18th ETH Conference on Combustion Generated Nanoparticles

The Swiss Federal Office for the Environment is Patron of this Conference

Zurich, June 22nd – 25th, 2014

Conference Venue: Zürich ETH Zentrum, Main Building, HG E7
Welcome-Party 22nd June, 7.00 pm Alumni Pavillon invited by VERT-Association
Conference Registration Monday 23rd June 7.30 am
www.nanoparticles.ethz.ch

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Agenda of Presentations

Monday June 23rd 2014

	Welcome	**09.00-09.20**
	Boulouchos K. / ETHZ Switzerland *Welcome*	
	Barro Chr. / ETHZ, Switzerland *Housekeeping*	

	Opening Address	**09.20-09.30**
	Guzzella L. / Rector ETHZ, Switzerland	

	Key-Lectures	**09.30-10.20**
1	Zellner R. / University of Duisburg-Essen, Germany *Strategies for Research and Policies to Reduce Health Effects From Fine Particles in Ambient Air*	
2	Mayer A. / TTM, Switzerland *Request for BAT-Level of All In-Use Engines – a New Challenge for the OEM*	

COFFEE BREAK **10.20 – 10.50**

	Session 1: Fundamentals Chair: Burtscher H.	**10.50 – 12.10**
1	Arnold F. / Max Planck Institute, Germany *Combustion mediated Sulfate Nanoparticle Formation at the Tropopause:*	
2	Yamamoto K. / Nagoya University, Japan *Size Distribution and Oxidation Rate of Carbon Nanoparticles*	
3	Goudeli E. / ETHZ, Switzerland *Coagulation of Fractal-like Aerosols in the Transition Regime*	
4	Kook S. / University of New South Wales, Australia *In-Flame Soot Particles in an Automotive-Size Diesel Engine*	

LUNCH **12.10 – 13.10**

	Session 2A: Combustion Engine Emissions **13.10 – 14.30** Chair: Lutz Th.
1	Barro Chr. / ETHZ, Switzerland *Soot Reduction Mechanisms Using Post-Injections under Varying EGR Conditions*
2	Rodriguez F. / Universidad Nacional de Colombia *Particle Number Measurements of a CNG Euro VI Bus Operating in Bogotá for Public Transport*
3	Bielaczyc P. / BOSMAL Poland *Particulate Emissions from Passenger Cars with DISI Engines Tested at Sub-Zero Temperatures*
4	Stettler M.E.J. / University of Cambridge UK *Nanoparticle Emissions from Heavy Duty Dual-Fuel Diesel and Natural Gas Engines*

Short Break

	Session 2B: Combustion Engine Emissions **14.40 – 16.00** Chair: Barro Chr.
5	Vojtišek M. / Czech Technical University *Measurement of Particle Emissions from Small Engines During Real World Operation*
6	Di Iorio S. / Istituto Motori CNR, Italy *Experimental Investigation of Ethanol-Gasoline Dual-Fuel on Particle Emissions of a Small Engine*
7	Karjalainen P. / Tampere University, Finland *Exhaust Particles Formed During Engine Braking of GDI Vehicles*
8	Khalek I.A. / SWRI, USA *Solid Particle Number and Size and Ash Emissions from Vehicles During Engine Start-Up*

COFFEE BREAK and
POSTER SESSION **16.00 – 17.20**

	Session 2C: Combustion Engine Emissions **17.20 – 18.40** Chair: Czerwinski J.
9	Kittelson D. / University of Minnesota, USA *Nanoparticle Emissions from a Second Generation Biofuel: DME*
10	Brem B. / EMPA, Switzerland *Variability in non-Volatile Particulate Mass and Number Emissions of Aircraft Turbine Engines*
11	Liati, A. / EMPA, Switzerland *Electron Microscopic Analysis of Metal-bearing Particle Emissions from Diesel Engines*
12	Okamura K. / Toyota, Japan *Chemical Composition of the Size-Classified Nanoparticle Exhausted from Gasoline Vehicle*

APERITIF offered by EXHIBITORS **18.40**

Tuesday June 24th, 2014

	Session 3: Instrumentation Chair: Bischof O.	**08.00 – 09.20**
1	Hagen D. / Missouri University USA *PM Line Loss Correction without Direct Size Measurement*	
2	Hess A. / EMPA, Switzerland *On-Line SMPS-ICPMS Coupling for Simultaneous Analysis of Nanoparticles*	
3	Yamada H. / NTSEL, Japan *Measuring Particles Less than 23 nm Using PMP Methodology*	
4	Keller A. / FHNW, Switzerland *SOA - from Wood Burning Appliances in a Simplified Total Carbon Measurement*	

COFFEE BREAK **09.20 – 09.50**

	Session 4 A: Ambient Chair: Heeb N.	**09.50 – 11.10**
1	Hosseini Vahid / Sharif University, Tehran *Tehran Air Pollution with Respect to Particles: Problem and Mitigating Solutions*	
2	Lohmann U. / ETHZ, Switzerland *Climate Effects of Black Carbon Aerosols*	
3	Leskinen A. / Finnish Meteorological Institute *Aging of Diesel Engine Exhaust, Pellet Boiler Exhaust and their Mixture*	
4	Meier R. / Swiss Tropical and Public Health Institute *Indoor and Outdoor Concentrations of Ultrafine Particles, $PM_{2.5}$, $PM_{absorbance}$ and NO_2*	

Short Break

	Session 4 B: Ambient Chair: Schegk C.-D.	**11.20 – 12.20**
5	Müller M.D. / EMPA, Switzerland *Modelling Ultrafine Particle Number Concentration in Zurich with High Spatio-Temporal Resolution*	
6	Seipenbusch M. / TU Karlsruhe, Germany *Interdependence of Particle Number Conc. and PM 2.5 in Highly Polluted Urban Atmospheres*	
7	Zotter P. / PSI, Switzerland *14C-based Source Apportionment of Carbonaceous Aerosols in Switzerland for 2008 – 2012*	

LUNCH **12.20 – 13.20**

	Session 5 Aftertreatment **13.20 – 15.20** Chair: Mayer A.
1	Deinlein R. / DINEX, Germany *Dual Layer Coated High Porous SiC for SCR Integration into DPF*
2	Tartakovsky L. / Technion Israel *Analysis of Ultrafine Particle Emissions by In-Use Buses of Different Generation in Tel Aviv*
3	Konstandopoulos A.G / CPERI/CERTH, Greece *Asymmetric and Variable Cell Geometry Diesel Particulate Filters*
4	Kureti S. / University of Freiberg, Germany *Soot Oxidation on Manganese Oxide Catalysts in Diesel and Gasoline Exhaust Gas*
5	Kato K. / NGK, Germany *Advanced Catalyzed Gasoline Particulate Filter to Fulfill Future Emission Targets*
6	Pieber S.M. / PSI, Switzerland *Catalytic Reduction of VOCs from Wood Burning Emissions*

COFFEE BREAK and
POSTER VOTING SESSION **15.20 – 16.40**

	Session 6 A: Health Effects **16.40 – 18.30** Chair: Gehr P.
1	Von Garnier Chr. / Inselspital Bern, Switzerland *Health Effects of Nanoparticles in Susceptible Persons*
2	Gerlofs-Nijland M. / RIVM, The Netherlands *Health Effects of Combustion Sources in Perspective*
3	Amini H. / Kurdistan University of Medical Science, Iran *Estimating Spatial Variability of Ambient Particulate Matter Using Land-use Regression in Tehran*
4	Weise F. / NMI, Reutlingen, Germany *Toxic Effects of Nanoparticles from Biomass Combustion*
5	Violi A. / University of Michigan USA *How Chemical Composition of Nanoparticles Affects Interactions with Biological Systems*
6	Mayer A. / TTM Switzerland *PN versus PM: which Metric for Emission Limits and Air Quality Limits*

DINNER PARTY invited by Sponsors	**19.00**
Dinner Speaker: Künzli N.	

Wednesday, June 25th, 2014

	Session 6 B: Health Effects Chair: Rothen-Rutishauser B.	**08.00 – 09.50**
7	Geiser M. / University of Bern, Switzerland *Responses of Healthy and Diseased Airway Epithelia to Aged Aerosols from Wood Combustion*	
8	Heeb N. / EMPA, Switzerland *Catalysis – a Key Property of Diesel Particle Filters to Lower Emissions of Genotoxic Compounds*	
9	Steiner S. / Adolphe Merkle Institute, Fribourg, Switzerland *In-vitro Genotoxicity of Diesel Exhausts: Impact of Filtration and Catalysis*	
10	Zarcone M. / Leiden University Medical Center and TNO, The Netherlands *Development of an Innovative in Vitro Inhalation Model for Studying the Effects of Diesel Exhaust*	
11	Peters A. / Helmholtz Zentrum München, Germany *Health Effects of Ambient Ultrafine Particles – Do we know enough*?	

	***Poster Award* Ceremony** Lutz Th.	**09.50 – 10.10**

	COFFEE BREAK	**10.10 – 10.40**

	Session 7: Legislation Chair: D'Urbano G.	**10.40 – 12.20**
1	Künzli N. / Swiss Tropical and Public Health Institute *New Proposal of Swiss FCAH on how to Regulate Ambient Particulate Matter (PM)*	
2	Leuenberger Chr. / LEUPRO, Switzerland *Legislation Towards Risk-based Ambient Air Quality Standards*	
3	Acevedo H. / Universidad Nacional de Colombia *Bogotá DPF Retrofit Program for the Public Transport Buses Operating at High Altitude*	
4	Van Ham J. / EFCA, Belgium *A Fraction-by-Fraction Approach for Particulate Matter*	
5	Nowak A., Andres H.P. / PTB, Germany and METAS, Switzerland *Measuring Soot Particles from Engines: Recommendations from EMRP-ENV02 Project in WP1*	

	Lunch	**12.20 – 13.20**

FOCUS-Event

Field Inspection of Vehicle Emissions with Particle Number-based Instrumentation

	Focus Event Part 1: PN-PEMS for Vehicle Type Approval Chair: Leuenberger Chr.	**13.30 – 14.30**
1	Kasper M. *Introduction*	
2	Riccobono F. / JRC *How to Extend the Real Drive Emission Test Procedure to Particle Number*	
3	Cachón L. / Matter Aerosol AG, Switzerland *The Golden PEMS: Technical Aspects and Outlook*	

COFFEE BREAK **14.30 – 15.00**

	Focus Event Part 2 : Portable PN Instrumentation for Field Inspection Chair: Leuenberger Chr.	**15.00 - 16.40**
4	Krähenbühl S. / Federal Office for the Environment, Switzerland *New Instruments for PN-based Periodic Inspection: Results of a First Measurement Campaign*	
5	Andres H. / METAS, Switzerland *Field Measurement Instruments Ordinance: Calibration, Certification, Measurement Cycle*	
6	Horn H.-G. / TSI, USA. *Field Measurement, Technical Aspects of the First Generation PN Field Instrument*	
7	Fierz M. / FHNW, Switzerland *Towards Hand-Held DPF Inspection*	
8	Leuenberger Chr. *Conclusions*	

Concluding Remarks: Burtscher H. **16.45**

End of the 18th ETH-NPC **17.00**