

# 19<sup>th</sup> 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 is Patron of this Conference

Zurich, June 28<sup>th</sup> – July 1<sup>st</sup>, 2015

Conference Venue: Zürich ETH Zentrum, Main Building, HG E7  
Welcome-Party 28<sup>th</sup> June, 7.00 pm Alumni Pavillon invited by VERT-Association  
Conference Registration opens Monday 29<sup>th</sup> June 7.30 am  
[www.nanoparticles.ethz.ch](http://www.nanoparticles.ethz.ch)

## Agenda of Presentations

### Monday June 29<sup>th</sup> 2015

<b>Welcome</b>	<b>09.00-09.20</b>
<b>Burtscher</b> Heinz / FHNW, Switzerland <i>Welcome</i>	
<b>Barro</b> Christophe / ETH ZURICH, Switzerland <i>Housekeeping</i>	
<b>Opening Address</b>	<b>09.20-09.30</b>
<b>Prof. Dr. Sarah Springman</b> / Rector ETH ZURICH, Switzerland	
<b>Key-Lecture</b>	<b>09.30-10.00</b>
<b>Robertson</b> William / ARB California <i>Toward Widespread e-Mobility and the Ultimate Solution for Combustion-Generated Nanoparticles</i>	
<b>COFFEE BREAK</b>	<b>10.00 – 10.30</b>
<b>Session 1: Fundamentals</b>	<b>10.30 – 12.00</b>
Chair: <b>Burtscher</b> Heinz	
<b>Biswas</b> Pratim / Washington University St. Louis, USA <i>Nanoparticle Measurement, Formation and Capture in Coal Combustion Systems</i>	
<b>Dastanpour</b> Ramin / University of British Columbia, Canada <i>The Effect of Primary Particle Polydispersity on the Morphology and Mobility of Agglomerates</i>	
<b>Jurányi</b> Zsafia / FHNW, Switzerland <i>Determination of the Shape of Combustion Aerosol Particles Based on their Angular Light Scattering</i>	
<b>Lee</b> Chun Beom / KATEC , Korea <i>Morphology and Structure of Engine-like Soot Particles formed by a Soot/SOF Generator</i>	
<b>LUNCH</b>	<b>12.00 – 13.00</b>

<b>Session 2: Combustion Engine Emissions from Vehicles</b>	<b>13.00 – 14.40</b>
Chair: <b>Lutz Thomas</b>	
<b>Barro</b> Christophe / ETH ZURICH, Switzerland <i>Particulate Matter from “Soot-Free” Fuels in Diesel Engines</i>	
<b>Thiruvengadam</b> Arvind / West Virginia University, USA <i>Real-World On-Road Particulate Matter Emissions from Latest Technology Heavy-Duty Vehicles Using a Mobile CVS Laboratory</i>	
<b>Fleischman</b> Rafael / Technion, Haifa, Israel <i>Nanoparticle Emissions from an SI Engine Fueled with Gasoline and Methanol Reforming Products</i>	
<b>Northrop</b> William / University of Minnesota, USA <i>Semi-Volatile Nanoparticle Emissions From Diesel Low Temperature Combustion Modes</i>	
<b>Vojtisek-Lom</b> Michal / Technical University Prague, Czech Republic <i>Lowering Laboratory and Real Driving Particle Emissions of Direct Injection SI Engines with n-Butanol and Isobutanol Blends</i>	

**Short Break****14.40 – 14.50**

<b>Session 3A: Aftertreatment</b>	<b>14.50 – 16.10</b>
Chair: <b>Czerwinski Jan</b>	
<b>Bailey</b> Brett / IVHCO, USA <i>Global Non-Thermal Active SCR/DPF Emissions Reduction Technology</i>	
<b>Muñoz</b> Maria / EMPA, Switzerland <i>PAH and Nitro-PAH Emissions from GDI Vehicles</i>	
<b>Hohl</b> Yves / LIEBHERR, Switzerland <i>Impact of Different Fuels on Engine-out-Emissions and on the SCR-on-Filter System</i>	
<b>Konstandopoulos</b> Athanasios / CPERI-CERTH, Greece <i>Soot Deposit Evolution and the Mechanism of Particle Emissions During Regeneration in Diesel Particle Filters</i>	

**COFFEE BREAK****POSTER SESSION****16.10 – 17.10**

<b>Session 3B: Aftertreatment</b>	<b>17.10 – 18.30</b>
Chair: <b>Schegk Claus-Detlef</b>	
<b>Sappok</b> Alexander / Filter Sensing Technologies Inc., USA <i>Real-Time Particulate Filter Soot and Ash Measurements via Radio Frequency Sensing</i>	
<b>Zinola</b> Stephane / IFP Energies Nouvelle, France <i>Comprehensive Analysis of Phenomena during Catalyzed DPF Active Regeneration.</i>	
<b>Sheng</b> Su / VETC, Xiamen, China <i>Diesel Particle Filter Testing for In-Use Vehicle Retrofit</i>	
<b>Wolff</b> Thomas / DINEX, Germany <i>Using SCR on Filter Technology for Downsizing Future HDD On-Road and Off-Road Systems for Euro VI and Stage V</i>	

**APERITIF offered by EXHIBITORS****18.30**

**Tuesday June 30<sup>th</sup>, 2015**

<b>Session 4: Instrumentation</b>	<b>08.00 – 09.20</b>
Chair: <b>Bischof</b> Oliver	
<b>Khalek</b> Imad / SWRI, USA <i>Particle Sensors for Onboard Diagnostics</i>	
<b>Pucher</b> Ernst / Vienna University of Technology, Austria <i>Route Related Real-World Particulate Number and NO<sub>x</sub> Emissions of Euro 5 and Euro 6 LDV</i>	
<b>Karjalainen</b> Panu / Tampere University, Finland <i>Real-Time Exhaust Particle Measurements with High-Resolution Low-Pressure Cascade Impactor</i>	
<b>Sioutas</b> Constantinos / University Southern California, USA <i>New Technique for Online Measurements of Trace Metals in Ambient Particulate Matter (PM)</i>	

<b>COFFEE BREAK</b>	
<b>POSTER SESSION</b>	<b>09.20 – 10.30</b>

<b>Session 5A: Health Effects</b>	<b>10.30 – 12.00</b>
Chair: <b>Rothen-Rutishauser</b> Barbara	
<b>Probst-Hensch</b> Nicole / Swiss Tropical and Public Health Institute, Switzerland <i>Health Consequences of Ultrafine Particles – an Exposome Perspective</i>	
<b>Tsai</b> Ming-Yi / Swiss Tropical and Public Health Inst, Switzerland <i>Insights into the Spatial and Temporal Distribution of UFP from Swiss Health Studies</i>	
<b>Costantini</b> Maria / HEI, USA <i>Advanced Collaborative Emission Study (ACES): Summary of New-Technology Diesel Engine Emissions Characterization and Chronic Rodent Inhalation Study</i>	
<b>Gerlofs-Nijland</b> Miriam / RIVM, The Netherlands <i>Hazard Assessment of Source-Specific Fine Particulate Matter</i>	

**LUNCH** **12.00 – 13.00**

<b>Session 6: Ambient Particles</b>	<b>13.00 – 14.20</b>
Chair: <b>Heeb</b> Norbert	
<b>Anderson</b> Robert / TSI and CARB, USA <i>Near-Road Monitoring of Ultrafine Particle Number from Heavy Duty Diesel Truck Traffic</i>	
<b>Querol</b> Xaver / IDAEA-CSIC, Spain <i>Outdoor and Indoor Particle Concentrations in Schools of Barcelona during the BREATHE-ERC-AG Study</i>	
<b>Merkisz</b> Jerzy / Poznan University, Poland <i>Selected Problems of the Measurements of Particulate Matter from Vehicles Performed under Actual Operating Conditions</i>	
<b>Trentini</b> Arianna / ARPA, Italy <i>Comparison Nucleation Event in Rural and Urban Sites in Po Valley, Italy</i>	

<b>COFFEE BREAK and</b>	
<b>POSTER SESSION</b>	<b>14.20 – 15.20</b>

<b>Session 7: Combustion Emissions from Non-Vehicle Sources</b>	<b>15.20 – 17.00</b>
Chair: <b>Barro</b> Christophe	
<b>Abegglen</b> Manuel / ETH ZURICH, Switzerland <i>Chemical Characterization of Particulate Matter Aircraft Turbine Engine Exhaust using Single Particle Mass Spectrometry</i>	
<b>Durdina</b> Lukas / EMPA, Switzerland <i>Spatial Variability of PM and Gaseous Emissions at the Exit Plane of an in-Service Commercial Aircraft Turbine Engine</i>	
<b>Anderson</b> Maria / Chalmers University, Sweden <i>Nanoparticle Emissions from LNG and Other Low Sulphur Marine Fuels</i>	
<b>El Haddad</b> Imad / PSI, Switzerland <i>Emissions from Heavy Fuel Oil Combustion in a Ship Research Engine and Associated Secondary Organic Aerosol Formation Potential</i>	
<b>Frederiksen</b> Maj / Danish Technological Institute <i>Particle Emissions From Burning of Waste in Wood-Burning Stoves</i>	
<b>Short Break</b>	<b>17.00 – 17.10</b>
<b>Session 8A: Legislation</b>	<b>17.10 – 18.30</b>
Chair: <b>Cachón</b> Luis	
<b>Mathies</b> Karsten / TÜV Süd, Germany <i>The New Heavy Duty Diesel Environmental Regulation of Iran</i>	
<b>Yamada</b> Hiroyuki / Traffic Safety and Environment Lab. Japan <i>Emissions from HD Truck with Damaged DPF and its Detection at PTI</i>	
<b>Friedrich</b> Axel / Berlin, Germany <i>Road Particle Number measurements from GDI vehicles compared to a Euro 6 Diesel vehicle</i>	
<b>Nowak</b> Andreas / PTB, Germany <i>Optimization of Silver Particle Number Size Distributions from a Nucleation Furnace by Modification of Heat Shields and Injection Nozzles</i>	
<b>DINNER PARTY invited by Sponsors</b>	<b>19.00</b>
<b>Dinner Speaker: Hosseini</b> Vahid	

**Wednesday, July 1<sup>st</sup> 2015**

<b>Session 8B: Legislation</b>	<b>08.00 – 09.20</b>
Chair: <b>Leuenberger</b> Christian	
<b>Kittelson</b> David / University of Minnesota, USA <i>Ultrafine Particles: How Should they be Defined and Measured</i>	
<b>Hasset Sipple</b> Beth / US-EPA, <i>US-EPA-Workshop on Ultrafine Particles - Summary and Consideration of Next Steps</i>	
<b>Van Ham</b> Joop / EFCA, The Netherlands and <b>Mohr</b> Claudia / KIT, Germany <i>Policies on Particulate Matter Miss Adequate Tools</i>	
<b>Andersson</b> Jon / Ricardo, England <i>Origins and Development of European Particle Number Legislation</i>	

<b>Poster Award Ceremony</b>	<b>09.20 – 09.40</b>
<b>Bischof</b> Oliver	

**COFFEE BREAK** **09.40 – 10.10**

<b>Session 5B: Health Effects</b>	<b>10.10 – 12.00</b>
Chair: <b>Gehr</b> Peter	
<b>Gieré</b> Reto / University of Pennsylvania USA <i>BIOCOMBUST- Biomass, Energy, Health</i>	
<b>Topinka</b> Jan / Czech Academy of Sciences <i>Genotoxicity of Diesel Emissions in Real World Driving: Effects of Cold Starts, Congestion, DPF</i>	
<b>Bisig</b> Christoph / University of Fribourg, Switzerland <i>Risk Assessment of Exhaust Aerosols from Ethanol Supplemented and Normal Gasoline on Human Lung Cells in Vitro</i>	
<b>Soppa</b> Vanessa / University of Düsseldorf, Germany <i>Controlled Human Exposures to Fine and Ultrafine Particles from Indoor Sources – Changes in Lung Function and Blood Pressure</i>	
<b>Müller</b> Loretta / University Children's Hospital Basel, Switzerland <i>Effect of Gasoline Exhaust Emission on Bronchial Epithelial Cells and Natural Killer Cells</i>	

**Lunch** **12.00 – 13.00**

## FOCUS-Event

### *Cleaner Air for Megacities*

#### Focus Event Part 1

13.00 – 14.30

Chair: **Mayer** Andreas

#### **NN**

*Megacities – Inherent Problems of Growing Urban Structures*

**Parrish** David / University Boulder, Colorado

*Lessons Learned from Los Angeles: 5 Decades of Efforts, but Air still not as clean as needed*

**Muhamad** Susana / SDA Bogotà

*Air Quality Challenges of a Megacity at 2600 m above Sea Level and the Priority to Clean Public Transport Buses*

#### **COFFEE BREAK**

14.30 – 15.00

#### Focus Event Part 2

15.00 – 16.00

**Ma Dong**, Wang Yanjun / VECC-MEP PRC, Beijing

*China Air Quality Status and Emission Reduction from Mobile Sources*

**Hosseini** Vahid / AQCC, Tehran

*Battle against Solid UFP-Emissions from Internal Combustion Engines w/o Waiting for Euro VI*

#### Panel Discussion

16.00 – 16.30

**Concluding Remarks: Boulouchos Konstantinos**

**End of the 19<sup>th</sup> ETH-NPC**

16.45

## POSTERS

### Poster Session 1: Fundamentals

1.	Ess Michaela	Technische Universität München	<i>In situ Raman Microspectroscopy of Soot during Temperature Programmed Oxidation</i>
2.	Goudeli Eirini	ETH ZURICH	<i>The Effect of Sampler Design on Nanoparticles Sizing at High Temperatures</i>
3.	Goudeli Eirini	ETH ZURICH	<i>Coagulation – Agglomeration of Fractal-like Particles</i>
4.	La Rocca Antonino	University of Nottingham	<i>Electron Tomography of Combustion Generated Nanoparticles</i>
5.	Melas Anastasios	Aristotle University of Thessaloniki	<i>Oxidative Fragmentation of Soot Aggregates</i>
6.	Seong Heeje	Argonne National Laboratory	<i>Morphology and Crystalline structures of Engine-like Soot from KATECH's Soot Generator</i>
7.	Talebizadeh Pouyan	Amirkabir University Iran	<i>Investigation of diesel particle deposition in tubes</i>

### Poster Session 2: Combustion Engine Emissions

8.	Czerwinski Jan	AFHB	<i>Non-legislated Emissions of a Passenger Car with Ethanol Blend Fuel E85</i>
9.	Fenkl Michael	University of Liberec	<i>Measurement of Emissions from Independent Bus Heaters</i>
10.	Køcks Morten	Danish Technological Institute	<i>Real-time Characterization of Particle and Gas Emissions from Construction Equipment during Operation</i>
11.	Mühlbauer Wolfgang	LTTT Bayreuth	<i>Influence of in-Cylinder Soot Formation and Oxidation on Engine-out Soot Emissions in Operation with 1st and 2nd Generation Biofuels</i>
12.	Pielecha Jacek	Poznan University	<i>Measurements of Particle Mass, Number and Size Distribution from Light-Duty Vehicles in Conditions of Variable Terrain Topography</i>
13.	Tsakis Apostolos	CPERI/CERTH	<i>Particles Emitted During Braking – A preliminary study</i>

14.	Vojtisek-Lom Michal	Czech Technical University	<i>Real Driving Emissions from a Diesel-Hydraulic Rail Vehicle</i>
15.	Woodburn Joseph	Bosmal	<i>Comparisons of solid particle emissions from a range of vehicles tested over 3 driving cycles</i>

### Poster Session 3: Aftertreatment

16.	Acevedo Helmer	Universidad de Colombia	<i>Particle Number Measurement of Euro III Diesel buses fitted with DPF's in the Public Transport System of Bogotá D.C.</i>
17.	Ehteram Mohammadali	School of Mechanical Eng. Sharif University	<i>A study on nano-solid particle count and gaseous emission of regeneration period for different DPF technologies</i>
18.	Fuć Pawel	Poznan University	<i>Engine Test Bay Comparison of an Experimental Ti<sub>2</sub>O<sub>4</sub>-based Particulate Matter Filter Support with the Commercially Available Supports</i>
19.	Heeb Norbert	EMPA	<i>PCDD/F Formation in active DPFs: the Inconvenient truth about Biofuels</i>
20.	Jang Jinyoung	Korea Institute of Energy Research	<i>Emission Characteristics by DPF Regeneration and Ash Contents in 1.6 L CRDI Diesel Vehicle</i>
21.	Jin Dongyoung	Korea University	<i>Analysis of Aged Diesel Particulate Filter and Ash Components with Physicochemical Validation"</i>
22.	Kato Kyohei	NGK	<i>GPF Concepts with Integrated Catalyst for Low Backpressure and Low CO<sub>2</sub> Emissions under Real Driving Conditions</i>
23.	Lee Chun Beom	Korea Automotive Techn. Institute	<i>Multi-purpose High Temperature Exhaust Gas Simulator</i>
24.	Lehtoranta Kati	VTT	<i>Impact of SCR on particle emissions in HFO application</i>
25.	Luttinger Avigdor	PEMRED	<i>Particle Agglomeration Inducer application in EURO-II Heavy Duty truck retrofitting</i>
26.	Suarez-Bertoa Ricardo	JRC	<i>Ammonia Exhaust Emissions from Euro 5 and Euro 6 light Duty Vehicles</i>
27.	Topp Michael	HUG	<i>Exhaust Gas Purification System for Ground Power Units (GPU)</i>
28.	Zöllner Christian	LTTT Bayreuth	<i>Comparison of Soot Deposition in Diesel Particulate Filter Segments Operating with Diesel Fuel and Biodiesel</i>



**Poster Session 4: Instrumentation**

29.	Beránek Vit	University in Prague	<i>Augmenting high-volume Atmospheric Samplers to Collect Large Amounts of Particulate Matter from Vehicle Exhaust for Toxicity Assays</i>
30.	Besch Marc	West Virginia University	<i>In-line, Real-Time Particulate Matter Sensors for OBD and Exhaust Aftertreatment System Control Applications</i>
31.	Booker David	Sensors	<i>The Development and Characterization of a PEMs PMP-Compliant CPC-based Particle Counter for Real World on-Vehicle Measurements</i>
32.	Byeongju Jeong	Korea University of Technology and Education	<i>The Effect of a Thermal Denuder on the Measurement of Black Carbon Generated in a Diesel Engine</i>
33.	Cachón Luis	TESTO	<i>Second generation of Diffusion Size Classifier for Oncoming Motor Vehicle Regulations</i>
34.	Fierz Martin	Northwestern University Switzerland	<i>Mobile vs. Static Sensor Networks for Urban Air Quality Assessment</i>
35.	Järvinen Anssi	Tampere University	<i>Portable Emission Measurement System (PEMS) for Exhaust Aerosols</i>
36.	Khan Yusuf	Cummins	<i>Characterization of Repeatability and Reproducibility of BSN-Measurements from AVL Particle Counters</i>
37.	Kiwull Bettina	Institute of Hydrochemistry	<i>Evaluation of Volatile Particle Remove Devices for Exhaust Particle Quantification</i>
38.	Kral Karolin	AutoVision	<i>Evaluation of Aerosol Particle Characteristics with different Conditioning Units</i>
39.	Mamakos Athanasios	AVL	<i>Bringing the PMP Methodology on-Board</i>
40.	Minagawa Tomohiro	Tsukasa Sokken	<i>Development of a Next Generation Opacimeter by using the Light Scattering and the Light Absorption Method for Periodic Technical Inspection Use</i>
41.	Mønster Jacob	FORCE EXPLICIT	<i>Validation and Application of a novel Optical Particle Counter</i>
42.	Ruzal-Mendelevich Michal	Ben Gurion University Israel	<i>Controlling Nanoparticles Emission with Particle-Grouping Exhaust-Pipe</i>
43.	Tochino Shigemi	Horiba	<i>Repeatability study of detection efficiency and linearity during CPC calibration using Emery Oil Aerosol</i>

44.	Tonegawa Yoshio	JARI	<i>Development of Tire Dust Emission Measurement for Passenger Vehicle</i>
45.	Tritscher Torsten	TSI	<i>Laboratory and Field Measurements of Solid Particle Number with the Nanoparticle Emission Tester (NPET)</i>

### Poster Session 5: Health Effects

46.	Barosova Hana	University of Fribourg	<i>Biological Impact of Brake Wear Particles – Aerosol Exposures onto the Surface of a 3D Human Epithelial Tissue Barrier</i>
47.	Kutlar Joss Meltem	Swiss Tropical and Public Health Institute,	<i>Ultrafine Particles in the Air – what has been Studied Epidemiologically to date?</i>
48.	Monjezi Mojdeh	Sharif University of Technology, Tehran	<i>Modelling the transport of inhaled nanoparticles from human lung to whole body using compartment method</i>
49.	Rinaldo Mickaël	Université de Bordeaux	<i>Ultrafine particles in human pleura</i>

### Poster Session 6: Ambient Particles

50.	Bharat Lai Sahu	Pt Ravishankar Shukla University	<i>Characterization of Mosquito and Incense Aerosols</i>
51.	Hagino Hiroyuki	JARI	<i>Brake Wear Particles Emissions using a Dynamometer System under Driving Cycles</i>
52.	Hama Sarkawt M.L.	University of Leicester	<i>Monitoring of Ultrafine Particle Number Concentration and other Traffic- related Air Pollutants at one Urban Background in Leicester, over the Course of a Year</i>
53.	Heijari Juha	Neste Oil	<i>Sulphuric acid and aerosol particle production in the vicinity of oil refinery</i>
54.	Hueglin Christoph	EMPA	<i>Trend and Spatial Variability of Ambient Ultrafine Particle Concentration in Switzerland</i>
55.	Keller Alejandro	FHNW	<i>Estimation of the SOA-Formation Potential in Emissions from GDI Engines</i>
56.	Lee Jeonghoon	Korea University of Technology and Education	<i>Black Carbon Concentration at an Inland Area in Korea</i>
57.	Leskinen Ari	Finnish Meteorological Institute & University	<i>Aerosol Measurements in Nanjing, China</i>

58.	Mazaheri Mandana	Queensland University of Technology (QUT), Australia	<i>Environmental Factors Affecting Exposure to Ambient Ultrafine Particles at Urban Schools</i>
59.	Patel Khageshwar Sing	Pt Ravishankar Shukla-University	<i>Segregation of Indoor Aerosol</i>
60.	Stolcpartova Jitka	University of Liberec	<i>Particle Spatial Distribution in Suburban Area Celakovice: The Effect of Commuter Vehicle Traffic.</i>
61.	Zhou Jun	PSI	<i>Ambient Air Measurements of Reactive Oxygen Species (ROS) in Beijing and Bern</i>

### Poster Session 7: Combustion Emissions from Non-Vehicle Sources

62.	Brem Benjamin	EMPA	<i>Sensitivity of Aircraft Gas Turbine non-volatile Particulate Matter Mass and Number Emissions to Fuel Aromatic Content</i>
63.	Hagen Donald	Missouri University	<i>Influence of Ambient Temperature on Gas Turbine Emissions</i>
64.	Hess Adrian	PSI	<i>Particulate Metal Emissions from Wood Incineration measured Online Using RDD-SMPS-ICPMS</i>
65.	Kilic Dogushan	PSI	<i>Characterization of Non-Methane Volatile Organic Compound Emissions from Aircraft Turbine Engines</i>
66.	Kittelson David	University of Minnesota	<i>Ultrafine and Nanoparticle Measurements in Jet Aircraft Exhaust</i>
67.	Markowski Jaroslaw	Poznan University	<i>Particulate Emissions from Jet Engine</i>
68.	Moon Gunfeel	Korean register of shipping	<i>An Experimental Study on Effect of Sulfur Contents in Fuel Oil on Particulate Emission Emitted from Marine Diesel Engine</i>

### Poster Session 8: Legislation

69.	Fuchsig Heinz	WMA Uni Wien	<i>World Medical Association Calls for Action against Diesel Soot</i>
70.	Mendoza Villafuerte Pablo	European Commission	<i>Results of the PM Pre-Pilot Program.</i>
71.	Robertson William	CARB	<i>Current Tailpipe PM Issues: A California Update</i>

## Organization Committee

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## ***Instrument and Filter Exhibition***

### **Company, contact person**

- Baumot AG, Faruk Bajrami
- Catalytic Instruments, Hans-Joachim Schulz
- CPK Automotive GmbH, Anna Rennekamp
- Dekati Ltd., Henna Isherwood
- Dinex GmbH, Denise Schleicher
- Ecomesure, Tiphany Quach
- Hug Engineering AG, Silke Schilp
- INNOSPEC Limited, Uenal Karaagac
- JING AG, Lianpeng Jing
- MAHA AIP GmbH, Alexander Trommer
- MS4-Analysentechnik GmbH, Matthias Samel
- naneos particle solutions, Dominik Meier
- Sensors Europe GmbH, Michael Heuser
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