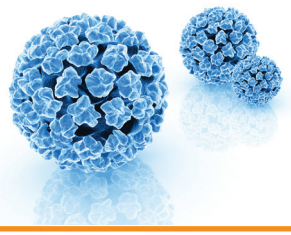
Inhaled Particles XII

25 - 27 September **2017**
Glasgow Marriott Hotel



Programme

www.inhaledparticles.org



IPXII Inhaled Particles XII

Programme

Day 1
25 September 2017

10:00 - 10:30	**Welcome** *Chair: Vicki Stone / Craig Poland*	
	Welcome and Introduction **Vicki Stone** *Heriot Watt University,* **Craig Poland** *University of Edinburgh*	
10:30 - 11:15	**Session 1 Looking to the Future of Particle Inhalation & Health** *Chair: Sabina Halappanavar*	
	Tools for exposure assessment of nanomaterials: Online exposure scenario library & two-box nano-specific inhalation exposure model **Araceli Sánchez Jiménez** *IOM, Edinburgh, United Kingdom*	
	Inhaled ultrafine particulate matter affects microglial morphology and learning and memory behavior in an Alzheimer's disease mouse model **Alison Elder** *Department of Environmental Medicine, University of Rochester, Rochester, U.S.A.*	
	Online detection of the oxidative potential of ambient particulate matter by electron paramagnetic resonance spectroscopy **Bryan Hellack** *Institute of Energy and Environmental Technology (IUTA) e.V., Duisburg, Germany*	
11:15 - 12:00	**Session 2 New Approaches in Inhaled Particles: Exposure & Hazard Assessment** *Chair: Rodger Duffin*	
	Development of samplers for aerosol fractions deposited in two regions of the respiratory tract – gas-exchange region and posterior head airways **Göran Lidén** *Stockholm University, Stockholm, Sweden*	
	Method Development for Toxicity Screening with Exposure Route relevance: Initial Progress **Gail Drummond** *University of Hertfordshire, Hatfield, United Kingdom*	Y
	Pulmonary toxicity of surface modified copper oxide nanoparticles **Ilse Gosens** *National Institute for Public Health and the Environment, Bilthoven, Netherlands*	
12:00 - 13:00	**Lunch**	
13:00 - 13:45	**Session 3 New Approaches in Inhaled Particles: Exposure & Hazard Assessment (Cont)** *Chair: Miranda Loh*	
	Are dust samplers and analytical techniques keeping up with lower concentrations and OELs? Experiences from the European Industrial Minerals Sector **Hicham Zilaout** *Institute for Risk Assessment Sciences, Division of Environmental Epidemiology, Utrecht University, Utrecht, Netherlands*	Y
	Scale of Health: Indices of Safety and Efficacy in the Evolving Environment of Nanoparticle Toxicology **Christie M. Sayes** *Baylor University, Waco, U.S.A.*	
	Comparing nanomaterial toxicity with lung cells cultured under air-liquid interface and submerged conditions **Yaobo Ding** *Institute of Lung Biology and Disease, Helmholtz Zentrum München, Munich, Germany*	Y
13:45 - 15:00	**Session 4 Low Toxicity Particles - Exposures, Health Impact & Regulation** *Chair: Flemming Cassee*	
	Significance of Agglomerate Aerosol and Particle Densities for Effects and Mechanisms of Inhaled Particles **Günter Oberdörster** *University of Rochester, Rochester, NY, U.S.A.*	
	Exposure assessment in a factory of barium sulfate particles **Gaku Ichihara** *Tokyo University of Science, Noda, Japan*	
	First Results of a Long-term Inhalation Study with nano Barium sulfate **Lan Ma-Hock** *Experimental Toxicology and Ecology, BASF SE, Ludwigshafen/Rhein, Germany*	
	Long-term Inhalation Study with Nano Ceria – Histopathology of the Lung **Dirk Schaudien** *Fraunhofer Institute for Toxicology and Experimental Medicine ITEM, Hannover, Germany*	
	Surface area is the biologically most relevant dose metric for nanoparticle-induced inflammation in the lung **Otmar Schmid** *Comprehensive Pneumology Center, 81377 Munich, Germany*	
15:00 - 15:05	**Announcement Particle and Fibre Toxicology - Paper of the Year**	
	Flemming R. Cassee	
15:05 - 15:45	**Tea & Coffee**	
15:45 - 17:00	**Session 5 Debate on the Classification of TiO2 as a Human Carcinogen** *Chair: Vicki Stone*	
	David Warheit *The Chemours Company, Wilmington, DE, U.S.A.* **Thomas Gebel** *Federal Institute for Occupational Safety and Health, Dortmund, Germany*	

09:30 - 10:50	**Session 6** **Outdoor Air Pollution** *Chair: Enrico Bergamaschi*	
	Keynote: The influence of source and chemistry on the toxicity of ambient particulate matter **Ian Gilmour** *U.S. Environmental Protection Agency, U.S.A.*	
	Characteristics of intermittent exposures to fine particulate matters: implications on exposure assessment **Yen-Yu Liu** *NKFUST, Kaohsiung, Taiwan*	
	Conceptual models of ultrafine particles from combustion sources – Benefits from integrating studies of ultrafine particles with nanotoxicology **Joakim Pagels** *Ergonomics & Aerosol Technology, Lund University, Lund, Sweden*	
	Aggregated Exposure Estimates for Fine Particulate Matter from Indoor and Outdoor Sources **Miranda Loh** *Institute of Occupational Medicine, Edinburgh, United Kingdom*	
	Respiratory hazard identification of combined exposure to gasoline exhaust and respirable volcanic ash in a multicellular human lung model **Ines Tomašek** *Institute of Hazard, Risk and Resilience, Department of Earth Sciences, Durham University, Durham, United Kingdom. BioNanomaterials group, Adolphe Merkle Institute, University of Fribourg, Fribourg, Switzerland*	Y
10:50 - 11:30	**Tea & Coffee**	
11:30 - 12:30	**Session 7** **Traffic-related Particulates** *Chair: Roel Schins*	
	In silico analysis of phthalate exposure associated with urban particulate matter in the central region of Mexico City **Ernesto Alfaro-Moreno** *Swedish Toxicology Sciences Research Center, Södertälje, Sweden*	
	Chemical composition and toxicological properties of ambient particles (PM0.25) from near-airport and urban road traffic sites **Flemming R. Cassee** *Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands. National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands*	
	Biologically reactive constiuents of combustion-derived particulate matter: Pro-inflammatory effects in lung epithelial and vascular endothelial cells **Johan Øvrevik** *Norwegian Institute of Public Health, Oslo, Norway*	Y
	Generating biodiesel and fossil diesel exhaust particles with varied physico-chemical properties for toxicological studies **Louise Gren** *Ergonomics & Aerosol Technology, Lund University, Lund, Sweden*	Y
12:30 - 13:30	**Lunch**	
13:30 - 14:30	**Session 8** **Particle Toxicology: Pathways to Disease** *Chair: Alison Elder*	
	Keynote: 'Omics' and Adverse Outcome Pathways: tools for risk assessment of nanomaterials **Sabina Halappanavar** *Department of Biology, Univeristy of Ottawa, Canada*	
	Development of an adverse outcome pathway based on toxicogenomic data for ENM-induced risk of developing atherosclerotic plaques **Ulla Vogel** *National Research Centre for the Working Environment, Copenhagen, Denmark*	
	Long-fibre Carbon Nanotubes and Asbestos induce Pleural Pathology with a Common Molecular Signature **Tatyana Chernova** *MRC Toxicology Unit, Leicester, United Kingdom*	
	Inhaled multi-walled carbon nanotubes-induced gene expression profile in rat lung **Carole Seidel** *INRS, Vandoeuvre les Nancy, France*	
14:30 - 15:45	**Session 9** **Mineral Fibers** *Chair: Craig Poland*	
	End user exposure from the use of asbestos cement and other asbestos products **Michael Kottek** *Ocean Grove, Australia*	
	Monitoring and assessment of exposure to elongate mineral particles and fibres **Garry Burdett** *Health and Safety Laboratory, Buxton, United Kingdom*	
	Investigating the in vitro toxicity of after-service man-made vitreous fibres **Matthew Boyles** *Heriot-Watt University, Edinburgh, United Kingdom*	
	Assessment of the consequences of increasing life expectancy on mesothelioma deaths and the risks associated with current and future exposures **Robin Howie** *Edinburgh, United Kingdom*	
	Jefferson Parish, Louisiana: A follow-up of America's largest current mesothelioma epidemic **Bruce Case** *McGill University, Montreal, Canada*	
15:45 - 16:15	**Tea & Coffee**	
16:15 - 17:15	**Session 10** **Posters** (See page 5)	

9:00 - 10:05	**Session 11** **Lung Exposure and Beyond** *Chair: Ulla Vogel*	
	Keynote: Nano-exposure Driven Risk Assessment **Paul Westerhoff** *Ira A. Fulton Schools of Engineering, Arizona State University, AZ, U.S.A*	
	Nanomaterial dosimetry in inhalation toxicology: Bridging the gaps between in-vitro and in-vivo models as well as real world exposure **Otmar Schmid** *Comprehensive Pneumology Center, 81377 Munich, Germany. Helmholtz Zentrum Munchen, 85764 Neuherberg/Munich, Germany*	
	Metal concentrations in urine samples of welder apprentices **Bernadette Quemerais** *University of Alberta, Edmonton, Canada*	
	Translocation and fate of inhaled gold nanoparticles in mice and man **Jennifer Raftis** *University of Edinburgh., Edinburgh, United Kingdom*	
10:05 - 11:10	**Session 12** **Respiratory Protection** *Chair: Craig Poland*	
	Keynote: Respiratory Protection from Workplace to Beyond **Miranda Loh** *Institute of Occupational Medicine, Edinburgh, United Kingdom*	
	Particulate exposure, respiratory protection and ill-health following the Fort McMurray fire of May 2016 **Nicola Cherry** *University of Alberta, Edmonton, Canada*	
	Testing the effectiveness of respiratory protection used to prevent inhalation of volcanic ash: filtration efficiency experiments **Claire Horwell** *Institute of Hazard, Risk and Resilience, Department of Earth Sciences, Durham University, Durham, United Kingdom*	
	An assessment of facial dimensions and their impact on mask performance **Thomas Winski** *Institute of Occupational Medicine, Edinburgh, United Kingdom*	
11:10 - 11:30	**Tea & Coffee**	
11:30 - 12:30	**Session 13** **Nanotoxicology** *Chair: Hakan Wallin*	
	Toxicity of different types of layered silicates **Krystyna Maciaszek** *Heriot-Watt University, Edinburgh, United Kingdom*	Y
	Nanoparticles and persistent virus infection - a dangerous liaison for the development of chronic lung disease(s)? **Tobias Stoeger** *Helmholtz Zentrum München, Comprehensive Pneumology Center, Institute of Lung Biology and Disease, Munich, Germany*	
	Nanomaterial-induced Pulmonary Acute Phase Response Constitutes a Causal Link between Inhalation of Nanomaterials and Risk of Cardiovascular Disease **Ulla Vogel** *National Research Centre for the Working Environment, Copenhagen, Denmark*	
	Protein coating determines the cellular responses in the abdominal cavity after graphene oxide administration **Artur Filipe Rodrigues** *University of Manchester, Manchester, United Kingdom*	Y
12:30 - 13:30	**Lunch**	
13:30 - 14:20	**Session 14** **Indoor Air Pollution** *Chair: Helinor Johnston*	
	The impact of e-cigarettes and tobacco heating products on indoor air quality **John McAughey** *British American Tobacco, Southampton, United Kingdom*	
	Proposed method to assign respirators to workers exposed to airborne biological contaminants from human, animal and plant waste processing operations **Stephen Larson** *Tufts university, Boston, USA . Keene state college, keene, U.S.A.*	
	Fine and ultrafine particles from indoor sources – Physico-chemical characterization **Bryan Hellack** *Institute of Energy and Environmental Technology (IUTA) e.V., Duisburg, Germany*	
	Fine and ultrafine particles from indoor sources – Effects in a controlled human exposure study and lung epithelial cells in vitro. **Roel Schins** *IUF-Leibniz Research Institute for Environmental Medicine, Düsseldorf, Germany*	
14:20 - 15:25	**Session 15** **Future Priorities in Inhaled Particles** *Chair: Ian Beverland / Martin Clift*	
	Keynote: Filtration Solutions to Mitigate PM2.5 Pollutants in Urban Air **David Pui** *Mechanical Engineering, University of Minnesota, U.S.A.*	
	Round up of key points raised during the symposium and open discussion	
15:25 - 15:40	**Closing Remarks & Awards** *Chair: Vicki Stone / Craig Poland*	

Poster Presentations

The acute pulmonary and prothrombotic effects of cerium oxide nanoparticles following intratracheal instillation in mice
Abderrahim Nemmar
United Arab Emirates University, College of Medicine and Health Sciences, Department of Physiology, Al-Ain, UAE

Prevalence of Asbestos-Related Disease Among Workers in Sri Lanka
Arthur Frank
Drexel University, Philadelphia, USA

Erionite - a new world of mystery
Martin Harper
Zefon International, Inc., Ocala, FL, USA

Investigation of the toxicity of ingested copper oxide nanomaterials (CuO NM) to the intestine in vitro
Victor C. Ude
Heriot-Watt University, Edinburgh, United Kingdom (Y)

Comparing the Basal-level Inflammatory Gene and Protein Expressions of Three Normal and Three Cancer-Derived Lung Cell Lines
Henry Lujan
Baylor University, Waco, USA (Y)

Differential Mutagenicity and Lung Toxicity of Smoldering Versus Flaming Emissions from a Variety of Biomass Fuels
Ian Gilmour
US EPA, Durham, USA

Investigating Traffic-Related Diesel Particulate Matter Exposure on the Basal Gene and Protein Expressions in Normal and Asthma-Derived Epithelial Lung Cells
Brendan Camp
Baylor University, Waco, USA (Y)

Fate and impacts of brake wear nanoparticles on airway epithelial cells
Chloé Puisney
Unité BFA, Laboratoire RMCX, CNRS UMR 8251, Sorbonne Paris Cité, Paris Diderot University, Paris, France (Y)

Methods to assess diesel engine emission (DEEE) exposure
Peter E J Baldwin
HSE, Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom

Comparative pulmonary toxicity of an inhaled titanium dioxide nanostructured aerosol in young adults and elderly rats
Laurent Gaté
Institut National de Recherche et de Sécurité, Vandoeuvre les Nancy, France

In vitro mechanistic toxicology assessment of the inhalation hazard and genotoxic potential of few-layer graphene
Michael Burgum
In Vitro Toxicology Group, Institute of Life Sciences, Swansea University Medical School, Swansea, United Kingdom (Y)

An in vitro investigation of polymer nanomedicine safety using macrophage
Leagh Powell
Heriot Watt University, edinburgh, United Kingdom (Y)

Assessment of the cummulative exposure to asbestos required to cause asbestosis or double lung cancer risk
Robin Howie
Robin Howie Associates, Edinburgh, United Kingdom

Microorganisms and their components present in ambient Air in relation to innate immune cells
Dingyu Liu
National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands

Physical properties, inhalation and deposition of e-cigarette aerosols
John McAughey
British American Tobacco, Southampton, United Kingdom

E-cigarette Aerosol Physical and Chemical Characterisation
John McAughey
British American Tobacco, Southampton, United Kingdom

Long-fibre Carbon Nanotubes induce Pleural Mesothelioma via silencing and/or loss of key Tumour Suppressor Genes
Marion MacFarlane
Medical Research Council Toxicology Unit, Leicester, United Kingdom

Inhalation toxicity of 5 – 10 nm cerium dioxide nanoparticles
Sarah Robertson
Centre for Radiation, Chemical and Environmental Hazards, Public Health England, Oxfordshire, United Kingdom (Y)

Free radical generation and atherosclerotic effects of redox modified cobalt oxide nanoparticles
Mark Miller
University of Edinburgh, Edinburgh, United Kingdom

The role of IL-1 in silica nanoparticle-induced pro-inflammatory responses in human lung epithelial cells
Magne Refsnes
Norwegian Institute of Publc Health, Oslo, Norway

Biologic potency of diesel exhaust derived organic extracts, evaluated by calcium measurements
Bendik Brinchmann
Norwegian Institute of Public Health, Oslo, Norway (Y)

Intrinsic and cell-based oxidative properties of nanomaterials and associated oxidative stress responses determined by multiple assays
Bryan Hellack
Institute of Energy and Environmental Technology (IUTA) e.V., Duisburg, Germany

Human peripheral blood mononuclear cells obtained from unstable COPD patients are susceptible to oxidized ultrafine particles in an inflammasome-independent manner
Rosalinda Sorrentino
DIFARMA, Fisciano, Italy (Y)

The analysis of the environment, health and safety publications (OECD) and the reflections on the risk assessment of future damages
Wilson Engelmann
University of Vale do Rio dos Sinos - UNISINOS, São Leopoldo, Brazil

A comparison of the toxicity of nanomaterials to the HL60 neutrophil-like cell line and primary human neutrophils in vitro
Rachel Verdon
Heriot Watt University, Edinburgh, United Kingdom

The effect of aluminium and sodium impurities on the in vitro toxicity of cristobalite: implications for silica regulations
Claire Nattrass
Institute of Hazard, Risk & Resilience, Department of Earth Sciences, Durham University, Durham, United Kingdom (Y)

Composition, Respirable Fraction and Dissolution Rate of 24 Stone Wool MMVF with their Binder
Wendel Wohlleben
BASF SE, Dept. Material Physics and Analytics and Dept. of Aerosol Technology, Ludwigshafen am Rhein, Germany

Lowering aspect ratio to control the biological effects of TiO_2 nanofibres (NF)
Massimiliano G. Bianchi
Dept. of Medicine and Surgery, University of Parma, Parma, Italy

Preliminary validation study of a 3D in vitro inhalation model, using cytokine and gene expression responses of copper oxide nanoparticles
Ingeborg M. Kooter
TNO, Zeist, the Netherlands