

12th ETH Conference on Combustion Generated Nanoparticles
The Swiss Federal Office for the Environment is Patron of this Conference
 Zurich, 23rd – 25th June 2008

Conference Venue: Zürich ETH Zentrum, Main Building, HG F1
 Welcome-Party Sunday 22nd June, 7.00 pm, ETH Zentrum, Alumni Pavillon
 Conference Registration Monday 23rd June 7.30 am - see www.nanoparticles.ethz.ch

Agenda of Presentations

Monday 23rd June 2008

Welcome and Key-Lectures	09.00 – 09.50
Burtscher H. / FHNW, Switzerland <i>Welcome</i>	
Kasper M. / Matter Engineering, Switzerland <i>Housekeeping Announcements</i>	
Eckerle W.A. / Cummins, USA <i>Technology for Advanced Heavy Duty Diesel Engines</i>	Key-Lecture

Session 1: Legislation and International Projects	09.50 – 10.50
Chairman: M. Kasper	
Andersson J. / Ricardo, UK <i>Progress in the PMP Inter-Laboratory Exercises for Heavy Duty Engines</i>	
Jung H. / University of California, USA <i>Evaluation of the European PMP-Methodologies using Chassis Dynamometer and Onroad-Testing of Heavy Duty Vehicles</i>	
Vojtisek L.M. / University of Liberec, Czech Republic <i>Growth in Road Traffic, Off-Cycle Emissions, Aggressive Driving, and Real-World PM Emissions: Can the Benefits of New Vehicles Keep up?</i>	

COFFEE BREAK **10.50 – 11.20**

Session 2: Fundamentals	11.20 - 12.40
Chairman: C.-D. Schegk	
Arnold F. / MPI, Germany <i>Nanoparticle Formation in Modern Diesel Vehicle Exhaust: First Measurements of Key Precursor Gases and Particle Model Simulations</i>	
Kanjarkar S.R. / DLR, Germany <i>Experimental Investigation of Non-Catalytic Soot Particle Oxidation. A Contribution to Understand Complex Flame Chemistry</i>	
Kraft M. / University of Cambridge, UK <i>Towards a Detailed Soot Model for Internal Combustion Engines</i>	
Rossi M. / EPFL Lausanne, Switzerland <i>The Surface Characterization of Carbonaceous Nanoparticles and Flame Soot: the Chemical Composition of the Interface</i>	

LUNCH **12.40 - 14.00**

Session 3A: Emissions

Chairman: J. Czerwinski

14.00 - 15.20

Anyon P. / MAHA, Germany

Measurement and Management of Particle Emissions from In Use Diesel Engines – an Australian Perspective

Kirchen P. / ETHZ, Switzerland

Measurement and Analysis of the Soot Emissions from a Common Rail Passenger Car Diesel Engine during Transient Engine Operation

Lauer P. / MAN, Germany

Comparison of Particulate Matter and Dust Measurements and Determination of Elemental Carbon Content from Marine Diesel Engines

Petzold A. / DLR, Germany

*Particle Emissions from Marine Diesel Engines Operating on Biofuels***COFFEE BREAK and****POSTER SESSION****15.20 – 17.00****Session 3B: Emissions**

Chairman: P. Kirchen

17.00 – 18.20

Hagen D. / Missouri University, USA

Evolution of PM Emissions in the Near Field Plume of a Jet Engine

Sattler M. / Ökozentrum Langenbruck, Switzerland

Physical and Chemical on-line Characterization of Nanoparticles in Transient Burn Phases of Modern Wood Heat Appliances

Richard A. / PSI Villigen, Switzerland

Trace Elements in Wood Combustion Performed with Different Domestic Heating Stoves

Rönkkö T. / Tampere University of Technology, Finland

*Effect of Exhaust Aftertreatment on Characteristics of Diesel Nucleation Mode Particles***APERITIF and****EXHIBITION of Particle Filter Systems and New Instruments****18.20 – 19.30****DINNER PARTY invited by Sponsors****19.30****Dinner Speaker: Prof. Dr. Athanasios G. Konstandopoulos**

Tuesday 24th June 2008

Session 4A: Health Effects (1)	08.30 – 10.00
Chairman: B. Rothen-Rutishauser	
Peters A. / Helmholtz Zentrum München, Germany <i>Epidemiology on Health Effects of Solid Nanoparticles</i>	Key-Lecture
Riediker M. / Institute for Work and Health, Lausanne, Switzerland <i>A System to test the Toxicity of Brake Wear Particles from Cars</i>	
Oravisjärvi K. / University of Oulu, Finland <i>Deposition of Inhaled Particles from Diesel Fuelled Engines in Human Lungs: Comparison between Men and Women in Different Activity Levels</i>	
Stoeger T. / Helmholtz Zentrum München, Germany <i>Relationship between in vivo and in vitro Toxicity of six Types of Carbonaceous Nanoparticles</i>	

COFFEE BREAK**10.00 – 10.30**

Session 4B: Health Effects (2)	10.30 – 12.00
Chairman: A.Peters	
Müller L. / University of Berne, Switzerland <i>A System to Evaluate the Toxicity of Scooter Emission in Lung Cells In vitro</i>	
Baeza-Squiban A. / University of Paris, France <i>Size Partitioning of Airborne Particles to Compare their Proinflammatory Effect in Airway Epithelial Cells</i>	
Sioutas C. / Uni Southern California, USA <i>Physicochemical and Toxicological Assessment of Semi-volatile and Non-volatile Components of PM from Heavy-Duty Vehicles Operating with and without Advanced Emission Control Technologies</i>	
Discussion Moderator: B. Rothen-Rutishauser	

LUNCH**12.00 – 13.00**

Session 5A: Particle Reduction by Aftertreatment (1)**13.00 – 14.40**

Chairman: A. Mayer

J. Czerwinski / AFHB Biel, Switzerland
VERTdePN – Quality Verification Procedure of Combined DPF + SCR Systems for Retrofitting

Gautam M. ; Besch, M./ West Virginia University, USA
Effect of Engine-out NOx-Control Strategies on PM Size Distribution in 2010-compliant Heavy Duty Diesel Emissions

Heeb N. / EMPA, Switzerland
Secondary Effects of Catalytic Diesel Particle Filters: Conversion of PAHs versus Formation of Nitro-PAHs

Konstandopoulos A.G. / CERTH/CPERI, Greece
Multifunctional Reactors for Diesel Nanoparticle Emission Control

Kureti S. / University of Karlsruhe, Germany
Kinetic Modelling of the Catalytic Soot Oxidation on Fe₂O₃

COFFEE BREAK**14.40 – 15.10****Session 5B: Particle Reduction by Aftertreatment (2)****15.10 – 16.50**

Chairman: F. Jaussi

Kittelson, D. / University of Minnesota, USA
Effects of the U.S.EPA Ultra Low Sulfur Diesel Fuel Standard on Heavy-Duty Fleet Average Nanoparticle Emissions in Minnesota

Niemi S. / University of Vaasa, Finland
Effectiveness of Different Aftertreatment Systems in PM Reduction of Non-Road Diesel Engines

Pirjola L. / University of Helsinki, Finland
Reduction of Exhaust Nanoparticles by Retrofitted After-Treatment Systems in Diesel Passenger Cars

Ulrich A. / EMPA, Switzerland
Determination of the Filter Penetration of Nano-sized Metallic Fuel Additives from Diesel Vehicles with and without Particle Filters

Vogt R. / Ford, Germany
Investigation of Low-Levels of PM Emissions of a Modern European Diesel Particle Filter Equipped Vehicle

COFFEE BREAK**16.50 – 17.20****Session 6: Ambient Air and Climate****17.20 – 18.50**

Chairman: E. Weingartner

Baltensperger U. / PSI Villigen, Switzerland **Key-Lecture**
Primary and Secondary Organic Aerosol from Diesel Engines

Heuberger-Vernooij M. / University of Fribourg, Switzerland
Can Sources of Single Soot Particles in Atmospheric Samples be Identified Using X-Ray Microspectroscopy?

Popovicheva O. / Moscow State University, Russia
Water Interactions with Combustion Particles in the Atmosphere

Schmidhauser R. / PSI Villigen, Switzerland
Aerosol Light Scattering at High Relative Humidity

Wednesday, 25th June 2008

Session 7A: Instrumentation (1)	08.30 - 10.10
Chairman: D. Kittelson	
Beaucage G. / University of Cincinnati, USA <i>Dynamics of Nano-scale Soot in Diesel Exhaust via Small-Angle X-Ray Scattering (SAXS)</i>	
Fierz M. / FHNW, Switzerland <i>Concept for a Personal Sampler</i>	
Gorbunov B. / NANEUM, UK <i>A Novel Airborne Nanoparticle Size Distribution Spectrometer</i>	
Karg E. / Helmholtz Zentrum München, Germany <i>Specific BET Surface Area Measurement of Low-Mass-Samples</i>	
Khalek I.A. / SWRI, USA <i>Particulate Matter Portable Emissions Measurement Systems Measurement Allowance (PM-PEMS-MA) Project</i>	

COFFEE BREAK**10.10 – 10.40**

Session 7B: Instrumentation (2)	10.40 – 12.00
Chairman: O. Bischof	
Okuda H. / Shimadzu, Japan <i>Development of a Novel Method for Broad-Band and High Response Nanoparticle Concentration Counter</i>	
Subramanian R. ; Kok G. / Droplet, USA <i>Towards a Reference Material for Soot Measurement: Evaluation of Candidates with Scanning Electron Microscopy, SP2 and OC/EC Analysis</i>	
Yamada H. / NTSEL, Japan <i>Evaluation of PMP Number Counting Method for HD Diesel Engine</i>	
Yamashita T. / Toyota, Japan <i>Particle Number Emissions from Various Vehicles with PMP Proposal Method</i>	

Closing Remarks: Prof. Dr. K. Boulouchos**12.00****Lunch****12.10 – 13.30**

Focus-Event 2008**Low Emission Zones (LEZ) in Europe (1) 13.30 – 15.20**Leuenberger Chr./ Leuenberger Energie- und Umweltprojekte, Switzerland
*Welcome*Sadler L. / Sadler Consultants, Germany **Introduction**
*Air Quality Legislation, Management, Emission Sources and Health Effects*Sommer H.-J. / AWEL, Switzerland
*Estimation of Temporary Emission Reductions with a Low Emission Zone in Zurich*Lutz M. / Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz Berlin, Germany
*Berlin's Low Emission Zone – Rationale and Resume after 100 days in Force***COFFEE BREAK 15.20 – 15.50****Focus-Event 2008****Low Emission Zones (LEZ) in Europe (2) 15.50 – 16.50**Johansson Chr. / University of Stockholm, Sweden
*Effects on Emissions, Air Quality and Health of Congestion Charging and the Low Emission Zone in Stockholm*Beevers S. / King's College London, UK
*Investigation of the Impacts of the London Low Emission Zone***Are Low Emission Zones an Option in Switzerland ?****PANEL DISCUSSION 16.50 – 17.30****Moderator L.Sadler****End of the Conference****17.30**

POSTERS

1.	Baeza-Squiban A.	<i>Expression and Role of EGFR Ligands Induced in Airway Cells by PM_{2.5} and its Organic Components</i>
2.	Beaucage G.	<i>Small Angle X-Ray Scattering applied for In-Situ Studies of Diesel Exhaust</i>
3.	Bémer D.	<i>Characteristics of the Aerosol Produced by Thermal Metal Spraying</i>
4.	Bergamin N.	<i>"Emergency Regeneration" of DPF</i>
5.	Bergmann A.	<i>Calibration and Validation of PMP compliant Condensation Particle Counters and Dilution Systems using Combustion Aerosol Standard</i>
6.	Bolliger R.	<i>ESP Electrostatic Precipitator for domestic woodstoves and fireplaces.</i>
7.	Brandenberger Chr.	<i>Size, Number and Surface Influence the Entering of Particles into A549 Epithelial Lung Cells</i>
8.	Büchel R.	<i>Influence of Pt-Ba Proximity in Pt/Ba/Al₂O₃ DeNO_x Catalysts</i>
9.	Collings N.	<i>Weighing DPF Soot Load</i>
10.	Czerwinski J.	<i>Nanoparticle Filtration of PM Catalysts</i>
11.	Czerwinski J.	<i>VERTdePN – Quality Verification Procedure of Combined DPF + SCR Systems for Retrofitting</i>
12.	Fuć P.	<i>The Effect of Oxide Nanospheres on Strength Fracture in DPF Porosity Sinter</i>
13.	Isella L.	<i>Nanoparticle Langevin Dynamics</i>
14.	Janson S.	<i>Investigation of „Hot-spot“ Concentrations of Particulate Matter and NO₂ for Inner-city Districts by Means of a Mobile Van</i>
15.	Joergl H.	<i>Volatile and Non-Volatile Particles: First Investigations with a PMP-System</i>
16.	Jurányi Z.	<i>Measurement at Low Carbon Concentration with a Semi-continuous OC/EC Thermo-optical Analyzer</i>
17.	Kasper M.	<i>PM₁₀-Toxicity-Aquivalent – New Approach to a Health-Oriented PM-Characterization</i>
18.	Khalek I.A.	<i>Phase 1 of the Advanced Collaborative Emissions Study (ACES-1)</i>
19.	Legerer F.	<i>Black Carbon and Global Warming: EC versus CO₂ effects Based on Jacobson (ETH-NPC 2002)</i>
20.	Legerer F.	<i>Counting Numbers by Centibel – A Suggestions</i>
21.	Lehmann A.D.	<i>Analysis of Tight Junction Protein Expression in Macrophages and Dendritic Cells after Exposure to Diesel Exhaust Particles and its Functional Aspects Drawn from a Cellular Airway Model</i>
22.	Leutert G.	<i>Swiss Rule SNR 277205 and ISO-Standard Project on Testing Particle Filter Systems</i>
23.	May J.	<i>Particle Number and Particulate Mass Emissions Measurements on a EURO VI DPF-and SCR-equipped Heavy-duty Engine Using the PMP Methodologies</i>

24.	Mayer A.	<i>Impact of RME/Dieel Blends on Particle Formation, Particle Filtration and PAH-Emissions</i>
25.	Mayer A.	<i>18'000 Particle Trap Retrofits in Switzerland; Diesel Engines 10-3000 kW, 54 VERT-Certifications – Filtration Rate > 97 %</i>
26.	Mayer A.	<i>Nanoparticle Emissions of EURO4 and EURO5 HDV compared to EURO3 with and without DPF</i>
27.	Mehring M.	<i>Development of a TGA-FTIR-method as R&D tool in exhaust gas aftertreatment</i>
28.	Merkisz J.	<i>Measurement of Particle Matter Composition in Common Rail Diesel Engine</i>
29.	Meyer N.	<i>A new electrical bi-polar neutralizer</i>
30.	Payne S.	<i>Fundamental studies of soot deposition</i>
31.	Ruschel Y.	<i>Emissions of Ultrafine Particles Emitted from an EURO III Engine Running on Biodiesel</i>
32.	Schlatter J.	<i>Diesel Smoke Measurement – Optical Methods vs Particle Counting</i>
33.	Setyan A.	<i>Assessment of Diesel Exhaust Particulate Exposure and Surface Characteristics in Association with Levels of Oxidative Stress Biomarkers</i>
34.	Symonds J.	<i>Density of Particles Emitted from a Gasoline DI-Engine</i>
35.	Thiruvengadam A.	<i>Reduction of Ultrafine Nanoparticles from Natural Gas Fuelled Heavy Duty Transit Bus Equipped with an “Alternative” Oxidation Catalyst</i>
36.	Tritscher T.	<i>Hygroscopicity Properties of Aged Aerosols from Diesel and Wood Combustion</i>
37.	Vojtisek-Lom M.	<i>Reproduction of Chassis Dynamometer Drive Cycles on the Road Using a 5 Hz GPS Speed Signal</i>
38.	Vojtisek-Lom M.	<i>Reduction of Urban Fine Particle Matter Emissions through Retrofits of HV-Fleets: The Czech Diesel Retrofit Programme</i>
39.	Wahl C.	<i>Emission Indices of Current Flight Gas Turbines Compared with EURO IV Diesel Car Emission Standard</i>
40.	Waelti, B.	<i>The New Swiss Particle Filter Association SPV</i>
41.	Zuberi B.	<i>Characterization of High Porosity Ceramic Micro-Fibre based Diesel Nano-Particulate Filters</i>

Instrument and Filter Exhibition

Company:

- AVL List GmbH
- Cambustion
- Car Parts Kuhn GmbH & Co. KG
- Dekati Ltd.
- Droplet Measurement Techn.
- E.A.S.T.Solutions GbR
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ETH-Conference on Combustion Generated Nanoparticles 2008

- AKPF Arbeitskreis der Partikelfilter-Hersteller, Vienna, Austria
- AWEL Amt für Abfall, Wasser, Energie und Luft, Kanton Zürich
- BAFU Bundesamt für Umwelt, Berne, Switzerland
- BAZL Bundesamt für Zivilluftfahrt, Berne, Switzerland
- BECO Berner Wirtschaft – Immissionsschutz, Berne, Switzerland
- BAUMOT Baumot AG, Fehraltorf, Switzerland
- BFE Bundesamt für Energie, Berne, Switzerland
- BOSAL Bosal International, Lummen, Belgium
- CAMBUSTION Cambustion Ltd. / Cambridge, UK
- CARB California Air Resources Board, Sacramento, U.S.A.
- CPK Car Parts Kuhn / Münster, Germany
- DEZA Direktion für Entwicklung und Zusammenarbeit, Berne
- DINEX DINEX A/S, Middelfart, Denmark
- EMT EMT Solution AG, Rekingen, Switzerland
- EV Erdöl-Vereinigung, Zurich, Switzerland
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- ME Matter Engineering, Wohlen, Switzerland
- METAS Bundesamt für Metrologie und Akkreditierung, Berne-Wabern
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