21. ETH Conference on Combustion Generated Nanoparticles

Organization: Verein zur Durchführung der ETH-Nanopartikel-Konferenz - CHE-456.865.592
The Swiss Federal Office for the Environment FOEN is Patron of this Conference

Zurich, June 19th – 22nd 2017

Conference Venue: Zürich ETH Zentrum, Main Building, HG E7

Welcome-Party June 19th, 7.00 pm - ALUMNI Pavilion (see www.nanoparticles.ethz.ch)

Conference Registration opens Tuesday June 20th, 7.30 am
www.nanoparticles.ethz.ch

Agenda of Presentations

Tuesday June 20th 2017

Welcome	**09.00-09.20**
Burtscher Heinz / FHNW, Switzerland *Welcome*	
Barro Christophe / ETH Zürich, Switzerland *Housekeeping*	

Opening Address	**09.20-09.30**
D'Urbano Giovanni / FOEN, Switzerland	

Key Lecture	**09.30-10.00**
Kadijk Gerrit **/** TNO, NL *High Emission Risks with Highly Effective Emission Control Technology*	

COFFEE BREAK ***10.00-10.30***

Session 1: Ambient Air **Chair: Hüglin** Christoph	**10.30 – 12.10**
Eeftens Marloes / Swiss Tropical and Public Health Institute *Characterizing Real-time Vertical Air Pollution Gradients in an Urban Environment*	
Paulson Suzanne / UCLA, US *Cross-Intersection Profiles of Ultrafine Particles in Different Built Environments: Implications for Pedestrian Exposure and Bus Transit Stops*	
Schripp Tobias / German Aerospace Center, Germany *Ambient Ultra-fine Particle Concentration Monitoring During a "Fine dust alert" Event in Stuttgart Focusing on High Size and Time Resolution*	
Irwin Martin / Cambustion, UK *A New Method to Obtain the Black Carbon Mixing State of Biomass and Combustion Aerosols*	
Mylläri Fanni / Tampere University of Technology, Finland *Total Particle Number Concentration and Particle Size Distribution of Nanoparticles from Real-scale Pulverized Solid Fuel Combustion*	

LUNCH ***12.10 – 13.20***

Session 2: Fundamentals **13.20 – 14.20** **Chair: Burtscher** Heinz
Konstandopoulos Athanasios / CPERI/CERTH, Greece *On the Soot Particle Size Distribution Evolution During Oxidative Fragmentation*
Kelesidis Giorgios / ETH Zürich, Switzerland *Mobility Size and Effective Density of Soot Nanoparticles*
Arnold Frank / MPI, Germany *Nucleation-Particle Formation in Modern Diesel Vehicle Exhaust via Acid-Base Reactions*

Session 3: Aircraft and Airports **14.20 – 15.20** **Chair: Brem** Benjamin
Durdina Lukas / EMPA, Switzerland *Assessment of Particle Pollution from Jetliners: From Smoke Visibility to Nanoparticle Counting*
Anderson Bruce / NASA, USA *Effects of Fuel Composition on Aircraft Particle Emissions: Results from NASA Ground and Air-borne Experiments*
Sioutas Constantinos / University Southern California, USA *Comparison of Aircraft Emissions from Los Angeles International Airport to Urban Vehicle Traffic Emissions and its Impact on Air Quality in Los Angeles*

COFFEE BREAK
POSTER SESSION: *Posters of the Topics 1 ÷ 4* ***15.20 – 16.30***

Session 4: Non-Road Sources **16.30 – 17.30** **Chair: Schegk** Claus-Detlef
Eibl Sebastian / Wehrwissensch. Institut für Werk- und Betriebsstoffe, Germany *Formation of Respirable Carbon Fiber Fragments in Carbon Composite Fires*
Jensen Thomas Nørregaard / Danish Technological Institute *Characterization of Particle Emissions from Candles*
***Køcks** Morten* / Danish Technological Institute *Shipboard Characterization of a Combined Particle Filter and NOx-reducing Technology: Influence on Particle Number Concentration, Particle Size Distribution and Gas Emissions*

APERITIF offered by the EXHIBITORS ***from 17.30***

Wednesday, June 21st, 2017

Session 5A: Emission Control of Diesel and Gasoline Engines **08.30 – 09.50** **Chair: Czerwinski** Jan
Andersson Jon / RICARDO, UK *PN Measurements above & below 23nm*
Barro Christophe / ETHZ, Switzerland *Combustion and Emissions Investigations Using OME and Stoichiometric Operation in a Compression Ignition Engine*
Khalek Imad A. / SWRI, USA *Particle Number and Ash Emissions from a Heavy Duty Natural Gas and Diesel w/DPF Engines*
Muñoz Maria / EMPA, Switzerland *Are GDI Vehicle Exhausts Genotoxic like Non-treated Diesel Exhausts?*

COFFEE BREAK
POSTER SESSION**: Posters of the Topics 5 ÷ 7* ***09.50 – 11.00

Session 5B: Emission Control of Diesel and Gasoline Engines **11.00 – 12.00** **Chair: Barro** Christophe
Czerwinski Jan / AFHB, Switzerland *Nanoparticle Emissions of GDI Car with Increased Lube Oil Consumption, Potentials of GPF*
Pieber Simone M. / Paul Scherrer Institut, Switzerland *Gas Phase Composition and Secondary Organic Aerosol Formation from Gasoline Direct Injection Vehicles Investigated in Batch and Flow Reactors*
Vojtisek-Lom Michal / Czech Technical University Prague *On-road Measurement of Emissions of Reactive Nitrogen Compounds and Greenhouse Gases from Euro 6 Diesel and Natural Gas Vans Using an On-board FTIR*

LUNCH ***12.00 – 13.00***

Session 6A: Health Session **13.00 – 14.30** **Chair: Gehr** Peter
Künzli Nino / Swiss Tropical and Public Health Institute **Key-Lecture** *Ultrafine Particles and Health: Reviewing the Evidence in the Current Policy Context*
Brugge Doug / Tufts University, USA *Traffic-related UFP and Cardiovascular Health: Findings from a community-based study in Boston, MA*
Jarvis Ian / King's College, London, UK *Genotoxic and Inflammatory Responses of Human Bronchial Epithelial Cells to Diesel and Biodiesel Exhaust*
Nikitina Liudmila / Medical University, Graz, Austria *Nanotoxicology of Human Placenta: Evaluation of Suitable Model for Environmental Toxicity*

Session 7A: Particle Filters **14.30 – 15.50** **Chair: Lutz** Thomas
Kureti Sven / University of Freiberg, Germany *Soot Oxidation on Manganese Oxide Catalysts in Gasoline Exhaust*
Coplin Nick / ORBITAL Australia *Wall-flow Type DPF System to Replace Existing Wet Element Filter Systems Used in Typical LHDs in Underground Coal Operations*
Hosseini Vahid / Sharif University, Iran *New-fit Sulfur Tolerant DPF Solution to Meet Iran's New Emission Legislation*
Sappok Alexander / CTS, USA *In-Use Particulate Filter State of Health Monitoring: Prognostics and Diagnostics Using Radio Frequency Sensing*

COFFEE BREAK
POSTER SESSION: *Posters of the Topics 8 ÷ 10* ***15.50 – 17.00***

Session 7B: Particle Filters **17.00 – 18.00** **Chair: Mayer** Andreas
Wang Yajun / Chinese Research Academy *Real World Particle Number Reduction Evaluation under Shenzhen DPF Retrofit Program in China*
Yamamoto Kazuhiro / Nagoya University, Japan *Effect of Soot Size on Particle Filtration and Soot Cake Formation in Diesel Particulate Filter*
Jokiniemi Jorma / University of Eastern Finland *Novel Electrical Charging Condensing Heat Exchanger for Efficient Particle Emission Reduction and Heat Recovery in Small Boilers*

Aperitif ***18.00*** ***DINNER PARTY invited by Sponsors*** ***19.00*** ***Dinner Speaker: Scheck C.-D.***

Thursday, June 22nd, 2017

Session 8: Particle Metrology and Instrumentation **08.30 – 10.10** **Chair: Bischof** Oliver
Migliorini Francesca / CNR-ICMATE, Italy Can Black Carbon be defined by the Absorption Properties of Laser-heated Combustion Generated Nanoparticles?
Keller Alejandro / FHNW, Switzerland *FATCAT: New Characterization Method for Particulate Emissions from Wood Burning Appliances*
Khan M. Yusuf / Cummins, USA *Comparison of Full Flow Dilution, Partial Flow Dilution, and Raw Exhaust Particle Number Measurements*
Kittelson David / University Minnesota USA *Diesel and Gas Turbine Nanoparticle Density Distribution Measurements*
Terres Alexander / BMW Group, Germany *Inter-laboratory Comparison of Calibration Aerosols for Engine Exhaust Condensation Particle Counters*

***Poster Award* Ceremony** **10.10 – 10.30** **Bischof** Oliver

***Troyan Horse Award* Ceremony** **10.30 – 10.40** **Schiltknecht** Jacques

COFFEE BREAK **10.40 – 11.00**

Session 6B: Health Session **11.00 – 12.30** **Chair: Rothen-Rutishauser** Barbara
Zimmermann Ralf **/** JMSC Uni Rostock and Helmholz-Zentrum München **Key Lecture** *Biological effects of emissions from ship diesel, gasoline car-engines and wood combustion: Multi-omics characterization of aerosol-exposed lung cells and chemical profiles of the emissions.*
Baltzopoulou Penelope / APTL/CPERI/CERTH, Greece *Cross Evaluating the Effects of a Cerium-Based Diesel Fuel Additive on Exhaust Toxicity with in vitro Air-Liquid Interface Cell Exposure Systems of Different Flow Patterns*
Sorrentino Rosalinda / University of Salerno, Italy *Oxidized Ultrafine Particles Induce the Activation of the Inflammasome in Human Peripheral Blood Mononuclear Cells Obtained from Chronic Obstructive Pulmonary Disease Patients.*
Lawrence Alfred / Isabella Thoburn College, India *Indoor Air Quality Assessment and Health Impact with Respect to Household Conditions in Urban and Rural Lucknow Houses*

Lunch **12.30 – 13.30**

FOCUS EVENT: *Will Diesel Technology Survive?*

Introduction and Chair ***13.30 – 13.50***

Heeb Norbert, EMPA, Switzerland
Blue Technology not green enough: Nitrogen Chemistry of Current On-road DeNOx-Technologies

Section I: Impact of Current Diesel Technologies ***13.50 - 15.10***

Alt Gian-Marco	AWEL	*Remote Sensing of Diesel and Petrol NOx Emissions during a Decade*
Williams Rod	CONCAWE	*Effect of Fuel Properties on Particulate Emissions from Euro4, 5 and 6 Passenger Cars*
Hüglin Christoph	EMPA	*Effects of traffic related abatement policies on Swiss air quality trends*
Bauer Christian	SCCER	*The environmental performance of current and future passenger vehicles: Life cycle assessment based on a novel scenario analysis framework*

COFFEE BREAK ***15.10 – 15.40***

Section II: The Future of Diesel Technologies ***15.40 – 16.40***

Baar Roland	TU Berlin	*Diesel, Petrol or Electricity for Future Road Traffic*
Stenzel Karsten	WTZ	*The green marine engine – A dream or reality?*
Kadijk Gerrit	TNO	*Investigation into a Periodic Technical Inspection (PTI) test method to check for presence and proper functioning of Diesel Particulate Filters in light-duty diesel vehicles*

Goodbye: Barro, Christophe

End of the 21st ETH-NPC ***16.50***

POSTERS

Poster Session 1: Ambient Air

1.	**Abramesco Viktoria**	**Technion Israel**	A comparative Analysis of Ultrafine Particles air Pollution inside Diesel-Propelled Passenger Trains and Intercity Buses
2.	**Afroughi Mohammad Javad**	**University of Alberta**	Tehran UFP Study: Spatial and Temporal Distribution
3.	**Arhami Mohammad**	**Sharif University**	Carbonaceous, Organic and Toxic Metals Components of Particles and Their Seasonal Trends in Tehran, Iran
4.	**Babu Praveen**	**Indian Institute of Technology Delhi**	Assessment of Respirable Suspended Particulate Matters in an Underground Metro Station Platform in Delhi City, India.
5.	**Booker Douglas**	**NAQTS**	Quantifying Solid and Total Particle Number Concentrations from An Array of Vehicles Using the “Plume Chaser Method”
6.	**Friebel Franz**	**ETHZ**	CCN-Activation of Soot Particles after Long Term Exposure to Atmospherically Relevant Ozone Concentrations
7.	**Lohe Saurabh**	**IIT Bombay, Mubai, India**	Lung-Deposited Surface Area, Number, Black Carbon and Mass Concentration of PM2.5 from Different Kerbside Measurements

Poster Session 2: Fundamentals

8.	**Bisht Thapa Gunjan**	**Kathmandu University Nepal**	Fast and Efficient Removal of Arsenic through Supercritical Carbon Dioxide Assisted Modified Magnetic Nanoparticles
9.	**Ciajolo Anna**	**istituto ricerche sulla combustione, CNR**	Integrated Approach for the Structural Analysis and Sizing of Flame-formed Organic Carbon and Ultrafine Carbon Particles
10.	**Contreras Barbosa Yadert**	**Universidad de los Andes, Bogota**	Variation of Number of Particles Distribution by Temperature Effects in an Exhaust of a two-stroke Engine in a High Altitude City
11.	**Davis Justin**	**University Washington**	Growth Mechanism for Soot Primary Particles in Recirculating Hydrocarbon Flame
12.	**Kelesidis Georgios A.**	**ETHZ**	Optical Properties of Nascent and Mature Soot Aggregates Growing by Agglomeration & Surface Growth

13.	**Kelesidis Georgios A.**	**ETHZ**	Agglomerate Structure and Size Distribution in the Transition Regime: The Effect of Primary Particle Poly-dispersity
14.	**Park Wonah**	**Korea Institute of Machinery and Materials**	Effects of Oxygenated Fuels on Soot from Diesel Spray
15.	**Shaygani Afshin**	**Sharif University**	Quasi-Smoluchowski Equation and Deposition of Macro-Nano Particles onto a Surface
16.	**Sermon Paul**	**Brunel University**	Carbonaceous Combustion-Generated Nanoparticles (PM0.1)
17.	**Varghese Gelu**	**Brighton University**	Investigation of the Characteristics of Nanoparticles Emissions from the Small Diesel Engine

Poster Session 3: Aircraft and Airport

18.	**Brem Benjamin**	**EMPA**	Variability in Non-volatile Particulate Matter Emissions of Aero Gas Turbines; Engine Deterioration
19.	**Durdina Lukas**	**EMPA**	Correlations of Nonvolatile Particulate Matter Mass and Number Emissions and Particle Size with Smoke Number Determined for Commercial Aircraft Jet Engines
20.	**Elser Miriam**	**EMPA**	Optical Properties of Black Carbon Particles in Aircraft Engine Exhaust
21.	**Moore Richard**	**NASA**	Engine Particle Emission Indices for Aircraft Taking Off at Los Angeles International Airport
22.	**Teoh Roger**	**Imperial College London**	Aircraft Black Carbon Particle Number Emissions – New Predictive Method & Uncertainty Analysis
23.	**Whitefield Philip**	**Missouri University**	Plume Processing of Soot Aerosol in a Jet Engine Exhaust

Poster Session 4: Non-Road Sources

24.	**Jensen Thomas Nørregaard**	**Danish Technological Institute, Aarhus, Denmark**	Characterization of particle emissions from candles
25.	**Køcks Morten**	**Danish Technological Institute, Aarhus, Denmark**	Shipboard characterization of a combined particle filter and SCR system: Influence on particle number concentration, particle size distribution and gas emissions
26.	**Kuittinen Niina**	**Tampere University of Technology**	Number and Characteristics of Particles Emitted from a Marine Engine Using Different Fuels
27.	**Pratte Pascal**	**Philip Morris International**	Solid Particle Investigations in the Mainstream of 3R4F Reference Cigarettes, and the Tobacco Heating System THS2.2 and Commercial Cigarettes
28.	**Setyan Ari**	**EMPA**	Dynamic Properties of Exhaled e-Cigarette Aerosol vs. Conventional Cigarette Smoke
29.	**Vojtisek-Lom Michal**	**Czech Technical University in Prague & Technical University of Liberec**	On-track Measurements of Exhaust Emissions from Diesel Motorized Car and Locomotives During Line-haul passenger Service
30.	**Zardini Alessandro**	**European Commission**	Exhaust Emissions from Small Utility Engines: Effect of Different Fuels and Lube Oils

Poster Session 5: Emission Control of Diesel and Gasoline Engines

31.	**Bagheri Mehdi**	**Technical University of Berlin**	Simultaneous Application of Exhaust Gas Recirculation and non-constant Injection Rates to reduce NOx and Soot Emissions in Diesel Engines
32.	**Bleicker Dirk**	**CARIT Automotive GmbH & Co. KG**	Increased Exhaust Aftertreatment Availability and Efficiency by User Friendly Data Logging and Communication
33.	**Brough Robert**	**University of Nottingham**	Structure Analysis of Primary Carbon Nanoparticles from a Modern Turbocharged Direct-injection Gasoline Engine
34.	**Cha Junepyo**	**Korea National University of Transportation**	Evaluation of Real Driving Emissions Characteristics with Light Duty Vehicles on Domestic Sales
35.	**Czerwinski Jan**	**AFHB**	Nanoparticle Emissions from Gasoline Cars DI & MPI

36.	**Keller Alejandro**	**University of Applied Sciences Northwestern**	High Time-resolved SOA-formation Potential of Emissions from GDI engines
37.	**Kim Kangjin**	**University Korea**	Size-resolved Nanoparticle and Hazardous Air Pollutants (HAPs) Emissions Characteristics with Low-, Medium-, and High-proportion of Ethanol Contents Fuels from a Direct Injection Spark Ignition (DISI) Vehicle
38.	**Koczak Justin**	**University of Michigan**	Morphology and Nanostructure of Size-Selected Ultrafine Particles Emitted by a Gasoline Direct Injection Engine
39.	**Muñoz Maria**	**EMPA**	Effect of two Oxygenated Fuels on Genotoxic Emissions of GDI Vehicles
40.	**Oles Jan Piotr**	**University of Nottingham**	Evaluating Performance on Uncoated GPF in Real World Driving Using Experimental Results and CFD Modelling
41.	**Padmanaban Vishnu**	**University West Virginia**	Characterization of Particle Number (PN) Emissions from Modern Gasoline Vehicle during High Transient Vehicle Activity
42.	**Rubino Lauretta**	**GM Europe / Opel**	GPF Durability Study at two Different Exhaust Locations for two Identical Vehicles: Effect of Soot and Ash accumulation over Lifetime

Poster Session 6: Health Impact

43.	**Bhardawaj Avdesh**	**Indian Institute of Technology Delhi**	A Study of Fine and Ultrafine Particle Exposure, Dietary Habits and Link to Cardiovascular Diseases among Volunteer Subjects in Delhi
44.	**Bisig Christoph**	**Adolphe Merkle Institute**	An in vitro Exposure Method to Assess Adverse Effects of Ambient Air Using Human Lung Cells
45.	**Lonati Giovanni**	**Politecnico di Milano**	Toxicity of Biomass Combustion Generated Ultrafine Particles: Evidence from Stack-sampled and Airborne UFPs
46.	**Topinka Jan**	**Institute of Experimental Medicine CAS, Czech Republic**	Genotoxic Potential of Particulate Emissions from Residential Solid Fuel Boilers: The Effect of Technology, Fuel, and Operation Output

Poster Session 7: Particle Filters

47.	**Coplin Nick**	**ORBITAL Australia**	Wall-flow Type DPF System to Replace Existing Wet Element Filter Systems Used in Typical LHDs in Underground Coal Operations
48.	**Iojoiu Eduard Emil**	**Volvo Group Trucks Technology**	Biofuel Impact on Diesel Engine After-treatment: Deactivation Mechanisms and Soot Reactivity
49.	**Lintis Laura**	**Institut de Radioprotection et de Sûreté Nucléaire**	Water Sorption Phenomenon on Solid Particles Emitted during a Fire: Identification of the Influencing Physico-chemical Parameters
50.	**Schlickum Volker**	**Berliner Senatsbehörde**	Defects by DPF
51.	**Zöllner Christian**	**LTTT, Bayreuth**	Comparison of Loading and Regeneration Behavior of Uncoated, Coated and Aged Diesel Particulate Filters

Poster Session 8: Particle Metrology and Chemical Characterization

52.	**Aakko-Saksa Päivi**	**VTT Finland**	Analysing Elemental Carbon from Ship Particulate Matter: Artefacts and Possible Solutions
53.	**Gerkens Stefan**	**TESTO**	Systematic Study on the Robustness of a Diffusion Size Classifier Sensor for Nanparticle Characterisation
54.	**Haffner-Staton Ephraim**	**University of Nottingham**	Optimisation of 3D-TEM Methods for High-throughput Flame-generated Soot Nanoparticles Analysis
55.	**Höfert Norbert**	**VDI Düsseldorf**	An Approach to a Harmonized Method for Monitoring the Particle Number Size Distribution of Ultrafine Particles in Ambient Air
56.	**Ko Jinyoung**	**University Korea**	Impact of Catalytic Stripper (CS) on the Characteristics of Particle Number (PN) Emissions from a GDI Vehicle over the World-harmonized light-duty Vehicle Test Cycle (WLTC)
57.	**Okamura Kazumasa**	**Toyota**	Investigation of the Simplified Measurement Technique of the Secondary Aerosols Formed from Gaseous Emissions of Vehicle Exhaust.
58.	**Rönkkö Topi**	**Tampere University**	Nanoparticles in natural gas engine exhaust
59.	**Paulson Suzanne**	**Department of Atmospheric and Oceanic Sciences, UCLA**	HULIS Enhancement of Hydroxyl Radical Formation from Fe(II): Kinetics of Fulvic Acid-Fe(II) Complexes in the Presence of Lung Anti-Oxidants

60.	**Shaygani Afshin**	**Sharif University**	Bayesian Inference Applied to a CFD-generated Database for Calibration of Electrical Mobility Spectrometer (EMS) and Size Distribution Measurements of Particles
61.	**Shingler Taylor**	**National Aeronautics and Space Administration - Langley**	Black Carbon Shootout: Instrument Intercomparison
62.	**Šperka Jiří**	**Czech Metrology Institute, Brno**	3D Printed Module for Air Flow Control of PPD42 Particle Sensor
63.	**Stanciu Stefan G.**	**University Bucharest**	Characterization of Nanostructured Materials, Biological Specimens, and their Interaction by means of Correlative Optical Imaging in the Far-field and Near-field Regimes
64.	**Svedberg Mika**	**Airmodus**	Fast Size Distribution Measurement for < 10 nm Plasma Generated Particles
65.	**Visser Bradley**	**Fachhochschule Nordwestschweiz**	Photothermal interferometry for the in-situ measurement of aerosol light absorption
66.	**Yamada Hiroyuki**	**Tokyo Denki University**	Sub-10 nm Particles Observation Using PMP Methodology -Down from Ten-
67.	**Zerrath Axel**	**TSI**	Design Criteria and Early Stage Development of the Next Generation of Butanol CPC's

Poster Session 9: Legislation and Enforcement

68.	**Bainschab Markus**	**University Graz**	Extending Particle Number Limits to below 23 nm: First Results of the H2020 DownToTen Project
69.	**Fierz Martin**	**Naneos Particle Solutions**	Simple periodic DPF inspection with a handheld device
70.	**Press-Kristensen Kåre**	**Danish Ecological Council**	Taxation of Residential Burning
71.	**Reinoso Aliosha**	**GEASUR**	Santiago de Chile Experience with Respect to Inspection and Maintenance Using Particle Number Measurement

Poster Session 10: Biomass Combustion and Biofuels

72.	**Berhardt Alexander**	**IZES**	Field Tests of an Electrostatic Precipitator in Different Small Scaled Biomass Boilers: Chemical and Physical Properties of Different Ash Fractions
73.	**Bhattu Deepika**	**PSI**	Gas and Particle Phase Emissions from Residential Wood Combustion
74.	**Holubcik Michal**	**University of Zilina, Slovakia**	Particulate Matter Production of Small Heat Source Depending on the Bark Content in Wood Pellets
75.	**Jokiniemi Jorma**	**University of Eastern Finland**	Study of High-temperature Oxidation of Wood Combustion Particles Using Tandem Differential Mobility Analysis
76.	**Singh Ankur**	**Indian Institute of Technology Delhi**	Understanding the Current Usage Pattern of Residential Biomass Fuel and its Implications in Northern Indian Region
77.	**Sulovcova Katarina**	**University of Zilina, Slovakia**	Geometrical Optimization of the Flue Gas Path with Regard to Particulate Matter Reduction
78.	**Zotter Peter**	**Bioenergy Research, Lucerne**	Primary and Secondary Particle and Gas Phase Emissions from nine State-of-the-art Wood Combustion Devices

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Instrument and Filter Exhibition 2017

Company	Floor	Booth#
Baumot	D	9
Cambustion	E	13
Catalytic Instruments GmbH & Co.KG	D	1
Clean Air Enterprise	D	8
CPK Automotive GmbH & Co.KG	E	10
Dekati Ltd.	E	15
Innospec Ltd.	D	7
JING AG	D	4
Naneos particle solutions	E	14
Palas	D	5
Tehag	D	3
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- MAHA MAHA Maschinenbau Haldenwang GmbH & Co. KG, Deutschland
- METAS Bundesamt für Metrologie und Akkreditierung, Bern-Wabern, Schweiz
- NGK NGK Europe GmbH, Kronberg i.T., Germany
- NL-UMWELTMINIST. Ministry of Infrastructure and the Environment of the Netherlands
- SCHILTKNECHT Dr. Jacques Schiltknecht MD, Ärzte für Umwelt / Luzern
- SUVA Schweizerische Unfallversicherungsanstalt, Luzern, Schweiz
- SWRI South West Research Institute, Sant Antonio, USA
- TEHAG TEHAG AG, Schlatt, Schweiz
- TESTO Testo AG, Lenzkirch, Deutschland
- TSI TSI GmbH, Particle Instruments, Aachen, Deutschland
- VERT VERT Association for Verification of Emission Reduction Technologies
- ZÜRICH STADT Umwelt- und Gesundheitsschutz Zürich UGZ, Schweiz