ThermaEComp2024

Sixth International Conference on Computational Methods for Thermal and Energy Problems
September 9-11, 2024, Budva, Montenegro

Conference Program

Sunday, September 8, 2024 - 19:00-21:00

Welcome cocktail - Venue: Hotel Mediteran

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Monday, September 9, 2024 — Morning

08:15-09:15	**Participants Registration**
09:15-10:00	**ThermaEComp 2024 opening ceremony - Venue: Congress Centre**
10:00-10:50	Plenary Lecture: **Hybrid Artificial Intelligence for the Decision Making in Critical Urban Systems** Speaker: **Francisco Chinesta**, *Arts et Metiers Institute of Technology - Paris, France* Chairman: Igor Vušanović Venue: Congress Centre
10:50-11:20	**Coffee Break**
11:20-12:00	Keynote Lecture: **Modelling of Sorption based Heating and Cooling Systems** Speaker: **Pradip Dutta**, *Indian Institute of Science, Bangalore* Chairman: Sara Rainieri Venue: Amphora Hall

12:10-12:40	**MS-01/ Thermoacoustics for energy conversion system** Chairman: Nicola Massarotti Venue: Amphora hall	**Phase Change Problems** Chairman: Giulio Croce Venue: Galerija
12:10-12:25	POROUS MEDIA CORRELATIONS FOR THERMOACOUSTIC STACKS (Presenter: Armando Di Meglio)	CYLINDRICAL BATTERY THERMAL MANAGEMENT WITH DIFFERENT PHASE CHANGE MATERIAL SOLUTIONS (Presenter: Francesco Piccirillo)
12:25-12:40	ANALYSIS OF THERMOACOUSTIC INSTABILITY THROUGH A MACROSCOPIC MODELLING OF THE STACK (Presenter: Elio Di Giulio)	EFFICIENT EXPLCIT TIME STEPPING ENTHALPY METHODS FOR PHASE CHANGE PROBLEMS (Presenter: Igor Vušanović)

12:40-14:10	**Lunch**

Monday, September 9, 2024   **Afternoon**

14:10-14:50	Keynote Lecture: **The role of CFD in improving indoor environments air quality, comfort and safety** Speaker: **Fausto Arpino**, *University of Cassino and Southern Lazio, Italy* Chairman: J. C. Mandal (TBC) Venue: Congress Centre

	MS-01/ Thermoacoustics for energy conversion system Chairman: Armando Di Meglio and Elio Di Giulio Venue: Amphora hall	**Phase Change Problems** Chairman: Carlo Nonino Venue: Galerija
14:50-16:00		
14:50-15:05	COMPACT THERMOACOUSTIC COOLER (TACOT): DESIGN AND EXPERIMENTAL QUALIFICATION (Presenter: Hélène Bailliet)	HIGH FIDELITY AND SIMPLIFIED MODELING OF HYDROPHOBIC SURFACES PERFORMANCES FOR ANTI-ICING APPLICATIONS (Presenter: Giulio Croce)
15:05-15:20	COMPACT THERMOACOUSTIC COOLER (TACOT): NUMERICAL APPROACH (Presenter: Carles Diana Baltean)	NUMERICAL ANALYSES OF PASSIVE COOLING OF PV PANELS USING PCM (Presenter: Boris Hrncic)
15:20-15:35		SENSITIVITY STUDY IN SIMULATIONS OF MELTING IN A CYLINDRICAL GEOMETRY (Presenter: Anthony G. Straatman)
15:35-16:00	**Coffee Break**	
16:00-20:30	**Visit and dinner to Lake Skadar (subject to weather conditions)**	

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Tuesday, September 10, 2024   **Morning**

Time		
09:00-09:50	Plenary Lecture: **Underground coal gasification** Speaker: **Hywel Thomas** *Swansea University, Cardiff University - UK* Chairman: Perumal Nithiarasu Venue: Congress Centre	
09:50-10:30	Keynote Lecture: **Enhancing heat exchanger performance: integrating numerical modeling with experimental studies for optimization approaches** Speaker: **Sara Rainieri**, *University of Parma, Italy* Chairman: Carlo Nonino Venue: Amphora Hall	
10:30-11:00	**Heat exchangers and Micro- Heat Transport** Chairman: Ghalib Kahwaji Venue: Amphora Hall	**Numerical Methods** Chairman: Igor Vušanović Venue: Galerija
10:30-10:45	OPTIMIZATION OF COLBURN AND FANNING FRICTION FACTORS IN AN OFFSET STRIP PLATE-FIN HEAT EXCHANGER USING GENETIC ALGORITHM (Presenter: Vinay Pratap Singh Negi)	ALL MACH NUMBER TWO-PHASE RIEMANN SOLVER FOR COMPRESSIBLE FLOWS BASED ON SIX-EQUATION MODEL (Presenter: Ghanshyam Bharate)
10:45-11:00	A POROUS-MEDIUM APPROACH FOR THE THERMAL ANALYSIS OF MICROCHANNEL HEAT SINKS (Presenter: Carlo Nonino)	AN ELECTRONEUTRALITY-PRESERVING APPROACH FOR MULTI-IONIC TRANSPORT USING FINITE ELEMENT METHODS APPLIED TO THE ELECTROLYTIC NEUTRAL PICKLING OF STAINLESS STEEL (Presenter: Alvaro Bossio)
11:00-11:30	**Coffee Break**	
11:30-12:45	**Energy related problems** Chairman: Laura Vanoli Venue: Amphora Hall	**Numerical Methods** Chairman: Fausto Arpino Venue: Galerija
11:30-11:45	ENERGY RETROFIT IMPACT IN EUROPEAN CONTAINER HOUSES: A SIMULATION STUDY (Presenter: Davide Maria Laudiero)	CVFEM SOLUTION FOR THE VORTICITY-STREAM FUNCTION FORMULATION: MATLAB IMPLEMENTATION FOR LID DRIVEN CAVITY FLOW (Presenter: Esad Tombarević)
11:45-12:00	HARNESSING WASTE HEAT AND SOLAR THERMAL INTEGRATION FOR SUSTAINABLE BREWERY COOLING: A CASE STUDY APPROACH (Presenter: Musannif Shah)	EXPERIMENTAL AND NUMERICAL ANALYSIS OF A SIDE-MIRROR MODEL THROUGH PTV AND CFD TECHNIQUE (Presenter: Christian Canale)
12:00-12:15	INVESTIGATION OF MULTIPLE ORC PLANT CONFIGURATIONS FOR WASTE HEAT STREAM RECOVERY (Presenter: Saif Serag)	HEAT CONDUCTION SIMULATION VIA THE MESHLESS FRAGILE POINTS METHOD (FPM) AND VARIOUS EXPLICIT/ IMPLICIT ODE NUMERICAL SOLVERS (Presenter: Rade Grujičić)
12:15-12:30	LIFE CYCLE BASED COMPARISON OF DIFFERENT SOLUTIONS FOR URBAN PASSENGERS' TRANSPORTATION (Presenter: Remo Santagata)	MODELING OF THERMAL COMFORT CONDITIONS IN A TRAIN CABIN (Presenter: Reza Hamidi Jahromi)
12:30-12:45	PREDICTION OF CO_2 EMISSIONS INSIDE A BUILBING WITH MACHINE LEARNING BASED ON EXPERIMENTAL DATA (Presenter: Paolo Valdiserri)	CFD INVESTIGATION OF HEAT AND MASS TRANSPORT IN SOLID OXIDE FUEL CELLS (Presenter: Giorgio Grossi)
12:45-14:20	**Lunch**	

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Tuesday, September 10, 2024 — Afternoon

Time		
14:20-15:00	Keynote Lecture: **Applying thermal computational methodologies for the modeling of carbon mineralization** Speaker: **Vaughan Voller**, *University of Minnesota, USA* Chairman: Igor Vušanović Venue: Amphora Hall	
15:00-17:00	**MS-02: Geothermal Energy, a sustainable future for heating and cooling** Chairman: Lazaros Aresti Venue: Amphora Hall	**MS-03: Digital twinning of thermal and energy systems** Chairman: Perumal Nithiarasu Venue: Galerija
15:00-15:15	FOUNDATION SLABS AS AN ENERGY GEO-STRUCTURE IN A MODERATE CLIMATE (Presenter: Aresti Lazaros)	DIGITAL TWINNING OF A CONTAINER HOUSE FOR CONTROLLING AND OPTIMIZING HVAC ENERGY CONSUMPTION (Presenter: Armando Di Meglio)
15:15-15:30	DESIGN OPTIMIZATION AND PERFORMANCE ADVANCEMENT OF GROUND-COUPLED HEAT EXCHANGER (Presenter: Ghalib Kahwaji)	GEOGRID VIEWER FOR SUSTAINABLE EXPLOITATION OF GEOTHERMAL DIGITAL TWINS (Presenter: Fawad Ahmed)
15:30-16:00	**Coffee Break**	
16:00-16:15	EXPLORING A NOVEL GEO-EXCHANGE SYSTEM ON ISCHIA ISLAND, SOUTHERN ITALY AN EXPERIMENTAL STUDY (Presenter: Vincenzo Guida)	DIGITAL TWINNING USING NOVEL NONLINEAR FINITE-ELEMENT APPROACH FOR SPARSE-DATA SOLUTION RECONSTRUCTION (Presenter: Wiera Bielajewa)
16:15-16:30	COMPARISON OF ANALYTICAL MODELS FOR GROUND HEAT EXCHANGERS (Presenter: Paul Christodoulides)	SOLUTION RECONSTRUCTION OF HIVE SAMPLE USING PHYSICS-INFORMED NEURAL NETWORKS (Presenter: Perumal Nithiarasu)
16:30-16:45	MODELING TEMPERATURE DISTRIBUTION IN DIFFERENT GROUTING MATERIALS FOR GROUND SOURCE HEAT PUMPS (Presenter: Fawad Ahmed)	THERMAL MANAGEMENT SYSTEM OF RAILWAY POWER ELECTRONICS THROUGH A DIGITAL TWIN OPTIMIZED VIA THE NEW REFINE ALGORITHM (Presenter: Raffaele De Rosa)

19:00	**Conference social dinner - Venue: Hotel Mediteran**

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Wednesday, 11 September 2024   Morning

Time	Session
09:00-09:30	Plenary Lecture: **Nonlinear Transport Phenomena Analysis with Unified Integral Transforms** Speaker: **Renato M. Cotta**, *Arts et Metiers Institute of Technology - Paris, France* Chairman: Nicola Massarotti Venue: Congress Centre
09:30-10:10	Keynote Lecture: **Solar PV systems with enhanced passive cooling and ventilation** Speaker: **Victoria Timchenko**, *University of New South Wales, Sidney, Australia* Chairman: Vaughan Voller (TBC) Venue: Congress Centre
10:10-10:30	**Coffee Break**
10:30-11:10	**Conduction, convection and radiation** Chairman: Esad Tombarević Venue: Congress Centre
10:30-10:45	DESIGNING A COMMERCIAL COOKING OVEN USING GAS FUELS BY ADAPTIVE COMBUSTION APPROACH (Presenter: Timur Remzi)
10:45-11:00	NUMERICAL SIMULATION OF CHANGE OF "DIFFUSION – CONVECTION" MODES IN ISOTHERMAL TERNARY MIXTURES BASED ON LATTICE BOLTZMANN EQUATIONS (Presenter: Vladimir Kossov)
11:00-11:15	ON THE NUMERICAL APPROACH FOR THERMAL EFFECTS IN TUNNEL FIRES (Presenter: Milan Sekularac)
11:20-11:50	**Conference closing remarks - Igor Vušanović**