

76° CONGRESSO NAZIONALE ATI Roma Web Edition 15/17 settembre 2021

Programma del 16 settembre

SESSIONE 1 - Chairman: Roberto De Lieto Vollaro, Francesco Asdrubali

Orario	Settore	Titolo	Relatore
9.00	Efficienza energetica negli edifici	A methodological approach for a home occupants centered web tool to support buildings energy retrofitting process	Stefano Pili
9.10		A methodological approach for energy demand assessment: theoretical analysis on solar thermal collector energy contribution	Domenico Palladino
9.20		A multilayer panel in cork and natural phase change materials: thermal and energy analysis	Nicoletta Matera
9.30		A Parametric Study of the Implementation of Green Roofs in Buildings to Improve Energy Building Performance in Tropical Climate	Miguel Chen Austin
9.40		Application of hourly dynamic method for nZEB buildings in Italian context: analysis and comparisons in national calculation procedure framework	Domenico Palladino
9.50		Energy optimization analysis of archetype public buildings - Results from SHERPA European Project	Tullio de Rubeis
10.00		Estimation of the Radiative Sky Cooling Potential through Meteorological Data: A Case Study in Tropical Climate	Irvin Merchant
10.10		Evaluation of Biomimicry-based Strategies to Improve Exterior Environmental parameters: A Numerical Study at Urban Scale in a Tropical Climate	Kevin Araque
10.20		Halving of consumption and energy efficiency of the Mario Pagano National boarding school in Campobasso	GIADA ROMANO
10.30		How pandemic affects occupants' buildings perception: questionnaires investigation and preliminary results	Iole Nardi
10.40		Influence of environmental boundary conditions on convective heat transfer coefficients of wall internal surface	Tullio de Rubeis
10.50		Refurbishment and electrification in the hotel sector: four hotels in the historic centre of Rome	GIADA ROMANO

11.00	THE CHOICE OF APPROPRIATE GENERATOR SYSTEMS TO ENHANCE THE RENEWABLE ENERGY SHARE IN BUILDINGS. A COMPARISON BETWEEN PV-ASSISTED HEAT PUMPS AND BIOMASS BOILERS.	Roberto Bruno
11.10	Thermal enhancement of windows performance by means of innovative technologies.	Alessandro Cannavale
11.20	Tool for supporting local energy strategies: forecasting energy plans with Artificial Neural Network in Umbria Region	Domenico Palladino
11.30	Towards Zero Energy Districts developments based on Bioclimatic strategies: A Numerical Study in a Developing Country	Lisette De León

SESSIONE 2 - Chairman: Dario Ambrosini

Orario	Settore	Titolo	Relatore
11.40	Innovazione nei temi della trasmissione del calore	Design and development of three test facilities to evaluate heat transfer performances of advanced and low cost materials and coatings for geothermal application	Claretta Tempesti
11.50		Lithium batteries cooling by phase change material partially filled with metal foam	Oronzio Manca
12.00		Numerical investigation on latent thermal energy storage in shell and corrugated internal tube with PCM and metal foam	Renato Elpidio Plomitallo
12.10		THE HYBRID METHOD FOR THE PLATE-FINDED TUBE EVAPORATOR DESIGN PROCESS	Silvia Macchitella

SESSIONE 3 - Chairman: Giorgio Buonanno

Orario	Settore	Titolo	Relatore
12.20	Misure e monitoraggio di sistemi e impianti e certificazioni	Development of an experimental apparatus and a data analysis protocol for the test of hydrogen volume and flow meters in controlled environmental conditions	Francesco Battistella
12.30		Field study on heat pump monitoring: challenges and opportunities	Iole Nardi
12.40		RECOGNITION OF TWO PHASE FLOW PATTERN INSIDE EVAPORATOR TUBES	GIUSEPPE LANGELLA
12.50		The experience on a sport centre pilot plant with solar assisted heat pump and a look forward for new control strategies and technology upgrade	Alessandro Cavalletti

SESSIONE 4 - Chairman: Cristina Cornaro, Sandra Corasaniti

Orario	Settore	Titolo	Relatore
14.00	Simulazioni dinamiche degli edifici	Energy, environmental and economic analysis of electric vapour compression and gas driven absorption heat pumps for single-family houses	Giorgio Villa
14.10		Evaluation of the energy performance of Zero Energy residential Buildings: complexity of dynamic simulations and results variability.	Silvia Di Turi
14.20		The application of the EN ISO 52016 standard and its Italian National Annex to assess the heating and cooling needs of a reference office building	Franz Bianco Mauthe Degerfeld
14.30		Use of Land Surface Temperature Estimation with Geographical Information Tools for Validation of Numerical Microclimate Studies at Urban Scale	Mileyka Bustamante

SESSIONE 5 - Chairman: Gianluigi Lobasso

Orario	Settore	Titolo	Relatore
14.40	Smart Energy Systems	Demand response strategies in residential buildings clusters to limit HVAC peak demand	Alice Mugnini
14.50		Digital Twin (DT) in Smart Energy Systems - Systematic Literature Review of DT as a growing solution for Energy Internet of the Things (EIoT)	Ali AGHAZADEH ARDEBILI
15.00		How residential CHPs could be integrated in renewable energy communities' incentive schemes	Matteo Sforzini

SESSIONE 6 - Chairman: Mauro Scungio, Marco Barbanera

Orario	Settore	Titolo	Relatore
15.10	Sostenibilità ambientale e IAQ	Characterization of aerosol and assessment of the risk of transmission of SARS-COV-2 VIRUS in a natural thermal cave	Giulia Parlani
15.20		Indoor environmental quality of the Valli Theatre: outcomes on sound, light and thermo-hygrometry	Francesca Merli
15.30		Influences of high-reflective mulching membrane coupled with a drip sub-irrigation system on temperature and humidity of the soil	Alessia Di Giuseppe
15.40		Preliminary environmental and economic assessment of polyurethane foam produced by microwave-assisted liquefaction of riparian shrubs	Alessandro Cardarelli
15.50		Ventilation system operation to reopen schools safely in time of pandemics	Luca Stabile

SESSIONE 7 - Chairman: Luca Stabile

Orario	Settore	Titolo	Relatore
16.00	Trasformazione dell'energia nell'economia circolare	Energy profiling of end-users in service and industry sectors with use of Complex Network Analysis	Rosario Portera
16.10		Hydrogen and power production from citrus peel gasification: a sensitivity analysis via process simulation	Mauro Prestipino
16.20		Urban context and neighbouring lands: how reforestation could have a role in the implementation of Sustainable Energy and Climate Action Plans	Luca Di Paolo

Programma del 17 settembre

SESSIONE 1 - Aula A - Chairman: Roberto Cipollone, Antonio Ficarella, Laura Tribioli, Daniele Chiappini, Paolo Venturini

Orario	Settore	Titolo	Relatore
9.00	Sistemi di propulsione per la mobilità sostenibile	A numerical exploration of engine combustion using Toluene Reference Fuel and Hydrogen mixtures	Alessio Barbato
9.10		A 3D-CFD numerical framework for the simulation of both light- and heavy-duty Diesel injectors	Simone Sparacino
9.20		3D CFD simulation of a gaseous fuel injection in a hydrogen-fueled internal combustion engine	Alessio Barbato
9.30		An optimized fuzzy logic for the energy management of a hybrid electric air-taxi	Teresa Donateo
9.40		Application of a Ageing Model to a Hydrogen-Fueled PEM Fuel Cell	Matteo Riccardi
9.50		Development of a 0D multi-zone model for fast and accurate prediction of homogeneous charge compression ignition (HCCI) engine	Giovanni Fasulo
10.00		Effect of Lagrangian-phase Modelling on Charge Stratification and Spatial Distribution of Threshold Soot Index for Toluene Reference Fuel Surrogates	Valentina Pessina
10.10		Evaluation of a novel strategy, based in Coolant Flow Rate Control, for avoiding Knock in a SI engine	Luigi Falbo
10.20		Feasibility Analysis of an Innovative Naval On-board Power-Train System with Hydrogen-Based PEMFC Technology	SIMONA DI MICCO
10.30		HYDROGEN REFUELING STATION COST MODEL APPLIED TO 5 REAL CASE STUDIES	Enrico Bocci
10.40		Jet Ignition in Small Two-Stroke Engines: An Experimental Overview of Benefits and Challenges	Lorenzo Bosi
10.50		LPT (Local Public Transport) electric buses: innovative solutions to reduce the energy absorption of auxiliaries	Fabrizio Zuccari
11.00		Non-catalytic NOx reduction for marine Diesel engine: an experimental approach	Gianluca Pasini

11.10	Numerical comparison between conventional and interdigitated flow fields in Proton Exchange Membrane Fuel Cells (PEMFCs)	Giuseppe Corda
11.20	On the optimal design of sliding rotary vane pump for heavy-duty engine cooling systems	Fabio Fatigati
11.30	On the use of tapered channels gas distributors to promote convection in PEM Fuel Cells	ALESSANDRO D'ADAMO
11.40	Preliminary study on the influence of Octane Sensitivity on knock in a GDI engine.	FRANCESCO CICCI
11.50	Streamers Variability Investigation of a Radio-Frequency Corona Discharge in an Optical Access Engine at Different Speeds and Loads	Roberto Martinelli
12.00	The potential of hydrogen addition to natural gas or ammonia as a solution towards low- or zero-carbon fuel for the supply of a small turbocharged SI engine	Alfredo Lanotte
12.10	Thermal management opportunity on Lubricant Oil to reduce Fuel Consumption and Emissions of a Light-Duty Diesel Engine	Davide Di Battista
12.20	Triple-screw pumps for ICE cooling systems in the transportation sector	Giammarco Di Giovine

SESSIONE 2 - Aula A - Chairman: Giuseppe Franchini, Giampaolo Manzolini, Paolo Iora, Raffaello Cozzolino, Barbara Mendecka

Orario	Settore	Titolo	Relatore
13.30	Sistemi per la generazione sostenibile dell'energia	A Double Multiple Stream Tube (DMST) routine for site assessment to select efficient turbine aspect ratios and solidities in real marine environments	MICOL PUCCI
13.40		Combined Heat and Power generation exploiting the biogas production from urban wastewaters treatment: the Genoa case study	Federico Silenzi
13.50		Development and assessment of a method to determine the angle of attack on an operating wind turbine by matching onboard pressure measurements with panel method simulations	Francesco Papi
14.00		Development and Validation of an Advanced Actuator Line Model for Wind Turbines	Pier Francesco Melani
14.10		Effect of hydrogen addition in diesel/natural gas dual-fuel combustion with late injection	Antonio Caricato
14.20		Experimental Assessment of a Multi-Variable Control Strategy of a Micro-Cogeneration Solar-ORC Plant for Domestic Application	Diego Vittorini
14.30		Experimental investigation on the potential of the Feedback Fx-LMS Active Noise Control technology for use in industrial generator sets	Marco Ciampolini
14.40		Injection of CO ₂ /N ₂ gaseous mixtures into gas hydrates to contemporary perform CH ₄ recovery and CO ₂ storage.	Alberto Gambelli
14.50		Investigation of CO ₂ mixtures to overcome the limits of sCO ₂ cycles	Ettore Morosini
15.00		Performance Analysis of a Biodiesel-Fired Engine for Cogeneration	Luigi Falbo
15.10		Performance analysis of a solar-only combined power plant based on a closed Brayton cycle and an Organic Rankine Cycle	Francesco Rovense
15.20		Performance Assessment of Solar Cooling Systems with Energy Storage	giovanni brumana
15.30		Power to Methane technologies through renewable H ₂ and CO ₂ from biogas: the case of Sardinia	Giulia Concas
15.40		Simulation of the HiPowAR power generation system for steam-nitrogen expansion after ammonia oxidation in a high-pressure oxygen membrane reactor	Alberto Cammarata
15.50		Some Design Guidelines to Adapt a Darrieus Vertical Axis Turbine for Use in Hydrokinetic Applications	Pier Francesco Melani

16.00	Technical Economic and Environmental analysis of Chemical Looping versus oxyfuel combustion for NGCC power plant	Pietro Bartocci
16.10	The potential of Building Integrated Photovoltaic (BIPV) systems for reducing the energetic impact of Italian supermarkets	Giacomo Cillari
16.20	The potential of CSP plants for remote communities in the MENA region	Elisa Ghirardi
16.30	Thermo-economic analysis of a sCO ₂ -based waste heat recovery system	Antonio Giuffrida

SESSIONE 1 - Aula B - Chairman: Giulio Guandalini, Linda Barelli, Paolo Colbertaino

Orario	Settore	Titolo	Relatore
9.00	Accumulo dell'energia e integrazione delle reti energetiche	Analysis of the Impact of Combined Cycle in the energy transition	Alessandro Sorce
9.10		Comparison of enthalpy-porosity and lattice Boltzmann-phase field techniques for the simulation of the heat transfer and melting processes in LHTES devices.	Vesselin Krassimirov Krastev
9.20		Development of benchmark scenarios for sector coupling in the Italian national energy system for 100% RES supply to power and mobility	Paolo Colbertaino
9.30		Impact of hydrogen injection on thermophysical properties and measurement reliability in natural gas networks	Linda Moretti
9.40		Methodology and Simulation of Electrical Grid Peak Shaving Strategy based on Photovoltaic and Storage Optimization: an Italian Residential Sector Case Study	Jacopo Cimaglia
9.50		Multi-objective sensitive analysis of shell-and-tube LHTES performance	Francesco Fornarelli
10.00		Sizing and operation of energy storage by Power-to-Gas and Underwater Compressed Air systems applied to offshore wind power generation	Giulio Guandalini

SESSIONE 2 - Aula B - Chairman: Massimo Rundo, Barbara Zardin, Emma Frosina

Orario	Settore	Titolo	Relatore
10.10	Oleodinamica e pneumatica	Application of modelling approaches of twin-screw compressors: thermodynamic investigation and reduced-order model identification	Edoardo Di Mattia
10.20		CFD Simulation of a Post-Compensated Load Sensing Directional Control Valve	Paola Fresia
10.30		Dynamic behaviour and stability analysis of a compensated aerostatic pad	Andrea Trivella
10.40		Excavator hydraulic circuit solution to reduce dissipation and fuel consumption	FABIO SCOLARI
10.50		Lumped parameter model of vane pumps developed in OpenModelica environment.	barbara zardin
11.00		Modeling the motion of a Taylor bubble in a microchannel through a shear-thinning fluid	Andrea Aquino
11.10		Numerical Modelling and Experimental Validation of Twin-Screw Pumps Based on Computational Fluid Dynamics using SCORG and SIMERICS MP+	Pasquale Borriello
11.20		Servovalves actuated by piezo-electric actuators: a review	Paolo Tamburrano
11.30		Simulation of a high frequency on/off valve actuated by a piezo-ring stack for digital hydraulics	Paolo Tamburrano
11.40		Study and optimization of a parallel hydraulic hybrid system for heavy vehicles.	Camilla Di Lorenzo

SESSIONE 3 - Aula B - Chairman: Massimo Masi, Giovanni Delibra

Orario	Settore	Titolo	Relatore
11.50	Turbomacchine	A geometric study of different curves for the rotor profiles of a twin-screw compressor	Antonio Giuffrida
12.00		A strategy for the robust forecasting of gas turbine health subjected to fouling	Riccardo Friso
12.10		An engineering approach for the fast simulation of radial inflow turbines with vaneless spiral casing by single-channel CFD models	Piero Danieli
12.20		ANALYSIS OF THE PARTIALLY PREMIXED COMBUSTION IN A LAB-SCALE SWIRL-STABILIZED BURNER FUELED BY A METHANE-HYDROGEN MIXTURE	Vito Ceglie
12.30		Design, optimization, and testing of a high-speed centrifugal pump for motorsport application	Luigi Mariani
12.40		Detection of vaneless diffuser rotating stall by means of dynamic pressure sensors and acoustic measurements	Lorenzo Bosi
12.50		Evaluation of water washing efficiency and erosion risk in an axial compressor for different water injection conditions	Giuliano Agati
14.00		Experimental analysis of the unsteady flow inside a Wells turbine	Fabio Licheri
14.10		FAILURES AND RELIABILITY IN HAWTs OPERATING IN MOUNTAINOUS AREAS, OPEN SEA AND IN HARSCH CLIMATE SITES	Giovanni Maria De Pratti
14.20		Flame shape modification in a lean premixed burner due to hydrogen enrichment	Giovanni Filomeno
14.30		Measurement of GT exhaust gas temperature by acoustic pyrometry: preliminary error investigation	Lorenzo Ferrari
14.40		Multi-Agent Fuzzy Logic Controller applied to One Lever Variable Pitch Turbo-prop Aircraft	Lorenzo Dambrosio
14.50		NEW ROTOR BLADE PROFILES PERFORMANCE DECAY IN HORIZONTAL AXIS WIND TURBINES OPERATING IN AGGRESSIVE ENVIRONMENT	Giovanni Maria De Pratti
15.00		Off-design modelling of ORC turbines for geothermal application	Pietro Ungar
15.10		Off-line washing effectiveness on a multistage axial compressor	Alessio Suman
15.20		Prognostic techniques for aeroengine health assessment and Remaining Useful Life estimation	Ludovica Spada Chiodo

Disponibili anche nell'area riservata

Settore	Titolo	Autore
Efficienza energetica negli edifici	Achieving near Zero Energy Building in Albania: an Approach for the Retrofit of a Public School Building	lorenzo belussi
Sostenibilità ambientale e IAQ	Application of a completely organic and bio-degradable sugar-based insulating coating to vine shoots, to prevent late frost damages	Alessia Di Giuseppe
	Assessment of Indoor Environmental Quality in schools by combining survey and modelling: a case study in Albania.	Francesco Salamone
	Changing commuters' mobility behaviors of university campuses: environmental and energy comparisons	Laura Cirrincione
	Visually low impacting methods for the measurement of parameters related to IAQ risk indicators in exhibition halls	Laura Cirrincione
Sistemi di propulsione per la mobilità sostenibile	Impact on the environment and on human health of internal combustion, hybrid and battery electric powered vehicles in a life cycle perspective	Francesco Di Maria
	Modeling of an Organic Rankine Cycle Waste Heat Recovery system for automotive engine applications	Giovanni Giardiello
	Performance and Emissions Comparison between Biomethane and Natural Gas Fuel in Passenger Vehicles: results of the second testing campaign	Fabio Cignini
Sistemi per la generazione sostenibile dell'energia	Exploitation assessment of geothermal energy from African Great Rift Valley	Claudio Zuffi
	Investigation of the wake energy recovery of cross-flow turbines in paired configuration by means of 3D-CFD and analysis of the streamwise momentum budget	Stefania Zanforlin
	Modeling and Analysis of a Micro Gas Turbine Fuelled with Hydrogen and Natural Gas Blends	SHAHROKH BARATI
	Study of the integration of a supersonic impulse turbine in a NH ₃ /H ₂ O absorption heat pump for combined cooling and power production from a low temperature heat source.	Simone Braccio
Turbomacchine	Assessment of a hybrid propulsion system for short-mid range application with a low-order code	Alberto Amerini