SAE NAPLES
An SAE International Section

ICE2023

16th International Conference on Engines & Vehicles for Sustainable Transport

Final Program

September 10th - 14th, 2023 @ Capri, Naples

Monday, 11th September

9:00	***Registration*** ***Opening Ceremony*** ***Ezio Mancaruso*** *SAENA President* ***Giorgio Rizzoni*** & ***Bianca Maria Vaglieco*** *Conference Chairs*	
9:10	**David Schutt** *CEO of SAE Enterprise (USA)*	
9:20	**European Collaborative Research on Road Transport and the Challenges of Resources** **Christof Schernus** Vice-President FEV Europe GmbH **Chairperson: Ezio Mancaruso**	
10:00	**Coffee break**	
	Room Teatro	***Room Donna Lucia***
	ICE101 - 0-D and 1-D Modeling and Numerics **Chairperson: Angelo Onorati**	**ICE504 - Alternative Engine Architectures High Efficiency Concepts** **Chairpersons: Carlo Beatrice & Silvia Marelli**
10:30	A fully predictive 1-D modelling framework for reactivity-controlled compression ignition engine via chemistry based multi-zone model **2023-24-0001** **Alireza Kakoee, Aneesh Vasudev, Maciej Mikulski,** University of Vaasa**; Ben Smulter, Jari Hyvonen,** Wartsila Finland Oy	Analysis of a Modern Twin-Spool Supercharged Gas Turbine Engine Concept for Hybrid Vehicle Applications **2023-24-0127** **Badamasi Babaji, Kesty Yong Kenkoh, James W.G. Turner,** King Abdullah University of Science & Technology
10:50	A Quasi-Dimensional Two-System Burn Rate Model for Pre-Chamber-Initiated SACI Combustion **2023-24-0002** **Francesco Salerno, Andre Kulzer, Michael Bargende,** IFS, University of Stuttgart**; Michael Grill,** FKFS**; Patrick Burkardt, Marco Günther, Stefan Pischinger,** TME, RWTH Aachen University	Free piston engines: numerical comparison of boxer and opposed configuration in 0D/1D environment **Oral Only 23ICE-0444** **Armando Maiello, Carlo Beatrice, Raffaele Saviano, Pierpaolo Napolitano,** STEMS- CNR**; Raffaele Capuano,** Iveco Group – FPT Motorenforschung AG
11:10	Air Path Design, Technical Definition and Pre-Calibration of an Ultra-Lean Hydrogen Engine Based on 0D/1D Simulation **2023-24-0004** **Rémi Dubouil, Nicolas Perrot, Guillaume Goumy, Pascal Chesse,** Nantes Université, École Centrale Nantes	3D-CFD Modelling of Gas Exchange and Combustion Inside the Expander of a Recuperated Split-Cycle Engine **2023-24-0130** **Lorenzo Sforza, Tommaso Lucchini,** Politecnico di Milano**; Alessandra Vaghini,** FPT Motorenforschung AG**; Colin Bennett, Nick Owen,** Dolphin N2 Ltd
11:30	Development and Evaluation of the Predictive Capabilities of a Dual-Fuel Combustion Model with Methanol or Hydrogen in a Medium Speed Large Bore Engine **2023-24-0008** **Jeroen Dierickx, Sebastian Verhelst,** Ghent University**; Luc Mattheeuws, Koen Christianen,** Anglo Belgian Corporation**; Karsten Stenzel,** WTZ Rosslau	Exploring the Potential of Hydrogen Opposed Piston Engines for Single-Cylinder Electric Generators: A Computational Study **2023-24-0128** **Antonello Volza, Francesco Scrignoli, Stefano Caprioli, Enrico Mattarelli, Carlo Alberto Rinaldini,** Università di Modena e Reggio Emilia
11:50	Simulation of CNG Engine in Agriculture Vehicles. Part 1: Prediction of Cold Start Engine-Out Emissions Using Tabulated Chemistry and Stochastic Reactor Model **2023-24-0006** **Reddy Babu Siddareddy, Michal Pasternak,** LOGE Polska Sp. z o.o.**; Tim Franken,** BTU Cottbus-Senftenberg**; Larisa Leon de Syniawa,** LOGE AB**; Sascha Prehn, Bert Buchholz,** University of Rostock**; Fabian Mauss,** BTU Cottbus-Senftenberg	Simulative Estimation of a Super-High-Efficiency Stoichiometric Gasoline Engine with GT-Power **2023-24-0129** **Tobias Stoll, Hans-Juergen Berner,** FKFS**; Andre Casal Kulzer,** IFS, University of Stuttgart
12:10	A Joint Work to Develop a Predictive 1D Modelling Approach for Heavy Duty Gaseous Fueled Engines through Experiments and 3D CFD Simulations **2023-24-0007** **Valentina Fraioli, Dario Di Maio, Pierpaolo Napolitano,** STEMS-CNR; **Davide Lanni, Gabriele D'Antuono, Enzo Galloni,** DICEM - University of Cassino; **Cyrille Callu, Dario Maestro,** TotalEnergies OneTech	Super-critical Direct Water Injection as Energy Recovery Application on a Natural Gas ICE **Oral Only 23ICE-0504** **Roberto Ianniello, Michele Pipicelli, Giuseppe Di Luca, Carlo Beatrice, Gabriele Di Blasio,** STEMS-CNR

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	Room Capri	*Room Rotonda*
	ICE204 - Combustion in Hydrogen Fueled Engines **Chairpersons: Fabrice Foucher & Gilles Bruneaux**	**ICE 602 - Controls for Hybrids and Electric Powertrains** **Chairperson: Nicolò Cavina & Alessandro Brusa**
10:30	Experimental Combustion Analysis in a Gasoline Baseline Hydrogen-Fueled Internal Combustion Engine at Ultra-Lean Conditions **2023-24-0073** **Caio Ramalho Leite, Mathieu Laignel, Pierre Brequigny, Fabrice Foucher,** Université d'Orléans**; Jacques Borée,** ISAE-ENSMA (Poitiers)	Predictive Activation Strategy for Health-Conscious Energy Management of Multi-Module Fuel Cell Systems in Heavy-Duty Long-Haul Electric Trucks **2023-24-0138** **Alessandro Ferrara, Christoph Hametner,** TU Wien
10:50	Experimental investigation on the optimal injection and combustion phasing for a direct injection hydrogen-fueled internal combustion engine for heavy-duty applications **Oral Only 23ICE-0471** **Federico Millo, Francesco Pucillo, Andrea Piano,** Politecnico di Torino	Fuel Consumption Potential Gains of Rankine Thermal Power Recovery for Series Hybrid Electric Vehicles **2023-24-0139** **Willy Cottin, Sébastien Houillé, Wissam Bou Nader** Stellantis**; Guillaume Colin, Mickaël Moreira, Alain Charlet,** Université d'Orléans
11:10	Variable Compression Ratio Hydrogen-Fueled Homogeneous Charge Compression Ignition Engine **2023-24-0067** **Ducduy Nguyen, Renston Fernandes, James W.G. Turner,** King Abdullah University of Science & Technology	Improving Computational Efficiency for Energy Management Systems in Plug-in Hybrid Electric Vehicles Using Dynamic Programming based Controllers **2023-24-0140** **Matteo Spano, Pier Giuseppe Anselma, Daniela Misul, Nicola Amati,** Politecnico di Torino**; Giorgio Rizzoni,** The Ohio State University
11:30	Hydrogen ICE Combustion Challenges **2023-24-0077** **Ernst Winklhofer, Bernhard Jocham, Harald Philipp, Paul Kapus, Daniel Leitner, Rene Heindl, Nilton Diniz-Netto**, AVL LIST GmbH	Control Algorithms for xEV Powertrain Efficiency and Thermal Comfort **2023-24-0142** **Nikolaos Aletras, Dimitrios Besinas, Georgios Livitsanos, Grigorios Koltsakis, Zissis Samaras, Leonidas Ntziachristos,** Aristotle University of Thessaloniki
11:50	Impact of Hydrogen on the Ignition and Combustion Behavior Diesel Sprays in a Dual Fuel, Diesel-Piloted, Premixed Hydrogen Engine **2023-24-0061** **Rajavasanth Rajasegar, Ales Srna, Taesong Lee,** Sandia National Laboratories	Development of an Energy Management System to Maximize Fuel Cell Operating Life **Oral Only 23ICE-0502** **Luciano Rolando, Luca Pulvirenti, Afanasie Vinogradov, Benedetta Peiretti Paradisi, Andrea Piano, Federico Millo,** Politecnico di Torino
12:10	Impact of Splitting n-Dodecane Pilot Injection on Ammonia RCCI Engine **2023-24-0076** **Christine Mounaim Rousselle, Pierre Brequigny, Anthony Dupuy,** Université d'Orléans	Development of a Deep Q-Learning Energy Management System for a Plug-in Hybrid Electric Vehicle **Oral Only 23ICE-0504** **Luigi Tresca, Luca Pulvirenti, Luciano Rolando, Federico Millo,** Politecnico di Torino
12:30	**ICE103 - Combustion and Flow Diagnostics** **Chairpersons: Noud Mess & Ezio Mancaruso** Methanol Evaporation in an Engine Intake Runner under Various Conditions **2023-24-0018** **Yi-Hao Pu, Tara Larsson, Tom Robeyn, Michel De Paepe, Sebastian Verhelst,** Ghent University	Development and experimental validation of a deep neural network model for the prediction of the energy recovery performance of a heavy-duty hybrid electric vehicle **Oral Only 23ICE-0565** **Andrea Altomonte, Giovanni Di Ilio, Elio Jannelli,** University of Naples Parthenope

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	Room Teatro	*Room Donna Lucia*
	ICE101 - 0-D and 1-D Modeling and Numerics **Chairperson: Angelo Onorati**	**ICE503 - Thermal Systems Modeling and Simulation** **Chairpersons: Luigi Sequino & Sam Akehurst**
12:30	Application of a One-Dimensional Dilution and Evaporation Lubricant Oil Model to Predict Oil Evaporation under Different Engine Operative Conditions Considering a Large Hydrogen-Fuelled Engine **2023-24-0009** **Edoardo De Renzis, Valerio Mariani, Gian Marco Bianchi, Stefania Falfari, Giulio Cazzoli,** University of Bologna	Influence of Characterising Materials Thicknesses on the Thermal Response of Cylindrical Battery Cells **2023-24-0124** **Alberto Broatch, Pablo Olmeda, Xandra Margot, Kundan Kumar,** CMT- Universitat Politècnica de València
12:50	Experimental and numerical analysis of waste-gated turbine for turbocharging system **Oral Only 23ICE-0540** **Carla Cordalonga, Silvia Marelli, Vittorio Usai,** Università di Genova	Distribution of Cooling Structures in Water Cooled Electrical Machines using Localized Loss Profiles **2023-24-0126** **Christoph Ellenrieder, Benedikt Reick, André Kaufmann,** Ravensburg-Weingarten University**; Marcus Geimer,** Karlsruhe Institute of Technology
13:10		Evaluation of TPMS Structures for the Design of High Performance Heat Exchangers **2023-24-0125** **Federico Torri, Fabio Berni, Stefano Fontanesi, Sara Mantovani, Mauro Giacalone, Silvio Defanti, Elena Bassoli, Giulia Colombini,** Università di Modena e Reggio Emilia
13:30	**Lunch break**	

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	Room Capri	*Room Rotonda*
	ICE103 - Combustion and Flow Diagnostics **Chairpersons: Noud Maes & Ezio Mancaruso**	**ICE403 - PM Non-Exhaust emissions** **Chairperson: Zissis Samaras**
12:50	High-Speed 2-D Raman and Rayleigh Imaging of a Hydrogen Jet Issued from a Hollow-Cone Piezo Injector **2023-24-0019** **Bin Wu, Priybrat Sharma, Hao Wu, Moez Ben Houidi, Niraj Panthi, William Roberts, Gaetano Magnotti,** King Abdullah University of Science & Technology**; Tao Yu,** McGill University**; Lucia Palombi,** Sapienza Università di Roma	Experimental investigation of brake wear particle emissions: effects of braking intensity and temperature **Oral Only 23ICE-0508** **Francesco Catapano, Silvana Di Iorio, Agnese Magno, Paolo Sementa,** STEMS-CNR
13:10	Effects of Engine Speed on Prechamber-Assisted Combustion **2023-24-0020** **Lucia Palombi,** Sapienza Universita' di Roma**; Priybrat Sharma, Gaetano Magnotti,** King Abdullah University of Science & Technology**; Emre Cenker,** Saudi Aramco	Brake Wear Testing: Round the Corner Solution for a New Challenge **Oral Only 23ICE-0558** **Giulio Marmorato,** AVL Italia SRL
13:30	**Lunch Break**	

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	Room Teatro	*Room Donna Lucia*
	ICE605 - Battery and Energy Storage Systems for Electric Mobility **Chairpersons: Matilde D'Arpino & Francesco Porpora**	**ICE203 – Homogenous Charge Partially, Premixed Compression Ignition & Dual-Fueled Engines** **Chairpersons: Fadila Maroteaux**
14:30	Thermal Runaway Characterization in an Optically Accessible Vessel: Effect of Battery Cell Chemistry and State of Charge **2023-24-0165** **Lucas Richardet, Michele Bardi, Matthieu Lecompte, Vincent Brocchetto,** IFPEN-Institut Carnot**; Stéphanie de Persis,** ICARE-CNRS, Université d'Orléans	CFD Analysis of Different Biogas Upgrading Levels for Dual-Fuel Operation in Diesel Engines **2023-24-0055** **Túlio Augusto Zucareli de Souza, Gustavo V. Frez, Gabriel Pinto, Roberto Costa, Luis Filipe A. Roque, Christian J. R. Coronado, Luís Pedro V. Vidigal,** Federal University of Itajuba
14:50	Experimental Characterization of the Variability of the Thermal Runaway Phenomenon of a Li-ion Battery **2023-24-0160** **Matthieu Lecompte, Michele Bardi, Stephane Chevillard, Sara Abada,** IFP Energies Nouvelles-Institut Carnot**; Lucas Richardet, Houssam Khaled, Adentis; Stéphanie de Persis,** ICARE-CNRS, Université d'Orleans	Experimental Investigation on the Combustion of Biogas Containing Hydrogen in a HCCI Engine **2023-24-0056** **Antonio Mariani, Andrea Unich, Mario Minale,** Università Campania Vanvitelli Napoli**; Pierre Brequigny, Jean-Baptiste Masurier, Fabrice Foucher,** University Orléans
15:10	Thermal Model for the analysis of the Thermal Runaway in Lithium-Ion Batteries using Accelerating Rate Calorimetry **2023-24-0162** **Jaime Martin, Javier Monsalve-Serrano, Carlos Micó, Imad Elkourchi, Antonio Garcia,** Universitat Politecnica de Valencia	Numerical Investigation of Ammonia-Diesel Fuelled Engine Operated in RCCI Mode **2023-24-0057** **Amir Hossein Fakhari, Ayat Gharehghani,** Iran University of Science and Technology**; Mohammad Mahdi Salahi, Amin Mahmoudzadeh Andwari, Juho Könnö,** University of Oulu**; Maciej Mikulski,** University of Vaasa**; Jacek Hunicz,** Lublin University of Technology
15:30	Comparison of Li-ion battery cell thermal runaway in different optically accessible facilities **Oral Only 23ICE-0474** **Michele Bardi, Matthieu Lecompte, Vincent Brocchetto,** IFPEN-Institut Carnot**; Antonio Garcia, Jose V. Pastor, Javier Monsalve-Serrano, Carlos Guaraco-Figueira,** Universitat Politecnica de Valencia**; Lucas Richardet,** IFPEN-Carnot**; Stephanie de Persis,** ICARE-CNRS	Theoretical Analysis of Multi-Zone and Transported Probability Density Function Approaches Applied to Low Temperature Combustion Process **2023-24-0060** **Fadila Maroteaux, Pierre-Lin Pommier,** Université de Versailles St. Quentin En Yveline**; Ezio Mancaruso, Bianca Maria Vaglieco,** STEMS-CNR
15:50	**Coffee break**	

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	Room Capri	*Room Rotonda*
	ICE402 - Emissions Measurement and Testing **Chairpersons: Zissis Samaras & Silvana Di Iorio**	**ICE302 - Alternative and Advanced Fuels** **Chairpersons: Stefania Esposito & Vincenzo Mulone**
14:30	The Potential of On-Board Data Monitoring for the Characterization of Real-World Vehicle Fuel and Energy Consumption and Emissions **2023-24-0113** **Athanasios Dimaratos, Dimitrios Kontses, Stylianos Doulgeris, Nikiforos Zacharof, Arsenios Keramidas, Georgios Stamos, Alexandros Papageorgiou-Koutoulas, Zissis Samaras,** Aristotle University of Thessaloniki	Renewable Alternatives for Fossil Fuels in Non-Road Mobile Machinery: A Multicriteria Analysis **2023-24-0086** **Quinten Dejaegere, Sebastian Verhelst,** Ghent University
14:50	Prediction of Real-world Emissions from Direct Injection Gasoline Vehicle Using On-road Driving Emission Measurement Data **Oral Only 23ICE-0425** **Susumu Sato, Chanpaya Eang, Jiaxin Chen,** Tokyo Institute of Technology; **Kotaro Tanaka,** Ibaraki University**; Takeshi Tange**, Niterra Co Ltd	ϕ-Sensitivity Evaluation of n-Butanol and Iso-Butanol Blends with Surrogate Gasoline **2023-24-0089** **Nika Alemahdi, Martin Tuner,** Lund University**; Antonio Garcia,** Universitat Politecnica de Valencia
15:10	Comparing Real Driving Emissions from Euro 6d Vehicles Running on E0 and E10 Gasoline Blends **Oral Only 23ICE-0563** **James Edward Hobday,** Emissions Analytics	Investigation of the effects of pure methanol fueling on performance, efficiency, and emissions in a small SI engine **Oral Only 23ICE-0290** **Emmanuele Frasci, Ivan Arsie, Elio Jannelli,** Università di Napoli Parthenope**; Paolo Sementa,** STEMS-CNR
15:30	Carbon footprint calculators for personal travel: a survey **Oral Only 23ICE-0317** **Paolo Delle Site, Laura Tribioli,** University of Rome Niccolo' Cusano	Impact of Ethanol Additions on Gasoline Autoignition: High- to Low-Temperature Regimes and Elevated Pressures **Oral Only 23ICE-0391** **Khalid Aljohani,** KAUST
15:50	**Coffee break**	

	Monday, 11th September	
	Room Teatro	*Room Donna Lucia*
	ICE601 - Advanced Hybrid and Electric Vehicle Powertrains **Chairpersons: Laura Tribioli**	**ICE603 - Hydrogen and Fuel Cell Vehicle Applications** **Chairpersons: Manfredi Villani**
16:20	Modeling and Experimental Validation of a Hybrid Electric Propulsion System for Naval Applications **2023-24-0131** **Renato Marialto, Paolo Sementa,** STEMS-CNR**; Gianluca Brando, Adolfo Dannier, Massimo Cardone, Enrico Fornaro,** Università degli Studi di Napoli	The role of hydrogen for the future of mobility: challenges and opportunities **Oral Only 23ICE-0566** **Andrea Rinaldi,** AVL Italia
16:40	Energy and Pollutants analysis of a Series HEV Equipped with a Hydrogen-Fueled SI Engine **2023-24-0132** **Emmanuele Frasci, Gianluca Nacci, Ivan Arsie, Elio Jannelli,** Università di Napoli Parthenope**; Davide Cervone,** Università degli Studi di Salerno**; Paolo Sementa, Bianca Maria Vaglieco,** STEMS-CNR	Comparative Assessment of Zero CO2 Powertrain for Light Commercial Vehicles **2023-24-0150** **Michele Pipicelli, Gabriele Di Blasio,** STEMS-CNR**; David Sedarsky, Lucien Koopmans,** Chalmers University of Technology**; Alfredo Gimelli,** Università di Napoli Federico II
17:00	Analytical and Experimental Handling Performance of Ultra-Efficient Lightweight Vehicles **2023-24-0135** **Emanuele Musso, Giorgio Previati, Gianpiero Mastinu,** Politecnico di Milano	Fuel Cell Hybrid Electric Vehicle Control: Driving Pattern Recognition Techniques to Improve Vehicle Energy Efficiency **2023-24-0147** **Lorenzo Bartolucci, Edoardo Cennamo, Stefano Cordiner, Marco Donnini, Federico Grattarola, Vincenzo Mulone, Ferdinando Pasqualini,** University of Rome Tor Vergata
17:20	A New Generation of Hydrogen Fueled Hybrid Propulsion Systems for the Urban Mobility of the Future **Oral Only 23ICE-0487** **Federico Millo, Benedetta Peiretti Paradisi,** Politecnico di Torino**; Ivan Arsie,** Università di Napoli Parthenope**; Michele Battistoni,** Università degli Studi di Perugia**; Roberto Cipollone,** Università degli Studi dell'Aquila**; Enrico Corti,** University of Bologna	Simulation-based Assessment of Fuel Economy Performance in Heavy-Duty Fuel Cell Vehicles **2023-24-0146** **Marco Sorrentino, Giuseppe Bevilacqua, Giovanni Bove, Cesare Pianese,** Università di Salerno
17:40	Simulation of Customer Usage: RENAULT's Approach for Electric Powertrains **2023-24-0134** **Bruno Bernard, Frederic Atlan, Damien Maroteaux,** RENAULT SAS	Modelling of a Hybrid Quadricycle (L6e vehicle) Equipped with Hydrogen Fueled ICE Range Extender and Performance Analysis on Stochastic Drive Cycles Generated from RDE Profile **2023-24-0149** **Davide Cervone, Massimo Sicilia, Marco Romano, Pierpaolo Polverino, Cesare Pianese,** Università degli Studi di Salerno**; Emmanuele Frasci, Ivan Arsie,** Università di Napoli Parthenope**; Paolo Sementa,** STEMS-CNR
18:10	**SAE-NA Naples Section Meeting**	
20:00	**Informal dinner**	

	Monday, 11th September	
	Room Capri	***Room Rotonda***
	ICE608 - Physical, virtual and mixed test methods for efficient powertrain concepts **Chairpersons: Danilo Engelmann & Benedikt Reick**	**ICE302 - Alternative and Advanced Fuels** **Chairpersons: Stefania Esposito & Vincenzo Mulone**
16:20	Decoupling Effects in Wet-Running Multi Plate Clutches – Extended and Efficient Use in Hybrid Drive Trains **2023-24-0179** **Arne Bischofberger, Katharina Bause, Sascha Ott, Albert Albers,** Karlsruhe Institute of Technology	Statistical Treatise on Critical Biodiesel (B100) Quality Properties in the United States from 2004-2022 **2023-24-0097** **Robert McCormick,** National Renewable Energy Laboratory**; Teresa Alleman,** Holly Energy Partners**; Richard Nelson,** Enersol Resources
16:40	Hardware-in-the-Loop Testing for Optimizing Inverter Performance in Electric Vehicles **2023-24-0178** **Gergely Kiss, Francesco Duchi, Tim Steinhaus,** AVL LIST GmbH	Investigation of Fuel Metals Impact on Tier 4B Off-Road Engine Exhaust Aftertreatment Systems **Oral Only 23ICE-0340** **Marco Federico Pidria, Chris Walters,** IVECO Group**; Riley Abel, Jonathan Burton, Petr Sindler, Matthew Thornton, Robert McCormick,** National Renewable Energy Laboratory
17:00	Battery Electric Vehicle-in-the-Loop Power and Efficiency Measurement Test Method **2023-24-0182** **Philip Rautenberg, Michael Frey, Frank Gauterin,** Karlsruhe Institute of Technology**; Benedikt Reick,** Ravensburg-Weingarten University of Applied Sciences**; Danilo Engelmann,** Bern University of Applied Sciences TI	New Low Metals Grade in the ASTM D6751 B100 Fuel Quality Standard and Future Plans for Biodiesel Quality Standards for 2030 and Beyond **Oral Only 23ICE-0395** **Steve Howell,** MARC-IV Consulting
17:20	Electric Vehicle Supply Equipment - Testing of Smart Grid Functionality **Oral Only 23ICE-0402** **Bernd Wille-Hausmann,** Fraunhofer Institute for Solar Energy Systems**; Regina Roos,** Typhoon Hil Gmbh	Impact of conventional and alternative diesel fuels on gasoline contamination and their characterization using unwashed gums **Oral Only 23ICE-0371** **Lucia Giarracca, Mickaël Matrat,** IFP Energies Nouvelles**; Hidenori Moriya, Takashi Nomura,** Toyota Motor Corp
17:40	A Methodology to Support the Hybridization of Non-Road Mobile Machinery **Oral Only 23ICE-0501** **Afanasie Vinogradov, Luciano Rolando, Federico Millo,** Politecnico di Torino**; Nicola Scinicariello, Paolo Fregni, Simone Gaioli,** Kohler Engines	
18:10	**SAE-NA Naples Section meeting**	
20:00	**Informal dinner**	

Tuesday, 12th September

08:30	***Registration***	
9:00	**How Important a diversified Powertrain Mix is to fulfill the Global Mobility Demand** **Marc Sens** Senior Vice President IAV GmbH **Chairperson: Giorgio Rizzoni**	
9:40	**Coffee break**	
	Room Teatro	***Room Donna Lucia***
	ICE102 - Multi-Dimensional Engine Modeling **Chairpersons: Stefano Fontanesi & Xandra Margot**	**ICENA301 - Fuel Injection and Sprays** **Chairpersons: Alessandro Montanaro & Michele Battistoni**
10:10	Predictive 3D-CFD Model for the Analysis of the Development of Soot Deposition Layer on Sensor Surfaces **2023-24-0012** **Fabrizio D'Orrico, Giuseppe Cicalese**, R & D CFD Srl**; Sebastiano Breda, Stefano Fontanesi,** Università di Modena e Reggio Emilia**; Ivan Cozza, Sergio Tosi,** Punch Torino SpA	Influence of the Injection Timing on the Mixture Formation Process in a Spark-Ignition Hydrogen Fuelled ICE **2023-24-0079** **Giuseppe Anaclerio, Marco Torresi, Sergio Camporeale,** Politecnico di Bari; **Tommaso Capurso,** ENSAM Paris
10:50	Application of a Machine Learning Approach for Selective Catalyst Reduction Catalyst 3D-CFD Modeling: Numerical Method Development and Experimental Validation **2023-24-0014** **Ivan Flaminio Cozza, Maria Pia Centini, Francesco Sapio,** Punch Torino SpA**; Venkatesh Gopalakrishnan,** General Motors**; Giacomo Buitoni, Marco Tabarrini,** STSE srl	Hydrogen Spray Simulation with a Hollow-Cone Injector **Oral Only 23ICE-0536** **Abdullah Zaihi**, King Abdullah Univ. of Science & Technology
11:10	Thermodynamic and Tribological Analysis of an Innovative Mechanism for Reciprocating Machines **2023-24-0016** **Vasileios Georgitzikis,** LESS Engineering**; Sebastiano Breda, Stefano Fontanesi,** Università di Modena e Reggio Emilia**; Christos Kalligeros, Vasilios Spitas, Nikolaos Rogkas, Panteleimon Tzouganakis,** National Technical University of Athens**; Giuseppe Cicalese, Fabrizio D'Orrico,** R & D CFD Srl	Analysis Of Hydrogen Injections for Possible Application In Internal Combustion Engines **Oral Only 23ICE-0304** **Luigi Allocca**, **Alessandro Montanaro,** STEMS-CNR**; Angelo De Vita, Francesco Duronio,** Università degli Studi dell'Aquila
11:30	Investigation via Finite Element Analysis of the Influence of Boiling on the Thermo-Structural Behavior of the Engine Head of a High-Performance Combustion Engine **2023-24-0184** **Andrea Piergiacomi, Saverio Giulio Barbieri, Fabio Renso, Valerio Mangeruga, Matteo Giacopini,** University of Modena and Reggio Emilia	CFD Lagrangian modelling of ammonia direct injection spray: a correlation across flash boiling and evaporative conditions **Oral Only 23ICE-0548** **Jacopo Zembi, Michele Battistoni,** Università degli Studi di Perugia
11:50	Computational Assessment of Ammonia as a Fuel for Light-Duty SI Engines **2023-24-0013** **Mickael Silva, Fahad Almatrafi, Kalim Uddeen, Emre Cenker, Jaeheon Sim, Mourad Younes, Aqil Jamal,** Saudi Aramco**; Thibault Guiberti, James Turner, Hong Im,** King Abdullah University of Science & Technology	Analysis of Helium Jet Structure and Velocity using PIV Measurement Technique **Oral Only 23ICE-0557** **Giovanni Cecere, Adrian Irimescu, Simona Silvia Merola**, **Bianca Maria Vaglieco,** STEMS-CNR; **Mats Andersson,** Chalmers Univ. of Technology

Tuesday, 12th September

	Room Capri	*Room Rotonda*
	ICE201 - Combustion in Spark Ignition Engines: Basic, alternative fuels & Abnormal Combustion **Chairpersons: Simona S. Merola & Christine M. Rousselle**	**ICE401 - Exhaust Emission Control: Systems New Developments and modeling** **Chairpersons: Gianluca Montenegro & Panayotis Dimopoulos Eggenschwiler**
10:10	Numerical Investigation on the Cause-and-Effect Chain for Cycle-to-Cycle Variation of Direct-Injection Spark-Ignition Engine **2023-24-0035** **Ye Feng, Andre Kulzer,** University of Stuttgart**; Michael Grill,** FKFS	Coupled Engine and After-Treatment Simulation for Fuel Efficient EU7 Technologies **2023-24-0104** **Vasileios Tziolas, Grigorios Koltsakis,** Aristotle University of Thessaloniki; **Kleoniki Chatzipartali,** Exothermia SA
10:50	Evaluation of Different Gasoline Formulations on a High-Performance Engine **2023-24-0038** **Marius Graßmeyer, Frank Atzler,** Technische Universitaet Dresden	Virtual Development of Control Coordinator for Engine and Aftertreatment Architecture Equipped with Diesel Fuel Burner **2023-24-0103** **Chiara Pozzi, Claudio Ciaravino, Antonio Donniacuo, Paolo Ferreri, Giuseppe Previtero,** Punch Torino SpA; **Federico Chen, Nicola Totaro,** Punch Softronix Srl; **Rahul Mital,** General Motors LLC
11:10	A Comparison of Methanol, Methane and Hydrogen Fuels for SI Engines: Performance and Pollutant Emissions **2023-24-0037** **Francesco Catapano, Silvana Di Iorio, Agnese Magno, Paolo Sementa, Bianca Maria Vaglieco,** STEMS-CNR	Experimental and Numerical Analysis of a Swirled Fuel Atomizer for an Aftertreatment Diesel Burner **2023-24-0106** **Lucio Postrioti, Michele Battistoni, Jacopo Zembi,** Università degli Studi di Perugia; **Gabriele Brizi,** STSE s r l**; Marco La Sana, Mauro Brignone, Francesco Napoli, Salvatore Pizza, Emanuele Milani,** Marelli
11:30	An Experimental Characterization of Gasoline/Ozone/Air Mixtures in Spark Ignition Engines **2023-24-0039** **Fabio Anaclerio**, **Francesco Fornarelli,** Università degli studi di Foggia; **Gianmarco Saponaro, Sergio Camporeale,** Politecnico di Bari; **Ezio Mancaruso**, STEMS-CNR; **Carlo Mazzarella,** Centro Ricerche Fiat S.p.a; **Vinicio Magi,** Università degli Studi della Basilicata	Full-scale CFD prediction of the performance of advanced after treatment systems during severe RDE test cycles **Oral Only 23ICE-0412** **Andrea Sartirana, Angelo Onorati, Augusto Della Torre, Gianluca Montenegro,** Politecnico di Milano**; Naroa Zaldua-Moreno, Lorenzo Pace,** Vitesco Technologies
11:50	Soot Modeling of GTDI Engines Using a Recently Developed Turbulent Premixed Combustion Model Implemented with an Improved TRF Mechanism and a Practical Semi-Detailed Soot Model **2023-24-0044** **Shiyou Yang**, Ford Motor Company	On-Board Monitoring of Emissions in the Future Euro 7 Standard **2023-24-0111** **Vicente Franco, Panagiota Dilara, Nils Hennig,** European Commission, DG GROW**; Dario Manara, Fabrizio Forloni,** European Commission, JRC; **Ian Short,** Ricardo**; Norbert Ligterink,** TNO Automotive; **Markus Ehrly,** FEV Europe GmbH; **Dimitrios Kontses, Zissis Samaras,** Aristotle University of Thessaloniki

	Tuesday, 12th September	
	Room Teatro	*Room Donna Lucia*
	ICE605 - Battery and Energy Storage Systems for Electric Mobility **Chairpersons: Giorgio Rizzoni & Clemente Capasso**	**ICE302 - Alternative and Advanced Fuels** **Chairpersons: Stefania Esposito & Vincenzo Mulone**
12:10	Multi-Dimensional Simulation of Battery Degradation during Fast-Charging with Active Thermal Management **2023-24-0157** **Grigorios Koltsakis**, **Dimitrios Besinas, Spyridon Spyridopoulos, Apostolos Kanatas,** Aristotle University of Thessaloniki; **Odysseas Koutsokeras, Zisis Lampropoulos**, EMISIA SA	Sustainability of Advanced ICEs Based HEVs for Passenger Cars Fuelled with Alternative Fuels: A LCA Study in Comparison with BEV Technology **2023-24-0094** **Livia Della Ragione, Giovanni Meccariello, Carlo Beatrice,** STEMS-CNR; **Raffaele Ricco,** CRF-Stellantis
12:30	A State of Health Estimation Technique based on a Temperature and Ah Throughput Dependency Model of the Capacity Fade **2023-24-0158** **Alberto Broatch, Pablo Olmeda, Xandra Margot, Luca Agizza,** CMT Universitat Politècnica de València	Investigation of Liquid Lignin-Methanol Blends under Realistic Two-Stroke Marine Engines Conditions **2023-24-0085** **Maurizio Lazzaro, Paolo Sementa, Francesco Catapano, Cinzia Tornatore,** STEMS-CNR; **Stefano Iannuzzi,** Wärtsilä Services Switzerland Ltd; **Michael Boot**, Vertoro B.V. and Eindhoven University of Technology; **Panos Kouris**, Vertoro B.V.
12:50	Driving Style Effects on Road EV Battery Performance and Remaining Useful Life **2023-24-0169** **Clemente Capasso, Luigi Iannucci, Luigi Sequino, Bianca Maria Vaglieco, Ottorino Veneri,** STEMS- CNR	Study of high-pressure ammonia spray and combustion through optical diagnostics in marine engine-like conditions **Oral Only 23ICE-0526** **Paolo Sementa, Cinzia Tornatore, Francesco Catapano, Maurizio Lazzaro,** STEMS-CNR
13:10	Experimental and Numerical Electro-Thermal Characterization of Lithium-Ion Cells for Vehicle Battery Pack Applications **2023-24-0159** **Barbara Mendecka, Gino Bella, Paola Serao,** University of Rome Niccolò Cusano; **Vesselin Krassimirov Krastev**, University of Rome Tor Vergata	
13:30	**Lunch break**	

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	Room Capri	*Room Rotonda*
	ICE603 - Hydrogen and Fuel Cell Vehicle Applications **Chairperson: Cesare Pianese**	**ICE303 - Automotive Lubricants** **Chairperson: Chiara Guido**
12:10	Hydrogen Fuelled Urban Mobility: Life Cycle Assessment and Costs of Alternative Bus Powertrains **Oral Only 23ICE-0490** **Federico Millo, Luciano Rolando, Andrea Piano, Benedetta Peiretti Paradisi, Luca Pulvirenti, Afanasie Vinogradov,** Politecnico di Torino	Application of Metal Oxide Gas Sensors for the Detection of Fuel Contamination in ICEs Oil **2023-24-0101** **Ambra Fioravanti, Luigi Sequino, Paolo Sementa,** STEMS-CNR
12:30	A MATLAB/Simulink Model of a PEM Fuel Cell System Including Ageing Phenomenon **2023-24-0148** **Giuseppe Corda, Sebastiano Breda, Alessandro D'Adamo,** Università di Modena e Reggio Emilia	Insights on the effect of lubricant oil formulation on particles emission from gas engines **Oral Only 23ICE-0469** **Davide Di Domenico, Chiara Guido, Dario Di Maio, Pierpaolo Napolitano,** STEMS-CNR
12:50	CFD Simulations and Potential of Nanofluids for PEM Fuel Cells Cooling **2023-24-0144** **Alessandro D'Adamo, Giuseppe Corda, Fabio Berni, Martino Diana, Stefano Fontanesi,** Università di Modena e Reggio Emilia	Twenty years of engine tribology research: Some important lessons to learn **2023-24-0102** **Boris Zhmud, Daniel Basiri,** Tribonex AB; **Urban Morawitz, Daniel Schulz**, Ford Werke GmbH
13:10	Modeling and Design of a PEM Fuel Cell System for Ferry Applications **2023-24-0145** **Gianmarco Saponaro, Michele Stefanizzi, Marco Torresi, Sergio Camporeale,** Polytechnic University of Bari; **Emanuele Franchini**, Isotta Fraschini Motori SpA	Research of the Properties of Engine Oil SAE 10W-40 During Operation in Vehicles **Oral Only 23ICE-0385** **Ivan Nahliuk, Mykhailo Nahliuk, Sergy Krivoshapov,** Kharkov National Auto and Highway Univ; **Andrey Grigorov,** National Technical University «KhPI»
13:30	**Lunch break**	

Tuesday, 12th September

	Room Teatro	*Room Donna Lucia*
	ICE203 - Homogenous Charge Partially, Premixed Compression Ignition & Dual-Fueled Engines **Chairperson: Frank Atzler**	**ICE501 - CI & SI Engines Technology** **Chairperson: Paolo Sementa**
14:30	Meta-Model Optimization of Dual-Fuel Engine Performance and Emissions Using Emulsified Diesel with Varying Water Percentages and Injection Timing **2023-24-0032** **Youcef Sehili, Khaled Loubar, Clément Lacroix,** GEPEA Laboratory, CNRS; **Lyes Tarabet, Cerdoun Mahfoudh,** Ecole Militaire Polytechnique	Indirect Assessment of Isentropic Efficiency in Turbocharger Turbines via Mechanical Efficiency Evaluation under Quasi-Adiabatic Test **2023-24-0121** **Carla Cordalonga, Silvia Marelli, Vittorio Usai, Massimo Capobianco,** Università di Genova
14:50	Experimental Analysis of a Single-Cylinder Large Bore Engine with External Supercharging in Diesel/CNG Dual-Fuel Mode **2023-24-0058** **Luigi De Simio, Sabato Iannaccone, Vincenzo Pennino, Luca Marchitto**, STEMS-CNR	Potentials of Air Path Variabilities and Water Injection in HD Gas Engines **2023-24-0120** **Marius Betz, Peter Eilts,** Technische Universität Braunschweig
15:10	Comparison of Premixed Fuel and Premixed Charge Operation for Propane-Diesel Dual-Fuel Combustion **2023-24-0059** **Florian Mueller, Michael Guenthner**, RPTU University of Kaiserslautern-Landau	An Innovative Engine Concept to Support the Development of Carbon-Neutral Mobility Solutions: the PHOENICE project **Oral Only 23ICE-0551** **Toni Tahtouh**, IFPEN-Carnot; **Federico Millo, Luciano Rolando, Giuseppe Castellano,** Politecnico di Torino; **Mauro Brignone,** Marelli Europe S.p.A.; **Jeremy Temple Gidney,** Johnson Matthey PLC; **Nicolas Demeilliers,** In Extenso Innovation Croissance; **Gennaro Lucignano,** Stellantis N.V.; **Juan Sierra Castellanos,** Garrett Motion France S.A.S; **Francesco Bocchieri,** FEV Group GmbH
15:30	**Coffee break**	

Tuesday, 12th September

	Room Capri	*Room Rotonda*
	ICE403 - PM Non-Exhaust emissions **Chairpersons: Zissis Samaras & Silvana Di Iorio**	**ICE202 - Combustion in CI Engines: Basic & alternative fuel** **Chairperson: Tommaso Lucchini**
14:30	Evaluation of PM Emissions from Internal Combustion Engines, Electric and Plug-In Hybrid Vehicles by Using Emission Factors **2023-24-0116** **Teresa Castiglione, Diego Perrone,** University of Calabria; **Massimo Polistina**, University Hospital "R. Dulbecco" CZ	Development of a 5-Component Diesel Surrogate Chemical Kinetic Mechanism Coupled with a Semi-Detailed Soot Model with Application to Engine Combustion and Emissions Modeling **2023-24-0030** **Shiyou Yang**, Ford Motor Company; **Ruicheng Yang,** University of Michigan - Ann Arbor
14:50	HORIZON Europe Project AeroSolfd: GPF-Retrofit for Cleaner Urban Mobility **2023-24-0114** **Lauretta Rubino, Andreas Mayer, Jan Czerwinski, Thomas Lutz, Lars Larsen,** VERT Association; **Danilo Engelmann,** Berner Fachhochschule TI AFHB; **Martin Lehmann,** Mann+Hummel GmbH	Numerical Study on the Effect of Injector Nozzle Hole Number on Diesel Engine Performance under Plateau Conditions **2023-24-0033** **Junliang Zhao, Ruomiao Yang, Yuchao Yan, Juan Ou, Zhentao Liu, Jinlong Liu,** Zhejiang University
15:10	Exhaust Emission Toxicity Assessment for Two Different Modern Gasoline Vehicle Technologies **2023-24-0117** **Georgios Tsakonas, Rodopi Stamatiou, Anastasios Kontses, Antigone Lazou, Zissis C. Samaras,** Aristotle University of Thessaloniki; **Micol Introna, Ana Juárez-Facio, Sarah Steimer, Karine Elihn,** Stockholm University	Experimental and 3D-CFD Analysis of Synthetic Fuel Properties on Combustion and Exhaust Gas Emission Characteristics in Heavy-Duty Diesel Engines **2023-24-0052** **Kunihiro Shimizu, Tomoki Narushima, Ratnak Sok, Jin Kusaka,** Waseda University
15:30	**Coffee break**	

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	Room Teatro	*Room Donna Lucia*
	ICE601 - Advanced Hybrid and Electric Vehicle Powertrains **Chairpersons: Ivan Arsie & Andrea Adinolfi**	**ICE102 - Multi-Dimensional Engine Modeling** **Chairpersons: Stefano Fontanesi & Xandra Margot**
16:00	Fuel Cell/Battery Hybrid Lightweight Quadricycle with Metal Hydride Hydrogen Storage for Improved Performance **2023-24-0137** **Laura Tribioli**, Università di Roma Niccolo' Cusano; **Giovanni Di Ilio, Elio Jannelli,** Università di Napoli Parthenope	CONVERGE for Sustainable Mobility **Oral Only 23ICE-0568** **Rainer Rothbauer,** Convergent Science GmbH
16:20	Analytical Models for the Sizing Optimization of Fuel Cell Hybrid Electric Vehicle Powertrains **2023-24-0133** **Daniel Carlos Da Silva, Laid Kefsi, Antonio Sciarretta,** IFPEN-Carnot	Effect of Start of Injection in a Hydrogen-Fueled DISI Engine: Experimental and Numerical Investigation **2023-24-0015** **Fabio Santi Mortellaro, Nicola Silvestri, Francesco Zaffino, Massimo Medda**, FERRARI S.p.A.; **Matteo D'Elia, Veeraraghavan Viswanathan, Rainer Rothbauer,** Convergent Science GmbH
16:40	Scaled Hardware in the Loop Simulation of the Electric Motors of a CVT for Agricultural Tractors **2023-24-0136** **Damiano Chiarabelli, Pietro Marani, Massimo Martelli, Silvia Gessi**, Consiglio Nazionale delle Ricerche; **Erik Schaltz, Kaiyuan Lu,** Aalborg University; **Emiliano Mucchi,** Università degli Studi di Ferrara	CFD Modelling of Hydrogen-Fueled SI Engines for Light-Duty Applications **2023-24-0017** **Federico Ramognino, Lorenzo Sforza, Gianluca D'Errico, Angelo Onorati,** Politecnico di Milano; **Josep Gomez-Soriano, Ricardo Novella,** Universitat Politecnica de Valencia
17:00	Hybrid Storage System Management for Hybrid Electric Vehicles under Real Operating Conditions **Oral Only 23ICE-0529** **Carlo Beatrice, Ottorino Veneri, Clemente Capasso,** STEMS-CNR; **Zissis Samaras, Stylianos Doulgeris,** Aristotle University of Thessaloniki;	CFD modelling of a Marine Engine in dual fuel mode supplied with Methane/Hydrogen blends **Oral Only 23ICE-0301** **Maria Cristina Cameretti, Roberta De Robbio**, **Marco Palomba**, Università di Napoli Federico II
17:20	Advancing Automotive Powertrain Control Development: HiL Simulation in the Context of Electrification and Digitalization **Oral Only 23ICE-0564** **Emanuele Servetto**, Powertech Engineering SRL	Characterization of the combustion process of a passive pre-chamber gasoline engine through 3D-CFD simulations **Oral Only 23ICE-0494** **Federico Millo, Andrea Scalambro, Andrea Piano,** Politecnico di Torino; **Paolo Sementa, Silvana Di Iorio, Francesco Catapano**, STEMS-CNR; **Andrea Bianco,** Powertech Engineering SRL
	ICE605 - Battery and Energy Storage Systems for Electric Mobility **Chairpersons: Matilde D'Arpino & Faissal El Idrissi**	Toward the 50% Brake Thermal Efficiency: a 1D/3D Numerical Analysis of an Active Pre-Chamber SI Natural Gas Engine for Off-Road applications **Oral Only 23ICE-0483** **Dario Di Maio**, **Pierpaolo Napolitano, Carlo Beatrice, Chiara Guido,** STEMS-CNR; **Stefano Golini,** FPT Industrial SpA; **Lorenzo Sforza, Tommaso Lucchini,** Politecnico di Milano
17:40	Evaluation of Battery Power Losses During the LCA Use Phase of Electric Vehicles: An Experimental Analysis of Different Li-Ion Battery Chemistries **2023-24-0155** **Luca Silvestri, Michele De Santis, Paola Serao, Gino Bella,** Niccolò Cusano University; **Giacomo Falcucci,** University of Roma Tor Vergata	

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	Room Capri	*Room Rotonda*
	ICE401 - Exhaust Emission Control: Systems New Developments and modeling **Chairpersons: Gianluca Montenegro & Cinzia Tornatore**	**ICE202 - Combustion in CI Engines: Basic & alternative fuel** **Chairperson: Peter Eilts**
16:00	Improvement of Post-Oxidation for Low-Emission Engines through 3D-CFD Virtual Development **2023-24-0107** **Mario Pipolo, Andre Kulzer,** University of Stuttgart; **Marco Chiodi,** FKFS; **Yasuo Moriyoshi,** Chiba Universty	Evaluation of Neat Methanol as Fuel for a Light-Duty Compression Ignition Engine **2023-24-0047** **Antonio Garcia, Javier Monsalve-Serrano, María Guzmán Mendoza,** Universitat Politecnica de Valencia; **Patrick Gaillard,** Aramco Fuel Research Center**; Russell Durrett,** General Motors LLC; **Alberto Vassallo, Francesco Pesce,** Punch Torino SpA
16:20	Towards H_2 High-Performance IC Engines: Strategies for Control and Abatement of Pollutant Emissions **2023-24-0108** **Margherita Bulgarini, Augusto Della Torre, Loris Barillari, Gianluca Montenegro, Angelo Onorati,** Politecnico di Milano; **Fabrizio Gullino, Roberto Tonelli,** Ferrari S.p.A.	Effect of Intake Conditions (Temperature, Pressure and EGR) on the Operation of a Dual-Fuel Marine Engine with Methanol **2023-24-0046** **Jeroen Dierickx, Quinten Dejaegere, Stan Devos, Berten De Cock, Sebastian Verhelst,** Ghent University; **Andreas Van Gijzeghem,** Anglo Belgian Corporation
16:40	Wall Permeability Estimation in Automotive Particulate Filters **2023-24-0110** **Callum Samuels**, **Ran Holtzman, Stephen Benjamin,** Coventry University; **Svetlana Aleksandrova,** University of Leicester; **Timothy C. Watling,** Johnson Matthey; **Humberto Medina,** University of Nottingham	Study of Higher Alcohol Potential as a Drop-In Fuel for a High Thermal Efficiency Heavy-Duty Diesel Engine **2023-24-0049** **Noboru Uchida**, **Fumihiro Kawaharazuka,** New ACE Institute Co., Ltd.
17:00	Simulation of CNG Engine in Agriculture Vehicles. Part 2: Coupled Engine and Exhaust Gas Aftertreatment Simulations Using a Detailed TWC Model **2023-24-0112** **Larisa Leon de Syniawa**, **Vivien Guenther,** LOGE AB; **Reddy Babu Siddareddy,** LOGE Polska Sp. z o.o.; **Sascha Prehn,** University of Rostock; **Tim Franken,** BTU Cottbus-Senftenberg; **Bert Buchholz,** University of Rostock; **Fabian Mauß,** BTU Cottbus-Senftenberg	**ICE502 - Thermal Systems Management** **Chairpersons: Luigi Sequino & Sam Akehurst** Piston Pre-Heating Using a Pressurized-Heated Oil Buffer: A Practical Method to Reduce ICE Emissions and Fuel Consumption **2023-24-0123** **Mirko Bovo**, **Mohammed Jaasim Mubarak Ali,** Aurobay
17:20	A Consistent Dual-Mesh Framework for Hybrid LES/RANS Simulations of Vehicle Exhaust Plumes: Implications for Remote Emission Sensing **2023-24-0105** **Justin Plogmann**, EMPA, ETH Zürich; **Panayotis Dimopoulos Eggenschwiler, Charles Pierce,** EMPA; **Patrick Jenny,** ETH Zürich	Direct and Indirect Exhaust Heat Recovery from Turbocharged Heavy-Duty Engine **2023-24-0122** **Marco Di Bartolomeo**, **Davide Di Battista, Fabio Fatigati, Roberto Cipollone,** University of L'Aquila; **Giorgio Cau,** University of Cagliari

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	Room Teatro	*Room Donna Lucia*
	ICE605 - Battery and Energy Storage Systems for Electric Mobility **Chairpersons: Matilde D'Arpino & Faissal El Idrissi**	**ICE301 - Fuel Injection and Sprays** **Chairpersons: Alessandro Montanaro & José Vicente Pastor**
18:00	Battery Surface Temperature Measurement Correction for an Accelerating Rate Calorimeter with Sapphire Optical Access **2023-24-0164** **Jose V. Pastor, Carlos Micó, Felipe Lewiski, Diego Golke,** Universitat Politecnica de Valencia	Experimental-Numerical Analysis of Gasoline Spray-Wall Impingement at Ultra-High Injection Pressure for GCI Application **2023-24-0082** **Davide Viscione, Giacomo Silvagni, Stefania Falfari, Gian Marco Bianchi, Vittorio Ravaglioli, Valerio Mariani,** University of Bologna; **Luigi Allocca, Alessandro Montanaro, Giovanni Meccariello,** STEMS-CNR
18:20	Experimental Investigation on Thermal Effects of a Metal Foam-based Frame Application for Lithium-Ion Cells **2023-24-0168** **Luigi Sequino, Clemente Capasso**, STEMS-CNR; **Girolamo Costanza, Maria Elisa Tata,** Università degli Studi di Roma Tor Vergata	X-ray Radiography Measurements of Spray Impingement on High-Temperature Glow Plug Ignition Assistance Systems **Oral Only 23ICE-0361** **Chi Young Moon**, **Ashwini Karmarkar, Brandon Sforzo, Alan Kastengren, Christopher Powell,** Argonne National Laboratory; **Eric Mayhew, Kenneth Kim, Jacob Temme, Chol-Bum Kweon,** US Army DEVCOM Army Research Laboratory
18:40	Advantages of 3D and 1D Modeling a Li-Po Battery for the Prediction of Overheating under Real Driving Conditions **2023-24-0167** **Luca Magri, Luigi Sequino, Cristian Ferrari,** STEMS-CNR	Experimental Collision and Swirl of CFD Simulated Fuel Sprays in a Dual Injector Cylinder Head Concept **2023-24-0080** **Marcos Gutierrez,** Tablet School - UIDE; **Diana Taco,** Tablet School; **Markus Bösenhofer, Michael Harasek,** TU Wien; **Andres Castillo, Juan Iniguez, Gorky Reyes, Denny Guanuche,** Universidad Internacional Del Ecuador

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	Room Capri	*Room Rotonda*
	ICE404 - Emissions from Combustion Sources **Chairpersons: Antonino La Rocca & Barbara Apicella**	**ICE201- Combustion in Spark Ignition Engines: Basic, alternative fuels & Abnormal Combustion** **Chairprsons: Simona S. Merola & Christine M. Rousselle**
17:40	DEKATI TBD	Engine Efficiency Measurements Using a 100 kHz Radio Frequency Corona Igniter **2023-24-0041** **Federico Ricci, Carlo Grimaldi, Michele Battistoni, Jacopo Zembi,** Università degli Studi di Perugia; **Stefano Papi**, **Massimo Dal Re**, Federal Mogul Powertrain Italy Srl
18:00	Italian road transportation: possible routes to 2030 in a decarbonization optics **Oral Only 23ICE-0477** **Carlo Beatrice, Davide Di Domenico,** STEMS-CNR; **Vittorio Marzano, Daniela Tocchi, Ilaria Henke,** University of Naples Federico II; **Armando Cartenì, Mariarosaria Picone**, University of Campania Luigi Vanvitelli; **Ennio Cascetta, Sergio Maria Patella**, Universitas Mercatorum	Numerical and Experimental Investigation on Passive Prechamber Configurations Able to Operate at Low Engine Speed and Load **2023-24-0031** **Giovanni Gaetano Gianetti**, **Tommaso Lucchini, Lorenzo Sforza, Angelo Onorati,** Politecnico di Milano; **Claudio Lombardi,** Consultant Engineering; **Carlo Cavagnero**, Italtecnica
18:20	Particulate Matter (PM) Characterization from a Light-Duty Compression Ignition Engine Fuelled with Hydrotreated Vegetable Oil (HVO) **Oral Only 23ICE-0550** **Federico Millo, Andrea Piano, Mohammadjavad Jafari Mahmoudabadi,** Politecnico di Torino; **Francesco Pesce, Alberto Vassallo,** Punch Torino SpA; **Corrado Fittavolini,** ENI Div. R&M	Effects of Pre-Chamber Internal Shape on CH_4-H_2 Combustion Characteristics Using Rapid-Compression Expansion Machine Experiments and 3D-CFD Analysis **2023-24-0043** **Yixin Feng, Ryo Yamazaki, Ratnak Sok, Jin Kusaka,** Waseda University
18:40	Insights into the role of lubricating oil in particles and other organic pollutant emissions from a hydrogen fueled DI SI engine through physical and chemical techniques **Oral Only 23ICE-0544** **Barbara Apicella**, **Silvana Di Iorio, Carmela Russo, Agnese Magno, Paolo Sementa, Francesco Catapano, Antonio Tregrossi, Bianca Maria Vaglieco,** STEMS-CNR	Fuel Stratification to Improve the Lean Limit in a Methane-Fueled Heavy-Duty Spark-Ignition Optical Engine **2023-24-0045** **Niraj Panthi**, **Priybrat Sharma, Gaetano Magnotti,** King Abdullah University of Science & Technology
19:00	Reactivity of Diesel Soot from 6- and 8-Cylinder Heavy-Duty Engines **2023-24-0119** **Samuel af Ugglas**, **Tayisiya Vlasenko, Anders Ersson,** Scania CV AB; **Lars Pettersson, Henrik Kusar,** KTH Royal Institute of Technology	

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8:30	***Registration***	
9:00	***European Fuel Cells and Hydrogen: Welcome and Opening Ceremony*** ***Antonio Garofalo*** *Magnifico Rettore Università degli Studi di Napoli Parthenope* ***Giorgio Graditi*** *Direttore Generale ENEA* ***Viviana Cigolotti*** *EFC23 Chairperson*	
9:30	**On the threshold of a Hydrogen Era** **Ibrahim Dincer** Research Excellence Chair in Clean Hydrogen Energy Technologies, Ontario Technology University	
10:00	**Hydrogen and Fuel cells Initiative in Japan - Roadmap and future perspectives** **Kazuyuki Imazato** Representative Office in Europe, NEDO	
10:20	**Hydrogen and Fuel cells Initiative in US - Roadmap and future perspectives** **Jack Brower** Director of the National Fuel Cell Research Center (NFCRC) and Advanced Power and Energy Program (APEP), University of California	
10:40	**Hydrogen strategies in the Southern and Eastern Mediterranean Countries** **Maged Mahmoud** Technical Director of Regional Center for Renewable Energy and Energy Efficiency (RCREEE)	
11:00	**Coffee break**	
	Room Teatro	***Room Donna Lucia***
	EFC - Hydrogen, a universal fitting for a clean future	**ICE204 - Combustion in Hydrogen Fueled Engines** **Chairpersons: Fabrice Foucher & Gilles Bruneaux**
11:20	CH2 JU Initiatives and future perspectives for R&D on H2 in Europe **Mirela Atanasiu** Head of Unit of Operations and Communication and Director ad interim Clean Hydrogen Partnership	Conversion of a Small Size Passenger Car to Hydrogen Fueling: 0D/1D Simulation of Port- vs Direct-Injection and Boosting Requirements **2023-24-0074** **Adrian Irimescu, Simona Merola, Bianca Maria Vaglieco,** STEMS-CNR**; Vasco Zollo, Raffaele De Marinis,** Demax Srl
11:40	Green Hydrogen: mutual benefit of sustainable development for Europe and Africa **Aristide Fausto Massardo** Coordinator Horizon Europe project "JUST-GREEN AFRH2ICA", Chairholder UNESCO Chair on Innovative Sustainable Clean Energy, Università di Genova	Assessment of Dilution Options on a Hydrogen Internal Combustion Engine **2023-24-0066** **Loic Rouleau, Ludovic Nowak, Florence Duffour, Bruno Walter,** IFPEN
12:00	Implementing the hydrogen transition in Europe: status and objectives of the research sector **Luigi Crema** President of Hydrogen Europe Research	High Performance and Near Zero Emissions 2-Stroke H2 Engine **2023-24-0068** **Stefano Caprioli, Antonello Volza, Enrico Mattarelli, Carlo Alberto Rinaldini,** Università di Modena e Reggio Emilia
12:20	**Round table** **"Hydrogen in the Mediterranean"** **Moderator: Stephen McPhail, KIWA**	**ICE302 - Alternative and Advanced Fuels** **Chairpersons: Stefania Esposito & Sebastian Verhelst**
		From Waste to Fuel: Catalyst Synthesis and Combustion Assessment of Pyrolyzed Waste Engine Oil for Diesel Engine Applications **Oral Only 23ICE-0404** **Karim Khiari,** Ecole Militaire Polytechnique
12:40		Sustainability of Future Shipping Fuels: Well-to-Wake Environmental and Techno-Economic Analysis of Ammonia and Methanol **2023-24-0093** **Shashwat Tripathi, Antonio Garcia,** Universitat Politecnica de Valencia; **Inna Gorbatenko, Mani Sarathy,** King Abdullah University of Science & Technology
13:00		Electrofuel Concept of Diesel and Oxygenate Fuels Reduces Engine-Out Emissions **2023-24-0090** **Paivi Aakko-Saksa, Anssi Järvinen, Mikko Karppanen, Paivi Koponen, Pekka Piimäkorpi, Juha Lehtonen,** VTT Technical Research Center of Finland; **Sami Harni, Minna Aurela, Hilkka Timonen,** Finnish Meteorological Institute**; Petteri Marjanen, Lassi Markkula, Topi Rönkkö, Jussi Hoivala,** Tampere University
13:20	**Closing Remarks**	Experimental Investigation of Glycerol Derivatives as Low-Concentration Additives for Diesel Fuel **2023-24-0095** **André L. Olson, Nika Alemahdi, Martin Tunér, Sebastian Verhelst,** Lund University
13:40	**Lunch break**	

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	Room Capri	*Room Rotonda*
	ICE104 - Engine Management and Control **Chairpersons: Daniela Misul & Luciano Rolando**	**ICE201 - Combustion in Spark Ignition Engines: Basic, alternative fuels & Abnormal Combustion** **Chairpersons: Simona S. Merola & Christine M. Rousselle**
11:20	MEMS Application to Monitor the In-Cylinder Pressure of a Marine Engine **2023-24-0023** **Ezio Mancaruso, Luigi De Simio, Sabato Iannaccone, Luca Marchitto, Bianca Maria Vaglieco,** STEMS-CNR; **Luca Milano, Maria Cristina Cameretti,** Università Federico II di Napoli	Correlation of Oil Originating Particle Emissions and Knock in a PFI HD SI Engine Fueled with Methanol **2023-24-0036** **Filip Ainouz, Ludvig Adlercreutz, Andreas Cronhjort,** KTH Royal Institute of Technology; **Ola Stenlaas,** Scania CV AB
11:40	Experimental Investigation of Ion Formation for Auto-Ignition Combustion in a High-Temperature and High-Pressure Combustion Vessel **2023-24-0029** **Dominik Golc, Heinz Pitsch, Joachim Beeckmann,** RWTH Aachen University; **Stefania Esposito,** University of Bath	Investigation into Various Strategies to Achieve Stable Ammonia Combustion in a Spark-Ignition Engine **2023-24-0040** **Kalim Uddeen, Fahad Almatrafi**, **James Turner,** King Abdullah University of Science & Technology; **Hao Shi,** Cardiff University**; Qinglong Tang,** Tianjin University; **Jamie Parnell, Mark Peckham,** Cambustion Ltd
12:00	Performance Assessment of a Model-Based Combustion Control System to Decrease the Brake Specific Fuel Consumption **2023-24-0027** **Fenil Panalal Shethia, Jacopo Mecagni, Alessandro Brusa, Nicolo Cavina, Enrico Corti,** University of Bologna	Comparison of the Performance and Operation Limits of an S.I. Engine Fueled with Neat Ammonia and Hydrogen-Ammonia Blends **2023-24-0042** **Gabriele D'Antuono, Davide Lanni, Enzo Galloni, Gustavo Fontana,** DICEM, University of Cassino
12:20	**ICE104 - Engine Management and Control** **Chairman Daniela Misul & Luciano Rolando**	**ICE202 - Combustion in CI Engines: Basic & alternative fuel** **Chairman: Antonio Garcia**
	An MPC-Based Strategy for Managing Energy in Hybrid Powertrains of Fast Boats **2023-24-0025** **Ciro Tordela, Enrico Fornaro,** Università degli Studi di Napoli	Optical Diagnostic Study on Improving Performance and Emission in Heavy-Duty Diesel Engines Using a Wave-Shaped Piston Bowl Geometry and Post Injection Strategies **2023-24-0048** **Miaoxin Gong, Saeed Derafshzan, Mattias Richter, Oivind Andersson, Marcus Lundgren,** Lund University; **Stina Hemdal, Jan Eismark,** Volvo Group Trucks Technology
12:40	An Energy Management Strategy for Aeronautical Hybrid Propulsion Systems Based on an MPC Supervisor **2023-24-0026** **Enrico Fornaro, Ciro Tordela,** Università degli Studi di Napoli	Experimental Investigation on a DI Diesel Engine Fuelled with Diesel-Like Fuel Obtained by Waste Lubricant Oil Pyrolysis **2023-24-0050** **Lyes Tarabet,** Ecole Militaire Polytechnique
13:00	Energy Management System of Fuel Cell Electric Vehicles Based on Stochastic Model Predictive Control and Markov Chains **2023-24-0024** **Vincenzo Alfieri, Giulio Binetti, Romualdo Ruotolo,** Punch Hydrocells; **Edoardo Gandino,** Punch Softronix	Investigation of the Ducted Fuel Injection concept applied to a 8-hole nozzle in a medium duty optical engine **Oral Only 23ICE-0313** **Antonio Garcia, Carlos Micó, Usama Bin-Khalid, Felipe Lewiski,** Universitat Politecnica de Valencia; **Francesco Pesce, Alberto Vassallo, Giacomo Belgiorno, Francesco Accurso,** Punch Torino SpA
13:20	Real Time Modelling of Automotive Electric Drives for Hardware-in-the-Loop Applications **2023-24-0028** **Paolo Poletto, Stellantis; Andrea Angiolini, Giulio Boccardo, Eduardo Graziano,** Powertech Engineering SRL; **Silvio Vaschetto,** Politecnico di Torino; **Roberto Demelas,** Stellantis	Experimental investigation on the effect of the physicochemical properties of biodiesel on the internal combustion engine **Oral Only 23ICE-0396** **KADI Mohamed EL Amine,** Ecole Militaire Polytechnique
13:40	**Lunch break**	

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Wednesday, 13th September

	Room Teatro	*Room Donna Lucia*
	ICE204 - Combustion in Hydrogen Fueled Engines **Chairpersons: Fabrice Foucher & Gilles Bruneaux**	**ICE605 - Battery and Energy Storage Systems for Electric Mobility** **Chairpersons: Giorgio Rizzoni & Luigi Sequino**
14:30	Numerical Modeling of Hydrogen Combustion Using Preferential Species Diffusion, Detailed Chemistry and Adaptive Mesh Refinement in Internal Combustion Engines **2023-24-0062** **Josep Gomez-Soriano, Miguel Olcina-Girona, Ricardo Novella,** Universitat Politecnica de Valencia; **Pradeep Sapkota, Sameera Wijeyakulasuriya, Matteo D'Elia, Daniel Probst, Veeraraghavan Viswanathan,** Convergent Science GmbH	Second-Life of Electric Vehicle Batteries from a Circular Economy Perspective: A Review and Future Direction **2023-24-0151** **Cristina De Luca, Antonio Forcina**, Parthenope University of Naples; **Luca Silvestri,** Niccolò Cusano University; **Cecilia Silvestri,** University of Tuscia; **Gino Bella,** University of Rome
14:50	Thermodynamics of Lean Hydrogen Combustion by Virtual Investigations on a Single-Cylinder Engine with Port Fuel Injection and Pre-Chamber Ignition **2023-24-0063** **Thomas Gal, Antonino Vacca, Marco Chiodi,** FKFS; **Robin Schmelcher, Andre Kulzer,** IFS, University Stuttgart; **Sebastian Bucherer, Paul Rothe, Florian Sobek, Theo Gottwald, Ivica Kraljevic,** Fraunhofer ICT	Optimized Control Strategy for Inductor-based Cell Equalizers **2023-24-0166** **Francesco Porpora, Emanuele Di Fazio, Mauro Di Monaco, Giuseppe Tomasso,** University of Cassino and Southern Lazio; **Matilde D'Arpino,** The Ohio State University
15:10	CFD Analysis of the Injection Strategy of a Dual Fuel Compression Ignition Engine Supplied with Hydrogen **2023-24-0064** **Roberta De Robbio, Maria Cristina Cameretti, Marco Palomba, Raffaele Tuccillo,** Università di Napoli Federico II; **Ezio Mancaruso,** STEMS-CNR	LCA and LCC of a Li-ion Battery Pack for Automotive Application **2023-24-0170** **Natalia Di Vittorio, Edwin Tam,** University of Windsor; **Antonella Accardo, Ezio Spessa,** Politecnico di Torino; **Lucio Viscido,** CRF SCpA
15:30	Numerical Analysis of Hydrogen Injection and Mixing in Wankel Rotary Engines **2023-24-0069** **Kevin Moreno Cabezas, Giovanni Vorraro, Xinlei Liu, Rafael Menaca, Hong G. Im, James W.G. Turner,** King Abdullah University of Science & Technology	Improving the Feasibility of Electrified Heavy-Duty Truck Fleets with Dynamic Wireless Power Transfer **2023-24-0161** **Trentalessandro Costantino, Federico Miretti, Ezio Spessa,** Politecnico di Torino
15:50	**Coffee break**	
	ICE605 - Battery and Energy Storage Systems for Electric Mobility **Chairpersons: Matilde D'Arpino & Francesco Porpora**	**ICE609 - Smart Energy Systems** **Chairprsons: Panayotis Dimopoulos Eggenschwiler**
16:20	Co-Simulation Framework for Electro-Thermal Modeling of Lithium-Ion Cells for Automotive Applications **2023-24-0163** **Faissal El Idrissi, Prashanth Ramesh,** Center For Automotive Research; **Matilde D'Arpino, Marcello Canova,** The Ohio State University	Zero Emission Hydrogen Internal Combustion Engine for a 5 kW Mobile Power Generator: Conversion Strategy for Carburetted SI Engines **2023-24-0183** **Rik Joël Bättig,** ETH Zürich; **Trevor Jasper,** CMB.TECH; **Yannis Hardalupas, Alexander Taylor,** Imperial College London; **Panayotis Dimopoulos Eggenschwiler,** EMPA
16:40	Numerical Modelling and Experimental Validation of the Thermal Behavior of Li-ion Batteries for EVs Applications **2023-24-0153** **Teresa Castiglione, Diego Perrone, Daria La Gamba, Sergio Bova,** University of Calabria; **Luigi Sequino, Bianca Maria Vaglieco,** STEMS-CNR	Is Banning Fossil-Fueled Internal Combustion Engines the First Step in a Realistic Transition to a 100% RES Share? **Oral Only 23ICE-0500** **Piero Danieli, Massimo Masi, Andrea Lazzaretto,** University of Padova
17:00	Model-Based Energy Consumption Optimization of a Twin Battery Concept Combining Liquid and Solid-State Electrolyte Cells **2023-24-0154** **Alexander Fandakov, Paul Tourlonias, Emre Özkan, Ronny Kurt Mehnert, Marc Sens**, IAV GmbH; **Alexander Herzog,** IAV GmbH, Munich University App. Sc. HM	**ICE606 Powertrain Adaptation for Connectivity and Automation** **Chairperson: Giorgio Rizzoni** A Modified Enhanced Driver Model for Heavy-Duty Vehicles with Safe Deceleration **2023-24-0171** **Ankur Shiledar, Manfredi Villani, Giorgio Rizzoni,** The Ohio State University; **Ennio Andrea Adinolfi, Cesare Pianese, Alfonso Pandolfi,** University of Salerno; **Antonio Paolino**, MinervaS s.r.l.
17:20	Thermal Performance of a 48V Prismatic Lithium-Ion Battery Pack Under WLTC Driving Cycles with a Liquid Cooling System **2023-24-0152** **Antonio Paolo Carlucci, Hossein Darvish, Domenico Laforgia,** University of Salento	A Bi-Level Optimization Approach for Eco-Driving of Heavy-Duty Vehicles **2023-24-0172** **Jiamin Zhu, Pierre Michel, Daniele Zonetti, Antonio Sciarretta,** IFPEN
20:00	**Gala dinner**	

Wednesday, 13th September

	Room Capri	*Room Rotonda*
	ICE301 - Fuel Injection and Sprays **Chairpersons: Michele Battistoni & José Vicente Pastor**	**ICE608 - Physical, virtual and mixed test methods for efficient powertrain concepts** **Chairpersons: Danilo Engelmann & Benedikt Reick**
14:30	Applications of an Advanced Multiple Injection Calibration Strategy to Address Future Emission Legislation Challenges **2023-24-0081** **Felix Fellner, Christoph Kraus, Martin Härtl, Malte Jaensch,**Technichal University of Munich; **Akiyasu Miyamoto,** Hitachi Europe GmbH; **Christian Joerg,** Hitachi Astemo Europe GmbH	HIL based Real-Time Co-Simulation for BEV Fault Injection Testing **2023-24-0181** **Anja Konzept, Benedikt Reick,** Ravensburg-Weingarten University of Applied Sciences; **Igor Pintaric, Caio Osório,** Typhoon HIL
14:50	Development of a Laboratory Unit to Study Internal Injector Deposits Formation **2023-24-0078** **Mayte Pach, Henrik Hittig, Tobias Scholle,** Scania CV AB; **Henrik Kusar, Klas Engvall,** KTH Royal Institute of Technology	Trailer Electrification – A HIL Approach for MPC Powertrain Control to Ensure Driver Safety in Micromobility **2023-24-0180** **Marius Miller, Markus Pfeil,** Ravensburg-Weingarten University; **Ralph Kennel,** Technical University of Munich
15:10	SprayLet: One-Dimensional Interactive Cross-Sectionally Averaged Spray Model **2023-24-0081** **Vinaykumar Reddy Kurapati, Fabian Mauss,** Brandenburg University of Technology; **Borg Anders,** LOGE AB; **Lars Seidel,** Loge Deutschland GmbH	Holistic Process-Oriented Approach to Test Bench Control for Mobile Machines **2023-24-0177** **Stefan Herr, Simon Becker,** Karlsruhe Institute of Technology
15:30	Exploiting the potential of Large Eddy Simulation (LES) for Ducted Fuel Injection investigation in non-reacting conditions **Oral Only 23ICE-0419** **Federico Millo, Cristiano Segatori, Andrea Piano, Benedetta Peiretti Paradisi,** Politecnico di Torino; **Andrea Bianco,** Powertech Engineering SRL	Validation Configurations for the Continuous Validation of Rotors for Electric Traction Motors **Oral Only 23ICE-0370** **Adrian Braumandl, Johannes Kern, Katharina Bause, Sascha Ott,** Karlsruhe Institute of Technology
15:50	**Coffee break**	
	ICE302 - Alternative and Advanced Fuels **Chairpersons: Stefania Esposito & Sebastian Verhelst**	**ICE607 - AI and Machine Learning** **Chairpersons: Felix Leach & William Northrop**
16:20	Efficiency Optimized Engine Operation with CO2 Neutral Fuels through Thermodynamic Loss Calculation and Model-Based Fuel Detection **2023-24-0096** **Philipp Demel, Friedemar Knost, Alexander Obée, Christian Beidl**, TU Darmstadt - VKM	Battery Electric Vehicle Control Strategy for String Stability based on Deep Reinforcement Learning in V2V Driving **2023-24-0173** **Angelo Borneo, Federico Miretti, Matteo Acquarone, Daniela Misul,** Politecnico di Torino
16:40	Automated Kinetic Mechanism Evaluation for e-Fuels Using SciExpeM: The Case of Oxymethylene Ethers **2023-24-0092** **Timoteo Dinelli, Luna Pratali Maffei, Alessandro Pegurri, Amedeo Puri, Alessandro Stagni, Tiziano Faravelli,** Politecnico di Milano	Real-Time Prediction of Fuel Consumption via Recurrent Neural Network (RNN) for Monitoring, Route Planning Optimization and CO2 Reduction of Heavy-Duty Vehicles **2023-24-0175** **Alfonso Pandolfi, Pierpaolo Polverino, Cesare Pianese,** Università degli Studi di Salerno; **Ennio Andrea Adinolfi**, MinervaS/Università degli Studi di Salerno
17:00	1-D Numerical Model of a Spark Ignition Engine Fueled with Methanol for Off-Grid Charging Stations **2023-24-0098** **Diego Perrone, Teresa Castiglione, Luigi Falbo, Sergio Bova,** University of Calabria; **Clino D'Epiro,** NGV Powertrain Srl	Initial Development of a Physics-Aware Machine Learning Framework for Soot Mass Prediction in Gasoline Direct Injection Engines **2023-24-0174** **Bharat Jayaprakash, Brady Wilmer, William F. Northrop,** Univ. of Minnesota-Twin Cities
17:20		Physics-guided machine learning modeling of NOx emissions in diesel engines **Oral Only 23ICE-0291** **Abdullah Bajwa, Felix Leach, University of Oxford; Xiaohang Fang,** University of Calgary; **Martin Davy, Fengyu Zhong, Gongyi Zou,** University of Oxford
20:00	**Gala dinner**	

Thursday, 14th September

	Room Teatro	*Room Capri*
	ICE101 - 0-D and 1-D Modeling and Numerics **Chairperson: Federico Millo**	**EFC - Road Transport** **Chairperson: Alessandro D'Adamo**
9:00	Numerical Investigation of the Ignition Delay and Laminar Flame Speed for Pilot-Ignited Dual Fuel Engine Operation with Hydrogen or Methanol **2023-24-0011** **Somayeh Parsa, Sebastian Verhelst**, Ghent University	Electricity and transportation: batteries or hydrogen? …Or both **Giorgio Rizzoni,** The Ohio State University
09:20	Turbocharging Automotive Engines: A Decision-Making Approach for Optimal Turbocharger Selection **2023-24-0003** **Mohamed Amine El Hameur, Mahfoudh Cerdoun, Lyes Tarabet,** Ecole Militaire Polytechnique**; Alfredo Gimelli,** University of Naples Federico II**; Giovanni Ferrara**, University of Florence	
09:40	Comparison of Modern Powertrains Using an Energy Model Based on Well-to-Miles Analysis **2023-24-0005** **Stefania Falfari, Valerio Mariani, Gian Marco Bianchi, Giulio Cazzoli**, University of Bologna	Understanding Charge, Mass, and Heat Transfer in Fuel Cells for Transport Applications – Insights from the CAMELOT Project **Patrick Fortin,** SINTEF
10:00	Development and validation of a phenomenological model for hydrogen fuelled PFI internal combustion engines **Oral Only 23ICE-0330** **Marco Piras, Vincenzo De Bellis, Enrica Malfi,** University of Naples Federico II; **Josep Gomez-Soriano, Miguel Olcina-Girona**, Universitat Politecnica de Valencia	A comprehensive Experimental investigation on the fuel cell powertrain of a yard tractor for sustainable port handling operations **Andrea Altomonte MSc,** University of Naples "Parthenope"
10:20	Assessment of a quasi-dimensional combustion model applied to a spark-ignition premixed oxy-fuel internal combustion engine **Oral Only 23ICE-0449** **Massimiliano De Felice, Vincenzo De Bellis**, Univ of Naples Federico II; **Rodrigo Raggi, Jaime Martin**, Universitat Politècnica de València	Development of a procedure for mixture formation analysis for H2 DI ICEs **Giuseppe Anaclerio,** Politecnico Bari
10:40	**Coffee break**	
	ICENA101 - 0-D and 1-D Modeling and Numerics **Chairperson: Lorenzo Sforza**	**ICE204 - Combustion in Hydrogen Fueled Engines** **Chairpersons: Fabrice Foucher & Gilles Bruneaux**
11:10	Experimental and numerical analysis of diesel spray jets for ultra-lean combustion **Oral Only 23ICE-0545** **Alessia Gambardella, Vincenzo De Bellis**, University. of Naples Federico II	Optical Diagnostics to Study Hydrogen/Diesel Combustion with EGR in a Single Cylinder Research Engine **2023-24-0070** **Ezio Mancaruso, Salvatore Rossetti, Bianca Maria Vaglieco,** STEMS-CNR**; Roberta De Robbio,** Università Federico II di Napoli**; Fadila Maroteaux,** Université de Versailles St Quentin En Yveline
11:30	Development of a 1D Model to Predict the Conversion Efficiency of a Three-Way Catalyst for a High-Performance Spark Ignition Engine **Oral Only 23ICE-0528** **Giuseppe Castellano, Luciano Rolando, Federico Millo,** Politecnico di Torino**; Fabrizio Gullino, Roberto Tonelli**, Ferrari Spa	Overview of Hydrogen Combustion using Westport Fuel Systems' HPDI™ Technology **Oral Only 23ICE-0556** **Sandeep Munshi**, WFS Canada Inc.; **David K. Mumford, Fabien Redon**, Westport Fuel Systems
11:50	Development of a comprehensive model to predict combustion process, knock likelihood and cycle-by-cycle variability in a hydrogen-fueled internal combustion engine **Oral Only 23ICE-0546** **Federico Millo, Andrea Piano, Gianpaolo Quattrone,** Politecnico di Torino; **Francesco Pesce, Alberto Vassallo,** Punch Torino SpA; **Nicola Sacco**, PUNCH Hydrocells	Efficiency-Biased Design of an H2-Fueled Internal Combustion Engine for Heavy and Challenging Applications **2023-24-0075** **Thomas Koerfer**, FEV Group GmbH
12:10	Refinement of a phenomenological model for unburned hydrocarbons emission in ultra-lean engines **Oral Only 23ICE-0567** **Massimiliano De Felice, Enrica Malfi, Vincenzo De Bellis**, University of Naples Federico II**; Alfredo Lanotte, Gennaro Caputo**, Wartsila Italia Spa**; Alberto Cafari, Jari Hyvonen**, Wartsila Finland Oy	Challenges and Opportunities in developing a Hydrogen High Specific Power SCE in the roadmap towards zero net GHG **Oral Only 23ICE-0278** **Massimo Medda**, Ferrari Spa
12:30		Conversion of a Small Size Passenger Car to Hydrogen Fueling: Focus on Vehicle Dynamics and ECU Remapping Requirements **2023-24-0065** **Santiago Martinez, Pedro Curto,** Universidad de la República**; Simona Merola, Bianca Maria Vaglieco, Adrian Irimescu**, STEMS-CNR
12:50	**Closing Remarks** **Giorgio Rizzoni**, The Ohio State University (USA) **& Bianca Maria Vaglieco**, STEMS-CNR (Italy)	

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