

## 6<sup>th</sup> ETH Conference on Nanoparticle-Measurement

Zurich, 19<sup>th</sup> - 21<sup>st</sup> August 2002  
ETH-Zentrum (main building) HG E7

### Agenda of Presentations

M. Eberle / Professor IC-Engines and former Director PSI <i>Welcome and Introduction</i>	09.00 - 09.10
A. Mayer / TTM <i>Conference Organization</i>	09.10 - 09.15

<b>Session 1: Current International Research Projects</b> Chairman: M. Kasper	
19.8.2002	09.15 – 11.10
Mark Z.Jacobson / STANFORD UNIVERSITY <i>Current and future effects of black carbon on climate</i>	Keynote-Speaker
A.G. Konstandopoulos / CERTH/CPERI, G. Boretto / FIAT, P. Prenzinger / AVL, W.Brandstätter / CDL <i>An update on the diesel exhaust aftertreatment (DEXA) cluster of the EU-GROWT programme</i>	
M. Mohr / EMPA <i>Comparison study of PMP instrument candidates at EMPA</i>	
E. Payne, AEA TECHNOLOGY <i>Aerosol laboratory assessment of particle sizing instruments for vehicle emissions</i>	
D.J. Rickeard / EXXONMOBIL <i>CRC particle workshop, San Diego 21 October 2002</i>	
K. Boulouchos et al./ ETHZ, S.Aufdenblatten / Wärtsilä, A.Kasper / FHA , A.Forss / EMPA <i>Comparative investigation of PM-emissions from I.C.engines of different combust.system and size</i>	

**Coffee Break**  
**Poster Session**

**11.10 - 11.40**

<b>Session 2: Health Effects and Chemical Reactivity</b> Chairman: J. McAughey	
19.8.2002	11.40 – 13.10
P. Gehr , M.Geiser, S.Schürch. B.Rothen, N.Kapp / UNI BERNE, INSTITUTE of ANATOMY <i>Interaction of nanoparticles with internal lung surface - experimental work with fine particles</i>	
J.P. Morin / INSERM, F. Gouriou , F. Dionnet / CERTAM, M. Weill / CORIA <i>On board ELPI meas. of PM size and numbers in vehicle aeration system - lung deposition dynamics</i>	
J.P. Morin, A. Bion , M. Fall /INSERM, V. Keravec, F.Gouriou. F. Dionnet / CERTAM <i>Comparative toxicol. evaluation of SI and CI engine exhausts in an in vitro model of rat lung slices</i>	
B. Demirdjian , M.J. Rossi / LPA/EPFL <i>Chemical reactivity of soot and secondary organic aerosols generated under laboratory conditions</i>	
M.Gautam et al. / WEST VIRGINIA UNIVERSITY <i>Genotoxic and mutagenic potential of PM from Diesel engine operation on Fischer-Tropsch-fuel</i>	

**Lunch 13.10 – 14.20**

#### 4. ETH Conference on Nanoparticle Measurement

<b>Session 3: Sampling and Conditioning</b>		
Chairman: C.D. Schegk		
19.8.2002		14.20 – 15.45
V. Niemelä / DEKATI	<i>Sampling automotive exhaust with dilution and/or adsorption of volatile species</i>	
U. Mathis / EMPA	<i>Influencing parameters of nanoparticle formation from diesel exhaust</i>	
M.M. Maricq, R.E. Chase, R. Vogt, V. Scheer / FORD MOTOR COMPANY	<i>Constant volume rapid exhaust dilution</i>	
St. Carli / VOLKSWAGEN, U.Matter/ MATTER ENGINEERING	<i>Sampling methodology influences on modern Diesel particle number size distribution measurements</i>	
T.Kawai, Y.Goto, J.Lee / NTSEL	<i>Influence of thermodynamic dimensions on nanoparticle measurement</i>	

**Coffee Break**

**15.45 – 16.00**

<b>Session 4: Measurement / Instrumentation (Part 1)</b>		
Chairman: O. Bischof		
19.8.2002		16.00 – 17.45
T. Johnson / TSI	<i>Response of an electrical aerosol detector based on a corona jet charger</i>	
J. Tikkanen / DEKATI	<i>Continuous measurement of density and mass concentration of vehicle exhaust aerosol with MASMO</i>	
Ch. Gerhart, H.J. Grimm / GRIMM AEROSOL TECHNIK, M.Richter / GIP	<i>Concept and results for a new kind of portable SMPS + C system</i>	
R. Sommer, S. Schraml, A. Leipertz / ESYTEC	<i>Application of the LI<sup>2</sup>SA-Soot-Sensor for the characterization of modern low emission engines</i>	
S. Gupta / ARGONNE NATIONAL LABORATORY	<i>TG-1: Instrument to measure Diesel exhaust particulate emissions in real-time</i>	
J. Czerwinski / FH Biel	<i>NanoMet a potential analyzer for legal nanoparticle measurements</i>	

**Coffee Break**

**17.45 - 18.15**

**Poster Session**

<b>Session 5: Measurement / Instrumentation (Part 2)</b>		
Chairman: H. Burtscher		
19.8.2002		18.15 – 20.00
K. Reavell, N. Collings / UNIVERSITY OF CAMBRIDGE, T. Hands / CAMBUSTION	<i>Determ. of real-time part. size spectra and emission param. with a differential mobility spectrometer</i>	
R.A. Zahoransky / WIZARD, E. Laile, M. Claussen, Wollmann / CUTEC, A. Konstandopoulos/ CERTH	<i>Time resolved meas. of soot concentrations and mean particle sizes during EUDC and ECE cycles</i>	
H.J. Grimm, GRIMM AEROSOL TECHNIK, M.Richter / GIP	<i>Diesel soot monitoring with a high speed aerosol spectrometer</i>	
M. Jones / ATT	<i>Advanced opacimeters: their potential role in future emission testing legislation for Diesel vehicles</i>	
M. Heim / UNIVERSITY OF KARLSRUHE	<i>Performance of a new commercial electrical mobility spectrometer</i>	
W.Dreher, A.Harscher, W.Nisch, C.Burkhardt / NMI and W.Sebesse, S.Weissels / ADA	<i>TEM-analysis of Diesel nanoparticle emiss. to get a geometric correlation to SMPS mobility diameter</i>	

**Dinner Party, invited by Sponsors**

**20.15**

#### 4. ETH Conference on Nanoparticle Measurement

<b>Session 6: Nanoparticles in the Ambient Air and in Working Places</b>		
Chairman: J. Lemaire		
20.8.2002		08.30 – 10.15
M. Wyser, A. Stettler / BUWAL	<i>New Swiss regulation requires &gt; 95 % nanoparticle trapping efficiency for Diesels in construction</i>	
U. Baltensperger / E. Weingartner / PSI	<i>Change of physical and chemical properties of soot particles by aging processes in the atmosphere</i>	
M. Ketzler, P. Wählin, R. Berkowicz / NERI	<i>Street level versus urban background concentrations of submicron particles, first modeling studies</i>	
S. Sasaki / JARI	<i>PM size measurement to simulate atmospheric dilution</i>	
V. Scheer, R. Casati, R. Vogt / FORD RESEARCH CENTER	<i>Real-world assessment of exhaust particles in chase vehicle studies</i>	
D. Kittelson / UNIVERSITY OF MINNESOTA	<i>Comparison of on-road and lab diesel particle size distributions</i>	

**Coffee Break**  
**Poster Session**

**10.15 - 10.45**

<b>Session 7: Nanoparticles from Combustion (Part 1)</b>		
Chairman: Th. W. Lutz		
20.8.2002		10.45 – 12.30
D. Kittelson / UNIVERSITY OF MINNESOTA	<i>Chemical and physical characteristics of diesel aerosol</i>	
L. Jing / METAS	<i>Influence of air on the soot particles in co-flow diffusion flame</i>	
R. Kägi / EMPA	<i>Analysis of particles from wood combustion</i>	
V. Schmatloch / EMPA	<i>Reduction of particle emissions from small wood fired furnaces</i>	
N. Klippel / ALSTOM	<i>Gas turbines - sources or sinks for ambient air aerosols?</i>	
M. Gautam, D. Kim / WEST VIRGINIA UNIVERSITY	<i>Prediction of nucleation and coagulation modes in the formation of Diesel particulate matter</i>	

**Lunch Break**

**12.30 – 14.00**

<b>Session 8: Nanoparticles from Combustion (Part 2)</b>		
Chairman: K. Boulouchos		
20.8.2002		14.00 – 15.30
S. Kunte / LVV-ETHZ	<i>The influence of oxygenated fuels on the soot production potential - experiments and modelling</i>	
U. Lehmann / EMPA	<i>Particulate emissions of heavy duty engines on different test cycles</i>	
K. Schänzlin / ETHZ	<i>Comparison of the soot formation inside the cylinder and soot particle emission of a DI. SI. engine</i>	
Z. Ristovski / QUEENSLAND UNIVERSITY OF TECHNOLOGY	<i>Formation of nanoparticles in the exhaust of diesel busses for different levels of fuel sulfur content</i>	
A. Kasper / FH AARGAU, S. Aufdenblatten / Wärtsilä, A. Forss / EMPA, T. Lutz / ETHZ	<i>Particulate emissions from a marine Diesel engine</i>	

**Coffee Break**

**15.30-16.00**

#### 4. ETH Conference on Nanoparticle Measurement

<b>Session 9: After-Treatment</b> Chairman: A. Mayer		
20.8.2002		16.00 – 18.30
T.V. Johnson / CORNING	<i>Update on Diesel emission control technologies</i>	
F. Mei / BEKAERT	<i>Metal fiber based DPF for wide range of applications</i>	
M. Macduff, D. Spivey, A. Panesar / LUBRIZOL	<i>The benefits of platinum based additives for diesel particulate filter function</i>	
I.A. Khalek / SWRI	<i>Particle size distribution and mass emissions from a mining diesel engine equipped with a dry system</i>	
A.G. Konstandopoulos / CERTH-CPERI	<i>Growth dynamics of soot deposits in diesel particulate filters</i>	
F. Palmgren, P. Wählin, R. Berkowicz / NERI	<i>The effect of particle filters on heavy duty vehicles in Denmark</i>	
B. Holmén / UNIVERSITY OF CONNECTICUT, A.Ayala / CARB	<i>Oxidation catalyst effects on natural gas transit bus ultrafine particle emissions</i>	
L. Rubino, R.I. Crane / IMPERIAL COLLEGE	<i>After-treatment of nanoparticle emissions from gasoline engine exhausts</i>	
Z.Liu / FLEETGUARD	<i>Particle sizing experience with composite and extruded Diesel particulate filters</i>	

#### Sponsors: Stand 12.8.2002

- AKPF           Arbeitskreis Partikelfilter Hersteller
- BFE            Bundesamt für Energie / Bern
- BUWAL        Bundesamt für Umwelt, Wald und Landschaft / Bern
- CORNING     Corning Environment Technologies / Wiesbaden
- DCL           Diesel Controls Limited / Ontario
- ETHZ         Eidgenössische Technische Hochschule / Zürich
- EV            Erdöl-Vereinigung Schweiz / Zürich
- HJS           HJS Fahrzeugteile Fabrik / Menden
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