

THURSDAY 10TH SEPTEMBER 2026

S2.1 PRECHAMBERS for SUSTAINABLE FUELS		Chairperson: André Casal-Kulzer Stuttgart Universität, Germany
8:30-9:00	KEYNOTE LECTURE: Hypercar powertrains: past, present and future Dáire Corrigan. Bugatti-Rimac, Italy	
9:00-9:25	Comparative Optical Analysis of Ammonia-Hydrogen and Methanol Combustion in SI and Passive Prechamber Engines P. Sementa, N. Altieri, B.M. Vaglieco CNR STEMS, Italy	
9:25-9:50	Extending Partial-Load Operation of an Ammonia-Fuelled Spark Ignition Engine via Passive Pre-Chamber Ignition: A Numerical and Experimental Study A. Nodi ¹ , L. Sforza ¹ , A. Onorati ¹ , A. Voris ² , W. F. Northrop ² ¹ Politecnico di Milano, Italy ² University of Minnesota, USA	
9:50-10:15	Non-Monotonic Combustion Dynamics of Methane-Hydrogen Blends in a Low-Speed Pre-Chamber Spark-Ignition Engine MD. T. Khan ¹ , N. Kawahara ² , Y. Kobashi ² , T. Hirayama ³ , A. Shimizu ³ , S. Miyamoto ³ ¹ Division of Mechanical and Systems Engineering, Okayama University, Japan ² Faculty of ELN Science and Technology, Okayama University, Japan ³ Kawasaki Heavy Industries, Japan	
10:15-10:45	Coffee break	
S2.2 H ₂ INTERNAL COMBUSTION ENGINES		Chairperson: Steve Whelan HORIBA-MIRA, UK
10:45-11:10	Towards Predictive CFD for Hydrogen Engines: A Holistic Validation from Flow Field to Combustion and Heat Transfer A. Avdić ¹ , J. Ziegler ¹ , M. Blessing ¹ , M.E. Kinaci ² , M. D'Elia ² , S. Nambully ² ¹ Daimler Truck AG, Germany ² Convergent Science GmbH, Austria	
11:10-11:35	Experimental Investigation of Hot Spot Induced Ignition in Medium Pressure Hydrogen Jets under DI-H₂ICE Relevant Conditions A. Tinchon ^{1,2} , G. Dober ³ , C. Hespel ² , F. Foucher ² ¹ PHINIA, France ² Université d'Orléans, France ³ PHINIA Luxembourg	
11:35-12:00	Investigation of Operating Strategies for a Hydrogen-Fueled Internal Combustion Engine Using Both SI and CI Combustion Modes under Lean Mixture Conditions Toward Low- and High-Load Extension Kiyeon Kim ¹ , Jeongho Kim ² , Jongyoon Son ¹ , Seungil Lee ² , Seungjae Kim ^{2,3} , Seunghyun Lee ² , Chalee Myung ² , Tran Dang Quoc ⁴ , Kyoungdoug Min ² , Jeongwoo Lee ¹ ¹ Chungnam National University, Republic of Korea ² Seoul National University, Republic of Korea ³ Republic of Korea Naval Academy, Republic of Korea ⁴ Hanoi University of Science and Technology, Vietnam	
12:00-12:25	Turbocharging Feasibility and Performance Analysis in a Closed-Loop Hydrogen-Argon Power Cycle J. Archier ¹ , S. Ahammed ² , A. Andwari ¹ , M. Mikulski ² , D. Contreras-Jiménez ³ , J.R. Serrano ³ , B. Smulter ⁴ , J. Hyvönen ⁴ ¹ University of Oulu, Finland ² University of Vaasa, Finland ³ Universitat Politècnica de València, Spain ⁴ Wärtsilä Finland Oy, Finland	
12:25-12:50	Investigation of Transient and Emission Aftertreatment Performance of a Hydrogen Internal Combustion Engine when using a Lambda Leap Strategy E.J. Fong Cisneros, R. Kodaboina, G. Vorraro, J.W.G. Turner King Abdullah University of Science & Technology, Saudi Arabia	
12:50-14:30	Lunch	

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14:30-15:30	Poster session 2 / Commercial exhibition / Visit 2 to CMT's laboratories	
S2.3	PRECHAMBER TECHNOLOGIES	Chairperson: Dimitrios Karageorgiou Aramco Fuel Research Center, France
15:30-16:00	KEYNOTE LECTURE: Next-Generation Efficiency: Leveraging Active Pre-Chamber Combustion in Multi-Fuel Engine Systems Francesco Pesce. Dumarey Automotive, Italy	
16:00-16:25	Comparative Assessment of Passive and Active Pre-Chamber Combustion Systems for High-Efficiency Gas Engines F. Accurso ¹ , V. Gorietti ¹ , F.C. Pesce ¹ , L. Marchitto ² , C. Tornatore ² , A. Mariani ² , V. Pennino ² , A. Giardino ³ ¹ Dumarey Automotive Italia, Italy ² CNR-STEMS, Italy ³ Isotta Fraschini Motori, Italy	
16:25-16:50	Performance and Efficiency Comparison of Passive and Active Pre-Chamber Ignition Systems in Spark-Ignition Engines M. Korkmaz ¹ , A. Assabiki ¹ , S. Juressen ² , S. Pino ¹ ¹ Champion Ignition, Germany ² Federal-Mogul Burscheid, Germany	
16:50-17:15	Effect of Pressure and Equivalence Ratio on Jet Characteristics of an Active Hydrogen-Fueled Pre-Chamber J.F.P.W. Maas, L.M.T. Somers, N.C.J. Maes Eindhoven University of Technology, The Netherlands	
17:15-17:45	Coffee break	
S2.4	COMPRESSION IGNITION COMBUSTION ENGINES	Chairperson: Manuel Lage Business Dev.Advisor, Spain
17:45-18:10	NO₂/NO_x Ratio and Unburned Hydrocarbon Emissions in a H₂-Diesel and NH₃-Diesel Dual-Fuel Engine H. Guo, A. Bebar, D. Stevenson, K. Austin National Research Council Canada, Canada	
18:10-18:35	Fuel Property Effects on Diesel Combustion and Exhaust Emissions: Paraffinic Fuel Case B. Shin, N. Uchida New ACE Institute, Japan	
18:35-19:00	Methanol Mixing-Controlled Compression Ignition Enabled Via Homogeneous Charge Compression Ignition of Dimethyl Ether Through Catalytic Decomposition of Methanol D.A. Splitter ¹ , G. Jatana ¹ , J. P. Szybist ¹ , Y. Park ¹ , D. Tyrewala ¹ , K. I. Svensson ² , D.T. Montgomery ² ¹ Oak Ridge National Laboratory, USA ² Caterpillar Inc., USA	
19:00-19:25	Impact of a Nitrate-Based Additive on Ammonia Compression Ignition Engine Ignited by HVO Pilot Injection R. Samson ¹ , F. Foucher ² , C. Mounaïm-Rousselle ^{2,3} ¹ EURENCO, France ² Université d'Orléans, France ³ Institut Universitaire de France, France	

