

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

PROGRAM



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

INTRODUCTION

Ultrafine particles, (UFP), are the smallest constituents of airborne particulate matter and are considered to be causing serious health problems and environmental effects. They may nucleate as a result of combustion processes or result from photochemical reactions of volatile precursor gases, thus showing a clear link to gaseous pollution. Recently, direct emission of man-made nanoparticles, e. g. from the incineration or degradation of synthetic nanomaterials, has attracted considerable attention. Apart from the specific role of UFP in air quality, they play also a key role in atmospheric processes such as cloud formation and precipitation and, in fact, in climate. The relation between UFP and human health and that of UFP and climate are both areas of active research and cross-links between these fields are found nowadays. The new subtitle of the conference series: “**air quality and climate**” reflects this development.

Present policies to decrease exposure to particulate matter make use of the mass-based metrics PM10/PM2.5, which do not properly represent all risks for human health. EFCA is, therefore, in favour of the development of a fraction-by-fraction approach, both with respect to size and chemical composition. It already recommended European policymakers the introduction of Black Carbon Particles as additional metric in the Air Quality Directive.

The organizers trust that EFCA's 5th Ultrafine Particles Symposium 2015 will again feature the most recent scientific progress in the field and so contribute to policy-relevant developments and thus improve the dialogue with policymakers in Europe. The Symposium has gained visibility by permanently moving to Brussels and attracts an effective mix of EU representatives and scientists. EFCA and KIT, together with GUS and CEEES are pleased to organize this event again. We cordially invite all experts for active contributions and hope to see you again at the State representation of Baden-Württemberg in Brussels in May 2015.

Thomas Leisner | Chairman

PROGRAM

MONDAY, 4 MAY

10:30 – 11:00

Opening

EUROPASAAL

11:00 – 11:45

**Keynote
Session A.1**

EUROPASAAL

11:45 – 12:30

**Keynote
Session A.2**

EUROPASAAL

Lunch

FOYER/PATIO

13:45 – 15:25

**Session B –
Measurement,
Chemistry and
Modelling 1**

EUROPASAAL

13:45 – 15:25

**Session C –
Health effects**

STUTT GART/
KARLSRUHE

Coffee Break

FOYER

15:45 – 17:25

**Session D –
Sources and
Mitigation of
Emissions**

EUROPASAAL

15:45 – 17:25

**Session E –
Measurement,
Chemistry and
Modelling 2**

STUTT GART/KARLSRUHE

17:30 – 19:00

Poster Session F & Buffet

FOYER/PATIO

TUESDAY, 5 MAY

09:00 – 09:45

**Keynote
Session G.1**

EUROPASAAL

09:45 – 10:30

**Keynote
Session G.2**

EUROPASAAL

Coffee Break

FOYER

10:45 – 12:25

**Session H –
Measurement
Methods**

EUROPASAAL

10:45 – 12:25

**Session I –
Monitoring and
Exposure 1**

STUTTGART/
KARLSRUHE

Lunch

FOYER/PATIO

13:25 – 15:05

Session J – Monitoring and Exposure 2

EUROPASAAL

15:05 – 15:45

Concluding discussion

EUROPASAAL

16:00

EFCA Board Meeting

MANNHEIM

Monday, 4 May

Opening

10:30 EFCA President, Symposium Chairman,
Representative of the State of Baden-
Württemberg

Keynotes – Session A

13:45 – 15:00 | Europasaal
Session Chair: Thomas Leisner

11:00 A.1
**Health Effects of Ultrafine Particles –
New Evidence from Epidemiological Studies**
Annette Peters
Helmholtz Zentrum München, Germany

11:45 A.2
**Nucleation of ultrafine particles
in the atmosphere**
Markku Kulmala
University of Helsinki, Finland

12:30 Lunch

Session B – Measurement, Chemistry and Modelling 1

13:45 – 15:25 | Europasaal

Session Chair: Miriam Gerlofs-Nijland

13:45 B.1

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

Menno Keuken

TNO, Utrecht, the Netherlands

14:10 B.2

Modelling ultrafine particles concentrations at a street-level scale

Hans Hooyberrghs

VITO, Mol, Belgium

14:35 B.3

Highly resolved ultrafine particle number concentration maps for the city of Zurich, Switzerland

Michael Müller

Empa, Dübendorf, Switzerland

15:00 B.4

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

13:45 – 15:25 | Stuttgart/Karlsruhe

Session Chair: Vladimira Vadjic

13:45 C.1

Alveolar epithelial cells initiate nanoparticle-induced acute lung inflammation

Tobias Stöger

Helmholtz Zentrum München, Germany

14:10 C.2

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

14:35 C.3

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

15:00 C.4

Health adverse effects within the population neighboring a landfill: Cd and Pb impregnation, oxidative stress and nephrotoxicity

Anthony Verdin

Université du Littoral Cote d'Opale M.R.E.I.,
Dunkerque, France

15:25 Coffee Break

Session D – Sources and Mitigation of Emissions

15:45 – 17:25 | Europasaal
Session Chair: Gordana Prehnic

- 15:45 D.1
An estimation of the marine sources impact on PM₁₀ levels in Northern France
Cloé Roche
Université du Littoral Côte d'Opale (ULCO),
Dunkerque, France
- 16:10 D.2
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
- 16:35 D.3
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
- 17:00 D.4
Nanoparticle emissions from thermal desorption/regenerative oxidation of contaminated soils
Senem Ozgen
Politecnico di Milano, Milano, Italy

Session E – Measurement, Chemistry and Modelling 2

15:45 – 17:25 | Stuttgart/Karlsruhe

Session Chair: Harald Saathoff

15:45 E.1

Investigating the chemical composition of sub-100 nm particles with chemical ionization mass spectrometry

Claudia Mohr

Karlsruhe Institute of Technology, Karlsruhe, Germany

16:10 E.2

Frequency of new particle formation events in high insolation urban environments

Xavier Querol

Institute of Environmental Assessment and Water Research (IDAEA), Barcelona, Spain

16:35 E.3

Role of fine and ultrafine particles in the formation of haze in Beijing, China

Klaus Schäfer

Karlsruhe Institute of Technology, Karlsruhe, Germany

17:00 E.4

BC monitoring as a proxy of the UFP concentration

Benjamin Bergmans

ISSeP, Liège, Belgium

Session F – Posters & Buffet

17:30 – 19:00 | Foyer/Patio

- F.1 **Release of engineered nanoparticles during waste incineration**
Inge-Maria Lang
Karlsruhe Institute of Technology, Karlsruhe, Germany
- F.2 **Measurement of ultrafine particles from small non-road engines under real-world operating conditions**
Michal Vojtíšek-Lom
Technical University, Prague, Czech Republik
- F.3 **Water-Soluble Ions in PM_{2.5} Particle Fraction in Zagreb Air, Croatia**
Mirjana Čackovic
Institute for Medical Research and Occupational Health, Zagreb, Croatia
- F.4 **Sources and distribution of ultrafine atmospheric aerosol measured in the city of Leicester (UK)**
Sarkawt Hama
University of Leicester, Leicester, United Kingdom

Session F – Posters & Buffet

17:30 – 19:00 | Foyer/Patio

- F.5 **Evaluation of the impact of sulfur poisoning on catalytic stripper technology**
Jacob Swanson
Catalytic Instruments GmbH & Co. KG,
Rosenheim, Germany
- F.6 **WMA Statement on the Prevention of Air pollution due to Vehicle Emissions**
Manfred Neuberger
Medical University of Vienna, Austria
- F.7 **Measuring 1-3 nm particles in urban air**
Joonas Vanhanen
Airmodus Ltd., Helsinki, Finland

Tuesday, 5 May

Keynotes – Session G

09:00 – 10:30 | Europasaal
Session Chair: Thomas Leisner

09:00 G.1
Ultrafine particles in the urban atmosphere
Roy Harrison
University of Birmingham, United Kingdom

09:45 G.2
Dramatic increase projected in mortality attributable to fine particulate air pollution
Jos Lelieveld
Max Planck Institute for Chemistry, Mainz, Germany

10:30 Coffee Break

Session H – Measurement Methods

10:45 – 12:25 | Europasaal

Session Chair: Karl-Friedrich Ziegahn

10:45 H.1

Automated exposure station for the air-liquid interface exposure of human lung cell cultures towards aerosols

Sonja Mülhopt

Karlsruhe Institute of Technology, Karlsruhe, Germany

11:10 H.2

A new portable device for high time resolved measurements of wide range aerosol size distributions

Hans-Jürgen Grimm

Grimm Aerosol Technik, Ainring, Germany

11:35 H.3

Portable nanoparticle instrumentation for oncoming motor vehicle regulations

Luis Cachòn

Testo AG, Titisee-Neustadt, Germany

12:00 H.4

Determination of the filtering effect of airborne particles for a model of flow around a cylinder with a slit

Dorota Kaminski

Kamika Instruments, Warszawa, Poland

Session I – Monitoring and Exposure 1

10:45 – 12:25 | Stuttgart/Karlsruhe

Session Chair: Guiseppe Fumarola

10:45 I.1

Characterisation of exposure to ultrafine particles at traffic intersections

Prashant Kumar

University of Surrey, Guildford, United Kingdom

11:10 I.2

Personal exposure to ultrafine particles, Black Carbon and PM_{2.5} in different microenvironments

Jianwei Gu

University of Augsburg, Augsburg, Germany

11:35 I.3

The Measurement of Ultrafines & Black Carbon in Glasgow City Centre

David Sykes

Ricardo-AEA, Glasgow, United Kingdom

12:00 I.4

Ultrafine particles and black carbon exposure concentration levels along a pedestrian route

Giovanni Lonati

Politecnico di Milano, Italy

12:25 Lunch

Session J – Monitoring and Exposure 2

13:25 – 15:05 | Europasaal

Session Chair: John Murlis

13:25 J.1

Monitoring of UFP concentration and size distribution at four urban background sites in NW-Europe

Jeroen Staelens

Flemish Environment Agency (VMM), Antwerpen, Belgium

13:50 J.2

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

14:15 J.3

Ultrafine Particle and Black Carbon measurements at an urban background site: a multi-technique monitoring approach

Giovanni Lonati

Politecnico di Milano, Italy

14:40 J.4

Monitoring black carbon concentrations with mobile devices in the city of Liège

Luc Bertrand

ISSeP, Liege Belgium

Concluding discussion

15:05 – 15:45

Symposium Chairman

Thomas Leisner

Institute for Meteorology and Climate Research,
Karlsruhe Institute of Technology, KIT, Germany

Organizing Committee

Thomas Reichert

Fraunhofer ICT and GUS, President of EFCA, Germany

Joop van Ham

EFCA, The Netherlands

Klara Langer

Karlsruhe Institute of Technology (KIT), Germany

Harald Saathoff

Karlsruhe Institute of Technology (KIT), Germany

Sabine Aref

Gesellschaft für Umweltsimulation (GUS), Germany

Angela Richter

Helmholtz Gemeinschaft, Brussels Office, Belgium

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Karlsruhe Institute of Technology (KIT), Germany

Proceedings

Presentations and Posters will be published electronically after the Symposium.

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Venue

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

Registration and Fee

Please register online ufp.efca.net
Participant fee: € 480,-
Reduced fee for delegates and authors:
€ 240,- (one author per contribution)
Including book of abstract, conference CD,
conference buffets and refreshments

Accommodation

Please book your rooms directly.
Organizers recommend:

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