

HOST ORGANIZATIONS



KIT | Karlsruhe Institute of Technology

KIT bundles the mission of both: University of the state of Baden-Wuerttemberg and a large-scale research institution of the Helmholtz Association. The KIT Climate and Environment Center develops strategies and technologies to secure the natural bases of life.

www.kit.edu



EFCA | The European Federation of Clean Air and Environmental Protection Associations aims at encouraging professional activity in Europe while working at the interface between science and (European) policy on environmental problems.

www.efca.net



GUS | Gesellschaft für Umweltsimulation e.V. (Society for Environmental Engineering). It is the organization of people, institutions and companies who work in environmental engineering and testing. Since 1969, GUS supports the development of environmental engineering on a non profit basis.

www.gus-ev.de



CEEES | The Confederation of European Environmental Engineering Societies

is the umbrella organisation of national technical societies for environmental engineering and testing. CEEES promotes technical advisory boards, seminars and conferences with the support of national member societies.

www.cee.es.org



European Federation of Clean Air and
Environmental Protection Associations (EFCA)
International Symposium

Ultrafine Particles – Air Quality and Climate

Brussels, Belgium
May 04 and 05, 2015

PROCEEDINGS



Venue

Representation of the State of
Baden-Württemberg to the EU
Rue Belliard 60-62
B-1040 Brussels, Belgium



Information

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Session I – Monitoring and Exposure 1 | Chairman: Guiseppe Fumarola

Characterisation of exposure to ultrafine particles at traffic intersections
Prashant Kumar, University of Surrey, Guildford, United Kingdom

Personal exposure to ultrafine particles, Black Carbon and PM2.5 in different microenvironments
Jianwei Gu, University of Augsburg, Augsburg, Germany

The Measurement of Ultrafines & Black Carbon in Glasgow City Centre
David Sykes, Ricardo-AEA, Glasgow, United Kingdom

Ultrafine particles and black carbon exposure concentration levels along a pedestrian route
Giovanni Lonati, Politecnico di Milano, Italy

Session J – Monitoring and Exposure 2 | Chairman: John Murlis

Monitoring of UFP concentration and size distribution at four urban background sites in NW-Europe
Jeroen Staelens, Flemish Environment Agency (VMM), Antwerpen, Belgium

Near one km vertical profiles of ultrafine particles over the city of Barcelona, Spain
Xavier Querol, Institute of Environmental Assessment and Water Research (IDAEA), Barcelona, Spain

Ultrafine particle and black carbon measurements at an urban background site: a multi-technique monitoring approach
Giovanni Lonati, Politecnico di Milano, Italy

Monitoring black carbon concentrations with mobile devices in the city of Liège
Luc Bertrand, ISSeP, Liege Belgium

Concluding discussion

Conference Report

Joop van Ham, EFCA, on behalf of the Organising Committee

PRESENTATIONS

Session A – Keynotes | Chairman: Thomas Leisner

Health effects of Ultrafine Particles – New evidence from epidemiological studies
Annette Peters, Helmholtz Zentrum München, Germany

Nucleation of ultrafine particles in the atmosphere
Markku Kulmala, University of Helsinki, Finland

Session B – Measurement, Chemistry and Modelling 1 | Chairman: Thomas Reichert

Black carbon, total and size-resolved particle number concentrations in urban areas near Schiphol airport (The Netherlands)
Menno Keuken, TNO, Utrecht, the Netherlands

Modelling ultrafine particles concentrations at a street-level scale
Hans Hooyberghs, VITO, Mol, Belgium

Highly resolved ultrafine particle number concentration maps for the city of Zurich, Switzerland
Michael Müller, Empa, Dübendorf, Switzerland

Atmospheric composition measurements for improving the high resolution modelling of the Brussels urban atmosphere
Alexander Mangold, Royal Meteorological Institute of Belgium, Brussels, Belgium

Session C – Health effects | Chairperson: Vladimira Vadjic

Alveolar epithelial cells initiate nanoparticle-induced acute lung inflammation
Tobias Stöger, Helmholtz Zentrum München, Germany

Automated exposure station for the air-liquid interface exposure of human lung cell cultures towards aerosols
Sonja Mülhopt, Karlsruhe Institute of Technology, Karlsruhe, Germany

Day-to-day variability of toxic events induced by organic compounds bound to size segregated atmospheric aerosol
Jan Topinka, Institute of Experimental Medicine AS CR, Prague, Czech Republic

Session D – Sources and Mitigation of Emissions | Chairperson: Gordana Prehnic

An estimation of the marine sources impact on PM10 levels in Northern France
Cloé Roche, Université du Littoral Côte d'Opale (ULCO), Dunkerque, France

Ultra-low emission wood combustion by seamless adaptation of an electrostatic precipitator to a modern grate boiler
Hanns-Rudolf Paur, Karlsruhe Institute of Technology, Karlsruhe, Germany

On the status of discussion within the International Maritime Organization about the consideration of the impact on the arctic of emissions of black carbon from international shipping
Peter Lauer, MAN Diesel & Turbo SE, Augsburg, Germany

Nanoparticle emissions from thermal desorption/regenerative oxidation of contaminated soils
Senem Ozgen, Politecnico di Milano, Milano, Italy

Session E – Measurement, Chemistry and Modelling 2 | Chairman: Harald Saathoff

Investigating the chemical composition of sub-100 nm particles with chemical ionization mass spectrometry
Claudia Mohr, Karlsruhe Institute of Technology, Karlsruhe, Germany

Frequency of new particle formation events in high insolation urban environments
Xavier Querol, Institute of Environmental Assessment and Water Research (IDAEA), Barcelona, Spain

Role of fine and ultrafine particles in the formation of haze in Beijing, China
Klaus Schäfer, Karlsruhe Institute of Technology, Karlsruhe, Germany

BC monitoring as a proxy of the UFP concentration
Sébastien Fays, ISSeP, Liège, Belgium

Session F – Posters & Buffet

Comparison between ultrafine and fine particulate matter: chemical characterization and in vitro toxicity in human bronchial epithelial cells BEAS-2B
Frédéric Ledoux, Université du Littoral Côte d'Opale (UCEIV), Dunkerque, France

Measurement of ultrafine particles from small non-road engines under real-world operating conditions
Michal Vojtíšek-Lom, Technical University, Prague, Czech Republic

Water-soluble ions in PM2.5 particle fraction in Zagreb Air, Croatia
Mirjana Cackovic, Institute for Medical Research and Occupational Health, Zagreb, Croatia

Sources and distribution of ultrafine atmospheric aerosol measured in the city of Leicester (UK)
Sarkawt Hama, University of Leicester, Leicester, United Kingdom

Evaluation of the impact of sulfur poisoning on catalytic stripper technology
Jacob Swanson, Catalytic Instruments GmbH & Co. KG, Rosenheim, Germany

WMA statement on the prevention of air pollution due to vehicle emissions
Manfred Neuberger, Medical University of Vienna, Austria

Measuring 1-3 nm particles in urban air
Joonas Vanhanen, Airmodus Ltd., Helsinki, Finland

Health adverse effects within the population neighboring a landfill: Cd and Pb impregnation, oxidative stress and nephrotoxicity
Dominique Courcot, Université du Littoral Côte d'Opale (UCEIV), Dunkerque, France

The effect of a thermal denuder on the measurement of black carbon generated in a diesel engine
Jeonghoon Lee, School of Mechanical Engineering, KOREATECH, Cheonan, South Korea

Session G – Keynotes | Chairman: Thomas Leisner

Ultrafine particles in the urban atmosphere
Roy Harrison, University of Birmingham, United Kingdom

Dramatic increase projected in mortality attributable to fine particulate air pollution
Jos Lelieveld, Max Planck Institute for Chemistry, Mainz, Germany

Session H – Measurement Methods | Chairman: Karl-Friedrich Ziegahn

Release of engineered nanoparticles during waste incineration
Inge-Maria Lang, Karlsruhe Institute of Technology, Karlsruhe, Germany

A new portable device for high time resolved measurements of wide range aerosol size distributions
Hans-Jürgen Grimm, Grimm Aerosol Technik, Ainring, Germany

Portable nanoparticle instrumentation for oncoming motor vehicle regulations
Luis Cachón, Testo AG, Titisee-Neustadt, Germany

Determination of the filtering effect of airborne particles for a model of flow around a cylinder with a slit
Dorota Kaminska, Kamika Instruments, Warszawa, Poland