Symposium Program

Monday, September 22, 2025	
08:45	***Welcome***
09:00	***Plenary*****: Technical Challenges and Modelling Strategies for NOx Reduction over Selective Catalytic Reduction Catalysts** K. Kamasamudram – Cummins Inc., Columbus/Indiana, USA
10:00	**Sites transformation in Cu/SSZ-13 catalyst under mild hydrothermal aging and its impact on oxidation reactions and sulfur poisoning** T. Zheleznyak, P. Kočí – University of Chemistry and Technology, Prague, Czech Republic A. Shoronika, W. Epling – University of Virginia, Charlottesville, USA
10:25	***Coffee break***
10:55	**Unravelling the kinetics of Cu-CHA catalysts in driving conditions: a multi-mechanism SCR concept** R. Uglietti, C. Shuyue, A. Widd, M. Votsmeier – Umicore AG & Co. KG, Hanau, Germany R. Bono, M. Votsmeier – Technische Universität Darmstadt, Reactive Flows and Diagnostics (RSM), Darmstadt, Germany
11:20	**Towards Improved SCR catalyst models: A framework for NH3 adsorption, mass transfer, and redox dynamics.** A.F. Suarez-Corredor, L. Olsson, M. Skoglundh – Chalmers University of Technology, Gothenburg, Sweden A.F. Suarez-Corredor, B. Westerberg – Scania CV AB, Södertälje, Sweden M.U. Bäbbler – KTH Royal Institute of Technology, Stockholm, Sweden
11:45	**Modelling the combined HCHO/SCR reaction on $V_2O_5/WO_3/TiO_2$ catalyst in lean gas engine exhaust** C. Hahn, S. Kureti – Institute of Energy Process Engineering and Chemical Engineering, TU Freiberg, Freiberg, Germany
12:10	***Lunch***
13:10	***Keynote*****: Solving Advanced Combustion Challenges with DETCHEM Tools** A. L. Tonkovich – Toncomo LLC, Gilbert/Arizona, USA
13:35	**Poster Talks** Poster presenters
14:35	***Poster Session with Coffee***
15:35	**Greenhouse gas reduction potential of NH_3 engines with tailored exhaust gas aftertreatment** G. Koltsakis, G. Voniati, A. Dimaratos, L. Ntziachristos – Aristotle University Thessaloniki, Thessaloniki, Greece
16:00	**Simulation and design of emission catalysts for marine applications with green hydrogen, ammonia, methanol and methane and diesel fuels** T. Maunula, J. Nemec, A. Kakoee, M. Mikulski – University of Vaasa, Technology and Innovations, Energy Technology, Vaasa, Finland J. Hyvönen – Wärtsilä Finland Oy, Vaasa, Finland
16:25	**Model-Based Screening of Honeycomb Sorbents for Carbon Capture** M. A. Sokolov, K. Khodosevich – Corning SAS Finland branch, Helsinki, Finland R. Mennitto, T. Boger – Corning GmbH, Wiesbaden, Germany
16:50	***Refreshments***
17:15	***Evening lecture:*** **Climate Research: What can we learn from earth's climate history for the future** R. Loschek – Chronos Management Consulting, Cologne, Germany
18:15	***End of sessions day 1***
19:00	***Conference Dinner / BBQ*** *with social get-together afterwards on-site*

Tuesday, September 23, 2025	
09:00	***Plenary*: The Challenges with Three-way Catalysts in Strong Hybrid Systems for Passenger Cars** J. Kusaka – Waseda University, Tokyo, Japan
10:00	**Computational optimization of TWC performance for pollutant control under transient conditions in an MD-SI engine fuelled with LPG** B. Conde*, V. Bermúdez, S. Ruiz – CMT-Clean Mobility and Thermofluids, Universitat Politècnica de València, Valencia, Spain A. Ibraimova, L Ntziachristos, G. Koltsakis – Laboratory of Applied Thermodynamics, Aristotle University of Thessaloniki, Thessaloniki, Greece
10:25	***Coffee Break***
11:00	***Keynote*: Efficient model generation using neural networks with embedded Physics/Chemistry prior knowledge** M. Votsmeier – Umicore AG & Co. KG, Hanau, Germany
11:25	**Neural Network-Based Surrogate Modelling of Diesel Oxidation Catalyst** P. Ferreri, F. Aglietti, F. Sapio – Dumarey Automotive Italia S.p.A. G. Melchionna – Politecnico di Torino, Torino, Italia
11:50	**Leveraging Optimization Algorithms and Surrogate Modeling to Understand Methane Oxidation Kinetics** R. Chacko, K. Keller, P. Lott – Institute of Chemical Technology and Polymer Chemistry, KIT, Karlsruhe, Germany M. Götz – Scientific Computing Center, KIT, Karlsruhe, Germany and Helmholtz AI S. Angeli – Institute of Catalysis Research and Technology, Karlsruhe Institute of Technology, Karlsruhe, Germany
12:15	***Lunch***
13:30	***Plenary:* A multiscale and multi-technique approach to Selective Catalytic Reduction (SCR) of NO_x** M. Maestri – Politecnico di Milano, Milano, Italy
14:30	**Spatially and temporally resolved analysis of UWS decomposition inside an SCR catalyst** L. Nordhausen, M. Börnhorst – Institute of Reaction Engineering and Catalysis, TU Dortmund University, Germany L. Schuhmann, M. Bonarens, G.Goet, S. Wagner – Technical University of Darmstadt, Reactive Flows and Diagnostics, Germany
14:55	**Experimental and Numerical Investigation of UWS Film Formation in a Generic SCR Channel** R. Lange, C. Hasse – Technical University of Darmstadt, Simulation of Reactive Thermo-Fluid Systems, Germany M. Bonarens, L. Schuhmann, S. Wagner – Technical University of Darmstadt, Reactive Flows and Diagnostics, Germany
15:20	***Coffee Break***
15:50	**Emission simulation: a fast tool for designing hydrogen engine aftertreatment systems** M. Werner, H. Többen – Purem GmbH, Esslingen, Germany
16:15	**An Analytic Model for Wall-Flow Particulate Filters Valid for Symmetric and Asymmetric Filters and Accounting for Compressible Flow** T. C. Watling – Johnson Matthey, Sonning Common, Reading, UK I.D. Rees – Johnson Matthey, Royston, UK
16:40	**Pore-scale simulation study of diffusion-limited conversion of gas pollutants in soot-loaded catalytic filters** O. Studeník, M. Plachá, R. Knopp, M. Isoz, P Kočí – University of Chemistry and Technology, Prague, Czechia O. Studeník, M. Isoz – Czech Academy of Sciences, Prague, Czechia
17:05	***End of sessions day 2; coffee and farewell***