3rd Conference on Sustainable Mobility

September 25-28, 2022

SEPTEMBER 25TH, 2022

18:00 – 20:00		**Registration**
19:00 – 22:00		**Welcome Cocktail @ NH Parco degli Aragonesi (Conference Venue)**

SEPTEMBER 26TH, 2022

8:30-13:00		**Registration**
9:00-9:40	**Opening Ceremony**	**Gino Bella**, *University of Rome Niccolo' Cusano* **Giorgio Rizzoni**, *The Ohio State University* **Ezio Mancaruso,** *STEMS, SAE International Naples Section*
		Alternative Powertrains & Batteries/Energy Storage Systems **Chairpersons: Pianese C.**, *University of Salerno* **& Di Ilio G.**, *University of Napoli Parthenope*
9:40-10:20		**Keynote – Giorgio Rizzoni,** *The Ohio State University* ‘‘Battery life and life estimation – physics- and data-based approaches”
10:20-10:40	**Krastev Vesselin,** *University of Rome Tor Vergata*	**2022-24-0018** On the Thermal Integration of Metal Hydrides with Phase Change Materials: Numerical Simulation Developments Towards Advanced Designs
10:40-11:00	**De Santis Michele,** *University of Rome Niccolo' Cusano*	**2022-24-0019** Vehicle to Grid system for stable microgrid operation
11:00-11:20	**Silvestri Luca,** *University of Rome Niccolo' Cusano*	**2022-24-0020** Identification of the optimal storage capacity for battery electric vehicles from a life cycle assessment perspective
11:20-11:40		**Coffee Break**
11:40-12:00	**Mulone Vincenzo,** *University of Rome Tor Vergata*	**2022-24-0003** Fuel Cell Hybrid Electric Vehicle: Driving cycle impact on control strategy design and system performances
12:00-12:20	**Lombardi Simone,** *University of Rome Niccolo' Cusano*	**2022-24-0010** Energy and Fuel Consumption Minimization for a Plug-In Fuel Cell Electric Cargo Handling Vehicle
12:20-12:40	**Villani Manfredi,** *The Ohio State University*	**2022-24-0009** Battery Selection and Optimal Energy Management for a Range-Extended Electric Delivery Truck
12:40-13:00	**Mocera F.,** *Politecnico di Torino*	**2022-24-0002** State of the art and future trends of electrification in Agricultural tractors
13:00-14:00		**Lunch**

14:00-15:40		**Registration**
		Conventional Vehicles **Chairpersons: Chiappini D.,** *University of Rome Niccolo' Cusano* **& Mulone V.**, *University of Rome Tor Vergata*
14:00-14:20	**Schwenzer C.,** *RWTH Aachen University*	**2022-24-0032** Experimental-Based Laminar Flame Speed Approximation Formulas of Efficiency-Optimized Biofuels for SI-Engine Modeling
14:20-14:40	**Duronio F.,** *Universita degli Studi dell'Aquila*	**Oral Only** ECN Spray G Injector: Combined Experimental and Numerical Investigation of Flash-Boiling Injection
14:40-15:00	**Bösenhofer M.,** *TU Wien*	**2022-24-0027** Effect of Different Diesel Fuel Nozzle Holes Geometries on Cavitation
15:00-15:20	**Brusa A.,** *University of Bologna*	**2022-24-0029** Development and Software-in-the-Loop Validation of an Artificial Neural Network-Based Engine Simulator
15:20-15:40		**Coffee Break**
15:40-16:00	**Salerno F.,** *IFS, University of Stuttgart*	**2022-24-0039** A Quasi-Dimensional Burn Rate Model for Spark-Assisted Compression Ignition (SACI) Combustion
16:00-16:20	**Golc D.,** *RWTH Aachen University*	**2022-24-0041** Simulative investigation of ion current measurement in advanced combustion control concepts for compression ignition (CI) engines
16:20-16:40	**Scrignoli F.,** *Univ. di Modena e Reggio Emilia*	**2022-24-0040** Development of a Combustion System for a New Generation of 2-Stroke SI Engines
16:40-17:00	**Zembi J., (online)** *Università degli Studi di Perugia*	**2022-24-0034** Lean Combustion Analysis of a Plasma-Assisted Ignition System in a Single Cylinder Engine fueled with E85
17:00-17:20	**Beltrami D., (online)** *University of Brescia*	**2022-24-0033** The Potential Role of Natural Gas Vehicles in the Reduction of GHG Emissions in the Italian Private Transportation Framework
20:30		**Gala Dinner @ Dimora De Mauro (Via Gesualdo Clementi 5, Catania)**

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CSM 2022

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SEPTEMBER 27TH, 2022

Alternative Powertrains & Batteries
Chairpersons: Mendecka B., *University of Rome Niccolo' Cusano* **& Krastev V.,** *University of Rome Tor Vergata*

8:30-13:00		**Registration**
09:00-09:40		**Keynote – Alberto Vassallo,** *Punch Torino* "Why HYDROGEN? The Contribution of HYDROGEN-FUELLED Internal Combustion Engines to SUSTAINABLE MOBILITY"
09:40-10:00	**Fontanesi S., (online)** *Univ. di Modena e Reggio Emilia*	**2022-24-0014** Preliminary assessment of hydrogen direct injection potentials and challenges through a joint experimental and numerical characterization of high-pressure gas jets
10:00-10:20	**Magnani M.,** *Univ. di Modena e Reggio Emilia*	**2022-24-0016** Numerical characterization of hydrogen combustion in a high-performance engine: potentials, limitations, modelling uncertainties
10:20-10:40	**Sequino L.,** *STEMS - CNR*	**2022-24-0008** Model-supported design of a range-extended electric vehicle with a hydrogen-fueled internal combustion engine
10:40-11:00	**Mancaruso E.** *STEMS - CNR*	**2022-24-0012** Hydrogen/Diesel Combustion Analysis in a Single Cylinder Research Engine
11:00-11:40		**Coffee Break**

Alternative Powertrains/EU-funded Projects Dissemination Session
Chairperson: Chiappini D., *University of Rome Niccolo' Cusano* **& Pasqualino P.,** *Consorzio SCIRE*

11:40-12:00	**Pippuri-Mäkeläinen J.,** *VTT Technical Research Centre Ltd*	**REFLECTIVE – H2020, REconFigurable Light EleCTrIc VEhicle**
12:00-12:20	**Piccinini P.,** Punch Torino	**DREEM – H2020, Designing useR centric E-kickscooters & business models for Enhancing interModality**
12:20-12:40	**Romero E.,** *Applus+ IDIADA*	**URBANIZED – H2020, modUlaR and flexible solutions for urBAN-sIzed Zero-Emissions last-mile Delivery and services vehicles**
12:40-13:00	**Martinez W.,** *KU Leuven - EnergyVille*	**POWERDRIVE – Horizon Europe, Power electronics optimisation for next generation electric vehicle components**
13:00-14:00		**Lunch**

	Alternative Powertrains & Batteries **Chairpersons: Villani M.**, *The Ohio State University* **& Di Ilio G.**, *University of Napoli Parthenope*	
14:00-14:20	**Caltabellotta S.,** *Università degli Studi di Palermo*	**2022-24-0015** Realistic steady state performance of an electric turbo-compound engine for hybrid propulsion system
14:20-14:40	**Grotti E.,** *Free University of Bozen-Bolzano*	**2022-24-0017** Realistic Operating Conditions from Vehicle Modelling: an Application to Coolant Distributor Valves
14:40-15:00	**Hemsen J.,** *RWTH Aachen University*	**2022-24-0005** A Thermal Model for the Comparison of Cooling Concepts of Synchronous Machines for Traction Applications
15:00-15:20	**Crispi M. R.,** *University of Salerno*	**2022-24-0006** A methodology for the experimental validation at the engine test bed of fuel consumption and NOx emissions reduction in a HEV
15:20-15:40	**Ellenrieder C.,** *Ravensburg-Weingarten University*	**2022-24-0007** Optimization of Water Cooling for High Power Density Electrical Machines
15:40-16:00	**Bagagiolo G.,** *STEMS - CNR*	**2022-24-0028** Barriers to Adoption of Alternative Fuels for Agricultural Machinery: A Study on a Group of Italian Farmers
16:00-16:20		**Coffee Break**
		Conventional Vehicles **Chairpersons: Di Iorio S.,** *STEMS - CNR* **& Cavina N.,** *University of Bologna*
16:20-16:40	**Irimescu A.,** *STEMS - CNR*	**2022-24-0031** Conversion of a small size passenger car to hydrogen fueling: focus on rated power and injection phasing effects
16:40-17:00	**Assandri D.,** *STEMS - CNR*	**2022-24-0035** Designing a biomethane circular supply chain for agricultural tractors engines: the TOBIAS project
17:00-17:20	**Magno A.,** *STEMS - CNR*	**2022-24-0037** The effect of ethanol and methanol blends on the performance and the emissions of a turbocharged GDI engine operating in transient condition
17:20-17:40	**Fuhrmeister J.,** *University of Kaiserslautern*	**2022-24-0030** Optimization of the DPF-Regeneration Strategy for the Use of Vegetable Oil in a Multi-Fuel-Engine Concept
17:40-18:00	**Esposito S.,** *RWTH Aachen University*	**2022-24-0038** Simulation of Gaseous Pollutant Emissions from a Spark-Ignition Engine Fuelled with a TRF Gasoline Surrogate and Methanol

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SEPTEMBER 28TH, 2022

Smart Mobility
Chairpersons: Tricomi G., *University of Messina* **& De Santis M.,** *University of Rome Niccolò Cusano*

08:30-10:00		**Registration**
09:10-09:40		**Cristiana Carratelli,** *Senior Corp & Gov Marketing Manager, SAE International Italy Dealer, Deanet Srl* "SAE Mobilus: Sustainable Mobility Solutions"
09:40-10:20		**Keynote – Fabrice Foucher,** *University of Orléans* "Hydrogen Internal Combustion Engine – Zero CO2 emission powertrain for sustainable transport and mobility"
10:20-10:40	**Tresca L.,** *Politecnico di Torino*	**Oral Only** Eco-driving Optimization: an Approach Based on Dynamic Programming and Vehicle Connectivity
10:40-11:00	**Mulone V.,** *University of Rome Tor Vergata*	**2022-24-0023** Assessment of hybrid commercial fleet performance: effects of advanced control strategies for different geographical sites
11:00-11:20	**De Angelis L.,** *University of Rome Tor Vergata*	**2022-24-0022** The LCA Analysis Applied to Urban Mobility
11:20-11:40		**Coffee Break**
11:40-12:00	**Han J., (online)** *Chongqing University*	**2022-24-0021** Hierarchical Eco-Driving Control of Connected Hybrid Electric Vehicles Based on Dynamic Traffic Flow Prediction
12:00-12:20	**Delle Site P.,** *University of Rome Niccolo' Cusano*	**2022-24-0024** An economic evaluation of the electric car incentive programme in Italy
12:20-12:40	**Martelli S.,** *Politecnico di Torino*	**2022-24-0025** Co-Simulation of a Specialized Tractor for Autonomous Driving in Orchards
12:40-13:00	**Tricomi G.,** *University of Messina*	**2022-24-0026** A Map-Driven Automatic Transmission for Selective Emissions Reduction in ICE Vehicles
13:00		**Closing Ceremony**