

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

Ultrafine Particles – Air Quality and Climate

Brussels, Belgium
May 10 and 11, 2017

DRAFT PROGRAM

HOST ORGANIZATIONS



KIT | Karlsruhe Institute of Technology

Karlsruhe Institute of Technology (KIT) pools its three core tasks of research, higher education, and innovation in a mission. 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



CEES | 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.ceees.org

INTRODUCTION

Ultrafine particles (UFP), the nano fraction of airborne particulate matter, are considered to be causing serious health problems and environmental effects. Combustion is a major source, also by producing volatile organic pollutants which are converted in the atmosphere through photochemical reactions.

Increasing applications of man-made nanomaterials add to the problem, e.g. after incineration at the end of their lifetime. A further interest in UFP results from their specific 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 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 on particulate matter, 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 6th Ultrafine Particles Symposium 2017 will again feature the most recent scientific progress in the field and so contribute to policy-relevant developments which 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 to contribute actively and hope to see you again at the State representation of Baden-Württemberg in Brussels in May 2017.

Thomas Leisner | Chairman

PROGRAM

WEDNESDAY, 10 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 – Urban
air pollution from
the local to the
regional scale 1**

EUROPASAAL

13:45 – 15:25

**Session C –
Health effects and
indoor air quality**

STUTT GART/KARLSRUHE

Coffee Break

FOYER

15:45 – 17:25

**Session D – Urban
air pollution from
the local to the
regional scale 2**

EUROPASAAL

15:45 – 17:25

**Session E –
Engineered
nanoparticles in
ambient air**

STUTT GART/KARLSRUHE

17:30 – 19:00

Poster Session F & Buffet

FOYER/PATIO

THURSDAY, 11 MAY

09:00 – 09:45

**Keynote
Session G.1**

EUROPASAAL

09:45 – 10:30

**Keynote
Session G.2**

EUROPASAAL

Coffee Break

FOYER

10:45 – 12:00

**Session H –
Airborne
Measurements**

EUROPASAAL

10:45 – 12:00

**Session I –
Emission
Reduction**

STUTTGART/KARLSRUHE

Lunch

FOYER/PATIO

13:15 – 14:25

Keynote Session J

EUROPASAAL

Coffee Break

FOYER

14:40 – 15:30

Session K – Abatement Strategies

EUROPASAAL

15:30 – 16:30

**Panel discussion – Emissions and
abatement strategies**

EUROPASAAL

Wednesday, 10 May

Opening Plenary

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

Keynotes – Session A

11:00 – 12:30 | Europasaal
Session Chair: Thomas Leisner

- 11:00 A.1
From car to coronary: The cardiovascular effects of ultrafine particles in vehicle exhaust
Mark R. Miller
The University of Edinburgh, UK
- 11:45 A.2
Air pollution and cognitive decline
Ian Mudway
King's College London, UK

12:30 Lunch

Session B – Urban air pollution from the local to the regional scale 1

13:45 – 15:25 | Europasaal

Session Chair: Karl-Friedrich Ziegahn

13:45 B.1

Regional air quality in Leipzig, Germany: Chemical characterization and source apportionment of ultrafine particles

Dominik van Pinxteren

TROPOS, Leipzig, Germany

14:10 B.2

Exposure to fine and ultrafine particles during cycling, car driving and public transportation in Vienna

Manfred Neugerger

Medical University of Vienna, Austria

14:35 B.3

Spatiotemporal variation in ultrafine particles near Brussels Airport

Jan Peters

Flemish Institute for Technological Research,
Mol, Belgium

15:00 B.4

Identification and characterization of industrial and other non-traffic-related ultrafine particle sources in a suburban area

Claudia Mohr

Stockholm University, Sweden

Session C – Health effects and indoor air quality

13:45 – 15:25 | Stuttgart/Karlsruhe

Session Chair: Gordana Peh nec

13:45 C.1

Risks to the UK population from the use of diesel fuel additives containing cerium dioxide nanoparticles

Rachel Smith

Centre for Radiation, Chemical and Environmental Hazards, Public Health England, Harwell Campus, Didcot, UK

14:10 C.2

Lung Toxicity Testing of aerosols the air-liquid interface with integrated dose monitoring

Sonja Mülhopt

Karlsruhe Institute of Technology, Germany

14:35 C.3

Ultrafine aerosol particle exposure indoor and its relationship to the outdoor concentrations in urban and rural area

Birgit Wehner

TROPOS, Leipzig, Germany

15:00 C.4

Ultrafine particles in indoor environments – challenges in science and regulation

Wolfram Birmili

Federal Environment Agency, Berlin, Germany

15:25 Coffee Break

Session D – Urban air pollution from the local to the regional scale 2

15:45 – 17:25 | Europasaal

Session Chair: Harald Saathoff

15:45 D.1

Approaches to monitor urban pollution in Leipzig, Germany

Anne Wiesner

TROPOS, Leipzig, Germany

16:10 D.2

Measurements of the aerosol composition of the Brussels sub-urban atmosphere and implications for the emission scheme of a regional chemical transport model

Alexander Mangold

Royal Meteorological Institute of Belgium, Brussels, Belgium

16:35 D.3

Measure of ultrafine particles and other pollutants in ambient air: experience feedback in Wallonia (Belgium) near traffic sources

Robin Laruelle

ISSEP, Belgium

17:00 D.4

Urban air pollution in developing countries: Case study of Metro Manila, Philippines

Honey Alas

TROPOS, Leipzig, Germany

**Session E – Engineered nanoparticles
in ambient air**

15:45 – 17:00 | Stuttgart/Karlsruhe

Session Chair: Rachel Smith

15:45 E.1

Emission of (engineered) nanoparticles from tires, brake pads, catalytic converters, engine oil and fuel additives during road transport

Peter Tromp

TNO, Utrecht, The Netherlands

16:10 E.2

Atmospheric fate of engineered nanoparticles

Astrid Manders

TNO, Utrecht, The Netherlands

16:35 E.3

The influence of temperature and humidity on the thermal stability of nanoparticles

Nadine Teuscher

Karlsruhe Institute of Technology, Germany

Poster Session F & Buffet

17:30 – 19:00 | Foyer/Patio

- F.1 **Industrial Characterization and Monitoring of Ultrafine Particulate Emission and Immission**
Kai Klinder
SICK ENGINEERING GmbH, Germany
- F.2 **Mass concentrations of Water-soluble ions in PM_{2.5} particle fraction measured at two different sampling sites in Croatia**
Mirjana Čačković
Institute for Medical Research and Occupational Health, Zagreb, Croatia
- F.3 **The sources of 1-3 nm particles indoors in urban background area; the effect of outdoor air**
Elina Miettinen
Airmodus Ltd, Helsinki, Finland
- F.4 **CEN/TS 16976: DESCRIBING A STANDARD METHOD FOR THE ROUTINE MONITORING OF PARTICLE NUMBER CONCENTRATION IN AMBIENT AIR**
Jürgen Spielvogel
TSI GmbH, Aachen, Germany
- F.5 **„Big surface storage areas in the energy sector as sources of ultrafine particles? Challenges and tasks to determine their contribution in air concentration of PM“**
Andrzej Jagusiewicz
PIGE/EFCA, Warsaw, Poland
- F.6 **Conceptual construction for the suspension of fine mineral particles to simulate dust deposition**
Elisabeth Klimm
Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany

- F.7 **Influence of biodiesel fuel composition on the morphology and microstructure of particles emitted from diesel engines**
Harald Saathoff
Karlsruhe Institute of Technology, Germany
- F.8 **Estimating black carbon concentrations in the city of Liège, Wallonia, Belgium**
Fabian Lenartz
Institut Scientifique de Service Public, Belgique

Thursday, 11 May

Keynotes – Session G

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

09:00 G.1

Ultrafine particles and climate

Ken Carslaw

University of Leeds, Leeds, UK

09:45 G.2

Investigation of the toxicity of combustion aerosols within the HICE-project: Chemical composition of ship-, car- and wood combustion-emissions and their molecular biological effects on air/liquid-interface exposed lung cells

Ralf Zimmermann

Rostock University & Helmholtz Zentrum

München, Germany

10:30 Coffee Break

Session H – Airborne Measurements

10:45 – 12:00 | Europasaal

Session Chair: Flemming R. Cassee

10:45 H.1

What can we learn from airborne measurements of ultrafine particles

Wolfgang Junkermann

Karlsruhe Institute of Technology, Germany

11:10 H.2

Black Carbon and Aerosol Absorption Measurements during Global Circumnavigation and Arctic Campaigns in 2012, 2013 and 2016

Griša Močnik

Aerosol Research and Development Department, Ljubljana, Slovenia

11:35 H.3

3D ultrafine particles and O₃ concentrations in the lower 1.2 km atmosphere of Madrid, Spain

Xavier Querol

Institute of Environmental Assessment and Water Research, Barcelona, Spain

12:00 Lunch

Session I – Emission Reduction

10:45 – 12:00 | Stuttgart/Karlsruhe

Session Chair: Guiseppe Fumarola

10:45 I.1

Assessment of the effectiveness of the low emission zone Leipzig by measurements of soot and the ultrafine particle number concentration

Birgit Wehner
TROPOS, Leipzig, Germany

11:10 I.2

Ultrafine Particles of Gasoline Cars DI & MPI and Reduction Potentials with GPF

Martin Güdel
University of Applied Sciences Biel-Bienne,
Switzerland

11:35 I.3

Micromarkers of diesel/biofuel and biomass burning in polluted environment

Olga Popovicheva
Moscow State University, Moscow, Russia

12:00 Lunch

Keynotes – Session J

13:15 – 14:25 | Europasaal

Session Chair: John Murlis

13:15 J.1

Environmental modelling and decision making

Laurence Rouil
INERIS, France

14:00 J.2

Ultrafine particles around Amsterdam Schipol airport and potential implications for human health

Flemming R. Cassee
National Institute for Public Health and the Environment, Utrecht, The Netherland

14:25 Coffee Break

Session K – Abatement Strategies

14:40 – 16:30 | Europasaal

Session Chair: Thomas Reichert

14:40 K.1

Success story of the particulate filter

Andreas C.R. Mayer
TTM, Switzerland

15:05 K.2

Particle emissions from aircraft engines (tbc)

Panel discussion – Emissions and abatement strategies

15:30 – 16:30

Andreas C.R. Mayer, TTM, Switzerland; Christiane Voigt, DLR, Germany (tbc); Ralf Zimmermann, Rostock University & Helmholtz Zentrum Munich, Germany (tbc); European Commission (tbc); Marion Wichmann-Fiebig, Umweltbundesamt, Germany; Laurence Rouil, INERIS, France

Symposium Chairman

Thomas Leisner

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

Organizing Committee

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Fraunhofer ICT and GUS, President of EFCA, Germany

Harald Saathoff

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Claudia Mohr

Stockholm University, Sweden

Francois Crepain

The Confederation of European Environmental
Engineering Societies, (CEEES)

Proceedings

Presentations and Posters will be published electronically
after the Symposium.

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Venue

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Rue Belliard 60-62
B-1040 Brussels, Belgium



Baden-Württemberg

VERTRETUNG DES LANDES BEI DER EUROPÄISCHEN UNION

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:

Motel One Bruxelles

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