

15th ETH Conference on Combustion Generated Nanoparticles
The Swiss Federal Office for the Environment is Patron of this Conference
 Zurich, June 26th – 29th, 2011

Conference Venue: Zürich ETH Zentrum, Main Building, HG E7
 Welcome-Party Sunday 26th June, 7.00 pm, ETH Zentrum, Alumni Pavillon
 Conference Registration Monday 27th June 7.30 am
www.nanoparticles.ethz.ch/Phone: +41(44)632 90 30 (during the conference)

Agenda of Presentations

Monday June 27th 2011

Welcome	09.00 – 09.20
Burtscher H. / University of Applied Sciences Northwestern Switzerland <i>Welcome</i>	
Kasper, M. / Matter Aerosol AG, Switzerland <i>Housekeeping</i>	
Key-Lecture	09.20 – 09.50
Brändli O. / Switzerland <i>Particles and Health - Lessons from the SAPALDIA- Study</i>	
COFFEE BREAK	09.50 – 10.20
Session 1: Fundamentals	10.20 – 12.20
Chair: H. Burtscher	
Arnold F. / Max Planck Institut, Germany <i>The Chemical Tiger in Diesel Vehicle Exhaust: Detection of Highly Acidic, Highly Corrosive, and Potentially Toxic Fluorine Compounds</i>	
Konstandopoulos, A. / CPERI/CERTH, Greece <i>The Microstructure of Soot Aggregates Produced by the Combustion Aerosol Standard (CAST) Generator</i>	
Eichholz S. / TU Berlin, Germany <i>Characterisation of the Thermal and Kinetic Behaviour of Various Carbon Nanoparticles</i>	
Hertler D. / BOSCH, Germany <i>Investigations of Soot Formation in an Optically Accessible Gasoline Direct Injection Engine</i>	
Leidenberger U. / University of Bayreuth, Germany <i>Optical Investigations of the Influence of Diesel Engine Operating Parameters on Physical and Chemical Properties of Emitted Soot</i>	
Pratsinis S. / ETHZ, Switzerland <i>Multiparticle Sintering Dynamics: From Fractal-Like Aggregates to Compact Structures</i>	
LUNCH	12.20 – 13.20

Session 2: Combustion Engine Emissions**13.20 – 15.00**

Chair: Ch. Barro

Fuglsang K. / FORCE, Denmark

Characterization of Particle Emissions from a Marine Diesel Engine: Influence of Sampling Temperature on Particle Number, Size, and Morphology

Mamakos A. / JRC, Italy

Correlation Between PM, Soot and Airborne Particle Mass Emitted from Diesel Heavy Duty Engines at PM Levels Ranging from Euro V to Post-DPF

Platt St. / PSI, Switzerland

Primary and Secondary Organic Aerosol Emissions from Mopeds

Kittelson D. / University of Minnesota, USA

Particles from Soot Free Engines

Kobashi N. / Toyota, Japan

*Investigation of Solid Particle Number Measurement Smaller than 23nm***COFFEE BREAK and
POSTER SESSION****15.00 – 16.30****Public Voting on Poster Quality****Session 3: Particle Filter Systems****16.30 – 18.30**

Chair: J.Czerwinski

Komori T. / SUMITOMO CHEMICAL, Japan

Newly-developed Diesel Particulate Filter - the Sumitomo DPF

Cozzolini A. / West Virginia University, USA

Soot Model for DPF Monitoring over Transient Engine Operation

Gruenzweig Chr. / PSI Villigen, Switzerland

Visualization of Soot and Ash Distributions in DPF using Neutron Imaging

Heeb N. / EMPA, Switzerland

Parameters Affecting the Dioxin Formation in Diesel Particle Filters

Johnson T.V. / CORNING, USA

Next Generation Diesel Particulate Filters for Light- and Heavy-Duty Applications

Stachulak J. / VALE, Canada

*Evaluation of DPF Systems at Vale Creighton Mine***APERITIF offered by EXHIBITORS****18.30– 19.30****DINNER PARTY invited by Sponsors****19.45****Dinner Speaker: Andreas Mayer****Awards for the best 3 Posters**

Tuesday June 28th, 2011

Session 4a: Health Effects	08.00 – 09.50
Chair: P. Gehr	
Cassee F. / RIVM, The Netherlands <i>Combustion-derived and Engineered Nanoparticle Toxicity: Lessons Learnt from Air Pollution Research</i>	
Gerlofs-Nijland M. / RIVM, The Netherlands <i>Impact of Emission Control Technologies and Fuel Type on the Oxidative and Inflammatory Potential of Engine Exhaust Particles</i>	
Sioutas C. / University of Southern California, USA <i>Toxicity of Emissions from Heavy Duty Diesel Engines with Retrofit Controls</i>	
Hesterberg T. / Navistar, USA <i>Potentially Toxic Components in New Technology Diesel Exhaust are Dramatically Reduced Compared to Traditional Diesel Exhaust</i>	
Geiser M. / University of Bern, Switzerland <i>Responses of Lung Cell Cultures after Realistic Exposure to Primary and Secondary Carbonaceous Aerosols</i>	

COFFEE BREAK

09.50 – 10.20

Session 4b: Health Effects	10.20 – 12.10
Chair: P. Gehr	
Topinka J. / Biomed, Czechia <i>Comparison of Genotoxicity of Exhaust from a Diesel, Biodiesel and Rapeseed Oil Powered Engine – Pilot Study</i>	
Rothen-Rutishauser B. / University of Bern, Switzerland <i>Understanding Nanoparticle Muta-Genicity: Is the Ames Test a Suitable Technique to Provide Insight into the Relative Unknown?</i>	
Ristovski Z. / University of Brisbane, Australia <i>Measurements of Oxidative Capacity of Combustion Generated Nanoparticles using Profluorescent Nitroxide Probes</i>	
Bruch J. / University of Duisburg, Germany <i>Critical Experimental Conditions for Testing Combustion Generated Nanoparticles</i>	
Duffin R. / University of Edinburgh, UK <i>The Health Effect of Combustion Derived Nanoparticles – What? Where? How?</i>	

Panel Discussion on Health Effects	12.10 – 12.40
P. Gehr	

LUNCH

12.40 – 14.00

Session 5: Ambient Air Pollution**14.00 – 14.40**

Chair: C.-D. Schegk

Baghel R. / Uni Raipur, India

Carbonaceous Particulate Distribution in Indian Kitchens

Phuleria H.C. / University of Basel, Switzerland

*Spatiotemporal Variation of Particle Number Concentration in Urban Area of Basel, Switzerland and Relationship with Mass Measurements***COFFEE BREAK and
POSTER SESSION****14.40 – 15.40****Session 6: Instrumentation****15.40 – 18.00**

Chair: O. Bischof

Allmendinger K. / Emisense, USA

Development of a Real-Time Electronic Particulate Matter (PM) Sensor for Diesel OBD Applications and Comparison with Laboratory Instruments

Barro, Ch. / ETHZ, Switzerland

Development and Evaluation of an Optical In-Cylinder Soot Measurement Method

Besch M. / West Virginia University, USA

In-Use NTE PM Measurement Methodology Using an In-Line, Real-Time Exhaust PM Emissions Sensor

Fierz M. / IAS, Switzerland

Lung-Deposited Surface Area Measurements in Zürich

Jung H. / University of Riverside, USA

Measurement of Diesel Solid Nanoparticle Emissions Using a Catalytic Stripper for Comparison to Europe's PMP Protocol

Kondo A. / NGK, Japan

New Particulate Matter Sensor for On Board Diagnose

Rönkkö T. / University of Tampere, Finland

*Diesel Exhaust Nanoparticle Volatility Studies Using a New Thermodenuder with Low Solid Nanoparticle Losses***APERITIF offered by EXHIBITORS****18.00– 19.00**

Wednesday, June 29th, 2011**Session 7: Non Engine Emissions****08.00 – 09.20**

Chair: A. Ulrich

Keller A. / IAS, Switzerland

Considering Potential Secondary Organic Aerosol in Wood Combustion Emission Measurements

Lauber A. / HSLU Lucerne, Switzerland

Adhesion of Particles from Wood Combustion on Precipitation Surfaces

Sachse H. / University Ilmenau, Germany

Brake Dust Emissions

Stabile L. / University of Cassino, Italy

*Comparison of Different Flue Gas Treatment Sections in the Abatement of Ultrafine Particles Emitted by Waste Incinerators***COFFEE BREAK****09.20 – 09.50****Session 8: Legislation****09.50 – 11.30**

Chair: Th. Lutz

Steininger N. / European Commission, Belgium

Particle Number Emission Limits for Euro 6 Positive Ignition Vehicles

Bruckmann P./ LANUV, Germany

Do Low Emission Zones Reduce the Burden of Particulates?

Hagen D. / University of Missouri, USA

Mean Sizes for Gas Turbine Exhaust Soot Sampled at Engine Exit Plane

Rindlisbacher Th. / BAZL, Switzerland

Steps Towards a Certification Measurement Approach for Aircraft PM Emissions

May J. / AECC, Belgium

*Particulate Emissions from Typical Light-Duty Vehicles Taken from the European Fleet Equipped with a Variety of Emissions Control Technologies***Session 9: Global Warming****11.30 – 12.50**

Chair: U. Baltensperger

Lohmann U. / ETHZ, Switzerland

Impact of Black Carbon Aerosols on Global Warming

Eichler A. / PSI Villigen Switzerland

Ice Core Derived Changes in Black Carbon Concentrations

Raes F. / JRC, Italy

Tackling Black Carbon Emissions within a Multi-Pollutant Multi-Effect Context

Künzli N./ University of Basel, Switzerland

*Effects of Black Carbon Exposure on Human Health***Closing Remarks:**

K. Boulouchos

Lunch**13.00 – 14.00**

Focus-Event 2011 (1)	14.00 – 15.30
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Stand der Partikelfilternachrüstung in der Schweiz Gesetzliche Grundlagen – Vollzug – Stand der Technik
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Chair: A.Mayer

Minger J. / BAFU Schweiz

<i>Erfolge und Lücken bei der Dieselmotor-Minderung in der Schweiz</i>
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Diskussion

D'Urbano G. / BAFU, Schweiz

<i>Dieselmotorminderung bei Nonroad-Maschinen nach dem Stand der Technik – Minimierung der Partikelanzahlemissionen</i>

Diskussion

Rexeis M. / Universität Graz, Österreich
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<i>Partikel-Emissionen der Schwere Nutzfahrzeuge</i>
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Diskussion

COFFEE BREAK

15.30 – 16.00

Focus-Event 2011 (2)	16.00 – 17.00
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Chair: A.Mayer.

Pregger O. / Contecca Plan AG, Schweiz
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<i>Partikelfiltereinbau bei Dieselloks in der Praxis</i>
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Diskussion

Gottet H.-J. / Bundesamt für Verkehr, Schweiz .

<i>Der Weg zu Partikelfiltern für Schiffe in der Schweiz und auf dem Bodensee</i>

Diskussion

A.Mayer

<i>Zusammenfassung und Schlusswort</i>
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End of the 15th ETH-NPC

17.00

POSTERS

Poster Session 1: Fundamentals

1.	Bolla M.	ETHZ	<i>Soot Formation Modelling of n-Heptane Spray Combustion under Diesel Engine Conditions Using the Conditional Moment Closure Approach</i>
2.	Eggersdorfer M.	ETHZ	<i>Multiparticle Sintering Dynamics: From Fractal-like Aggregates to Compact Structures</i>
3.	Lähde T.	Uni Tampere	<i>Size Dependent Charge-Balance in the Diesel Exhaust Particle Size Distribution</i>
4.	Legerer F.	VERT	<i>Sensitivity to Measuring Accuracy in Estimating Parameters of Logarithmic Standard Distribution</i>
5.	Linares W.	CMT Valencia	<i>Evaluation of Non-Volatile Nucleation Particles in a HSDI Engine over Transient Operating Condition</i>
6.	Lüönd F.	METAS	<i>Charge Distribution in a Combustion Aerosol Standard</i>
7.	Mandal Bijan Kumar	Uni West Bengal	<i>Numerical Investigation of Soot Formation in Methane-Air Diffusion Flame under Microgravity Conditions</i>
8.	Zhao Huayong	Uni Oxford	<i>3D Temperature and Soot Loading Measurement in a Diffusion Flame Burner Using Tomographic Three Colour Spectrometry</i>

Poster Session 2: Combustion Engine Emissions

9.	Bielaczyc P.	BOSMAL	<i>Correlation Between Particle Mass and Number for Euro 5 Compression Ignition Vehicles</i>
10.	Bieniek A.	Uni Opole	<i>Possibilities to Reduce PM and NO_x Emissions at Nonroad Vehicle Engine by Advanced Control of EGR and Multiphase Injection</i>
11.	Gan T.H.	DSTO	<i>Field Characterisation of Diesel Particulate Emissions From a Euro 0 Engine</i>
12.	Khalek I.A.	SWRI	<i>Total and Solid Particle Mass and Number Emissions from a 2010 Vehicle Equipped with a GDI Engine Using 11 Different Fuels</i>
13.	Lykkegaard M.K.	DTI	<i>Shipboard Characterization of Particle and Gas Emission from a Danish Inland Ferry</i>
14.	Mamakos Athanasios	JRC	<i>Measurements of Sub 23 nm Particles Emitted from Late Technology Passenger Cars, Using a PMP Compliant Volatile Particle Remover</i>
15.	Pielecha Jacek	Uni Poznan	<i>The On-Road Particle Emissions Characteristics of Vehicles Fitted with Diesel Engines</i>
16.	Ristimäki Jyrki	WÄRTSILÄ	<i>Black and Organic Carbon Emissions from Marine (medium speed) Diesel Engines</i>
17.	Vojtisek-Lom M.	Uni Liberec	<i>On-board Monitoring of Small Engine Emissions</i>
18.	Yamada Hiroyuki	NTSEL	<i>New Technique of Nitrogen Compounds Causing Secondary Aerosol Formation in Automobile Exhaust Based on IR – CRDS</i>

Poster Session 3: Particle Filter Systems

19.	Czerwinski J.	AFHB	<i>Nanoparticle Emissions during Regeneration of DPF-Systems</i> <ul style="list-style-type: none"> passive regenerations: DOC + SCR; CSF alone active regenerations: standstill burner; fuel injection & DOC
20.	Hands T.	CAMBUS-TION	<i>In Situ Crack Detection for Automotive Diesel Particulate Filters</i>
21.	Mayer A.	TTM	<i>Diesel Particle Filter Systems for High Sulfur Fuel</i>
22.	Payne S.	Uni Cambridge	<i>Visualisation and Monitoring of Diesel Particulate Deposition</i>
23.	Ulrich A.	EMPA	<i>Emissions of Metal Oxides from IC Engines</i>
24.	Vlachos N.D.	CPERI/ CERTH	<i>Practically Relevant Ab-Initio Filtration Simulation with Full-Detail Nanoparticle Aggregate Geometry</i>
25.	Heuss W.	NGK	<i>New Particulate Filter Concept for Gasoline Engines</i>
26.	Zeng Lintao	TU Clausthal	<i>Catalytic Soot Oxidation Mechanisms in Structured Layers of Nanoparticles</i>

Poster Session 4: Health Effects

27.	Ducret-Stich R.	Uni Basel	<i>Impact of Residential Exposure to Highway Traffic Exhaust on Respiratory Health of Children in an Alpine Valley in Switzerland</i>
28.	Monsé Chr.	IPA	<i>Expolab: A New Whole Body Exposure Chamber for Assessing Occupational Health Risks</i>
29.	Steiner S.	Uni Bern	<i>An Optimized System to Investigate the Toxicity of Diesel Exhaust in Lung Cells in vitro</i>
30.	Steiner S.	Uni Bern	<i>Investigating the Effects of Cerium Dioxide and Diesel Exhaust Co-Exposure to the Epithelial Airway Barrier at the Air-Liquid Interface in vitro</i>
31.	Thiruvengadam A.	WVU	<i>Characterization of Particulate Matter Toxicity as a Function of Volatility from an Advanced Heavy-Duty Natural Gas Vehicle</i>
32.	Tirler W.	Uff. gestione rifiuti	<i>Sources of Ultra-fine Particles in Ambient Air of the City of Bolzano</i>

Poster Session 5: Ambient Air Pollution

33.	Ducret-Stich R.	Uni Basel	<i>Source Apportionment of Ambient PM10 Near a Major Highway in a Swiss Alpine Valley</i>
34.	Gianini M.	EMPA	<i>Chemical Composition and Source Apportionment of PM10 at Different Swiss Locations 2008/2009 Compared to 1998/1999</i>
35.	Hammer E.	PSI	<i>Calculation and Interpretation of Cloud Peak Super-saturations at the High Alpine Site Jungfraujoch</i>
36.	Phuleria H.C.	Uni Basel	<i>Correlation between Short-Term Measure of Traffic Noise, Traffic Volume and Particle Number Concentration in a Swiss Urban City, Basel</i>
37.	Ragettli M.S.	Uni Basel	<i>Commute Exposure to Ultrafine Particles - Measurement Approaches and Investigation of Exposure Determinants</i>
38.	Vojtisek-Lom M.	Uni Liberec	<i>Real-world Exhaust Emissions in Congested Urban Areas</i>

Poster Session 6: Instrumentation

39.	Arndt M.	AVL	<i>Pushing the Limits on PM Measurement for In-use Testing</i>
40.	Dirscherl K.	DFM	<i>Comparison of Different Types of Particle Counters with Aerosolized Polystyrene Reference Particles</i>
41.	Lenz K.	HORIBA	<i>Propriety to use NaCl Particles by Atomizing on Calibration of Particle Number Counting System as Reference Particles</i>
42.	Meier R.	IST	<i>Field Comparison of two Hand-Held Devices to Assess Airborne Ultrafine Particle Concentrations</i>
43.	Multari A.	MAHA	<i>Update of Gasoline and Diesel I/M Programs</i>
44.	Spielvogel J.	PALAS	<i>Simultaneous Use of a Butanol and Water CPC that are Connected to a Size Classifier to Obtain Time Resolved Submicrometer Particle Size Distributions in the Vicinity of a Mail Distribution Center</i>
45.	Swanson J.	Uni Minnesota	<i>Comparison of VPR and CS Methods for Solid Particle Measurements</i>
46.	Wahl C.	DLR	<i>Size Depending Particle Losses in Sampling Lines</i>
47.	Wang J.	ETHZ/EMPA	<i>Mass Concentration and Primary Particle Size of Metal Nanoparticle Agglomerates from Spark Discharge Measured by Universal NanoParticle Analyzer</i>
48.	Xu Fan	Uni Oxford	<i>Testing of a Volatile Particle Remover and a Thermo-Denuder using a DISI Engine</i>

Poster Session 7: Non Engine Emissions

49.	Heejung Jung	Uni Riverside	<i>The Hygroscopic and Droplet Growth of Cigarette Smoke Particles</i>
50.	Meyer N.	PSI	<i>Emissions from Future Sustainable Increases in Residential Wood Combustion in Switzerland</i>
51.	Stabile L.	Uni Cassino	<i>Measurement of Black Carbon Content Distribution during Incense Burning Event</i>

Poster Session 8: Legislation

52.	Reinoso A.	Geosur	<i>3000 buses equipped with DPF in Santiago de Chile</i>
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Poster Session 9: Global Warming

53.	Ammann M.	PSI	<i>The Climate Effect of Soot Particles Caught in Act</i>
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Instrument and Filter Exhibition

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- DEZA Schweizerisches Departement für Entwicklung und Zusammenarbeit
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- VERT VERT Association for Verification of Emission Reduction Technologies