ECOS2023
LAS PALMAS DE
GRAN CANARIA SPAIN

ECOS 2023 will take place
in the week June 25 - 30, 2023
at the Auditorio Alfredo Kraus,
in Las Palmas de Gran Canaria, Spain

36TH INTERNATIONAL
CONFERENCE ON EFFICIENCY,
COST, OPTIMIZATION,
SIMULATION AND
ENVIRONMENTAL IMPACT
OF ENERGY SYSTEMS

TUESDAY MORNING　　POSTER EXPOSITION SESSION I: 10:20-11:00

Room: San Borondón. A. BASIC AND APPLIED THERMODYNAMICS

Presenter	ID	Title
Fernando Varela, Susana Sánchez y Javier Rodríguez	4c47	A complete model for non-strictly incompressible substances
Eduardo I. Concepcºión, *Alejandro Moreau*, José J. Segovia, Yisel Pérez, Juan D. Arroyave, *M. Carmen Martín*	f563	A comparative study of thermophysical properties of amine aqueous solutions for CO_2 mitigation

Room: San Borondón. B. EXERGY-BASED ANALYSIS: APPLICATIONS AND TEACHING IN ACADEMIA

Presenter	ID	Title
Hafiz Ali Muhammad, Mujahid Naseem, Su Lim, Young Duk Lee, Tatiana Morozuk and *Namin Son*	36b7	Exergoenvironmental analysis of solid-oxide fuel-cell-based cogeneration system

Room: San Borondón. C. HEAT AND MASS TRANSFER

Presenter	ID	Title
Stanisław Głuch, Michał Pysz, Dariusz Mikielewicz	ab42	Flow maps and flow patterns of R1233zd(E) in a circular minichannel at low, medium and high values of saturation pressure
Elisa Carvajal-Trujillo, Francisco Jiménez Espadafor Aguilar, Ricardo Chacartegui-Ramírez	e05a	An IR-based methodology for indirect measurement of average inner temperatures
João Silva Pereira, *José B. Ribeiro*	7562	Direct vaporization ORC-evaporator heat transfer model for thermal degradation risk assessment
Ana Tejero-González, Asmae Boubkari, Mercedes Simón-Caicoya, Eric A. Sánchez-Noriega and Manuel Andrés-Chicote	716f	Performance comparison of alternative PVC evaporative cooling pads to conventional corrugated cellulose
Ana Tejero-González, Manuel Andrés-Chicote Manuel, Eloy Velasco-Gómez, Sampath Suranjan Salins	71F0	Application feasibility of low temperature cooling tower for high-temperature buildings to daytime ventilation

Room: San Borondón. D. COMPUTATIONAL THERMO-FLUID DYNAMICS (CFD)

Presenter	ID	Title
Francesco De Vanna, **Alberto Benato,** Giovanna Cavazzini	6edc	Virtual design of micro-hydro vortex induced vibrating devices
Piotr Łapka, Juliusz Wachnicki	5c6e	Improvement and optimization of the convective heat transfer in the polymer pipes with internal surface modifications
Francesco, **Alberto Benato**, Matteo Ballan Anna Stoppato	26a9	CFD-driven optimization of a Venturi tube for wastewater treatment applications
Marcin Sosnowski, Jaroslaw Krzywanski, Karolina Grabowska, Anna Zylka, Anna Kulakowska, Dorian Skrobek, Marcin Dyner, Waqar Muhammad Ashraf, Radomír Ščurek	9db2	Heat and Mass Transfer Analysis within a Disc Shaped Fluidized Sorption Reactor
Mateusz Młynarczyk, Piotr Łapka, Natalia Mikos-Nuszkiewicz and Piotr Furmański	1d08	Concept of the non-equilibrium multi dimensional model of the charging/discharging low-temperature thermochemical storage unit
Piotr Krawczyk, Michalina Kurkus-Gruszecka, Aleksandra Dzido and Marcin Wilczyński	d268	Numerical analysis of design and operational parameters of low power pellet burners

Room: San Borondón. E. POWER GENERATION AND COMBINED HEAT AND POWER (CHP) PLANTS

Presenter	ID	Title
Panagiotis Lykas, **Christina Antonopoulou**, Apostolos Gkountas, Konstantinos Atsonios, Grigorios Itskos, Nikolaos Nikolopoulos, Panagiotis Grammelis, Dimitrios Manolakos and Panteleimon Bakalis	fe69	Thermodynamic, and economic performance of novel ORC designs powered by low-grade waste heat
Márcio Santos, **Bernardo Almeida**, Jorge André, Ricardo Mendes and José B. Ribeiro	9e35	Analysis of an electrical energy production system from solar energy using a microscale CSP and ORC
Georgios Verykokkos, Efstratios Varvagiannis, **Konstantinos Braimakis**, Sotirios Karellas	867f	Dynamic modelling of a vessel waste heat recovery ORC with a recuperator for electricity and combined heat and power production
DukYongKwon, **Mathias Hofmann**	2200	Energy system optimization towards a fossil-free power plant portfolio
Adham M Abdelhalim, **Andrés Meana-Fernández**, Ines Suarez-Ramon	0578	Integration of solar field into a combined cycle power plant for fuel saving in insular subtropical climates

Room: San Borondón. F. REFRIGERATION AND HEAT PUMPS

Presenter	ID	Title
Ryszard Buchalik, Grzegorz Nowak	aa68	Optimization of the cooling process for pulsed conditions in multi-stage thermoelectric systems.
Mohsen Sadeghi, Tage Petersen, Zhenyu Yang, Benjamin Zühlsdorf, Kim Stenholdt Madsen and Ahmad Arabkoohsar	de80	Thermodynamic analysis of high temperature heat pump using natural low GWP working fluids integrated with district heating
Malick Kane, Daniel Favrat	3ebc	The general exergy method of heating/cooling technology design for optimization
Nicolas Leclercq, Javier Vega, Vincent Lemort	b515	Investigations on a Heat Pump using Two-phase Refrigerant Compressions
Wojciech Kostowski, Paweł Bargiel, Marcel Barzantny, Daniel Adamecki, Michał Majchrzyk, Barbara Mendecka, and Erwin Maciak	c00e	Experimental setup design for multi-purpose Ranque-Hilsch vortex tube investigation

Room: San Borondón. G. FUELS, COMBUSTION & GASIFICATION. FUEL CELLS. HYDROGEN USE IN ENERGY SYSTEMS

Presenter	ID	Title
Abdelnasir Omran, **Jose Ricardo Sodre**	ea0f	Exergoeconomic Model of a PEM Fuel Cell
Alla Toktarova, Lisa Göransson and Filip Johnsson	1e7c	The implications of the basic materials industry electrification on the cost of hydrogen
Paolo Vitulli, Andrea Monforti Ferrario, **Mosè Rossi**, Gabriele Comodi	7fd4	Implementation of a semi-empirical model for a lowtemperature alkaline electrolyzer in Aspen HYSYS®
Andrea Borghi, Nicola Casari, Agostino Gambarotta, Edoardo Micconi, **Mirko Morini**, Michele Pinelli and Alessio Suman	22f2	Syngas-fed cogeneration for the tertiary sector: lessons learnt from the Synbiose project
Elena Posada, Oscar Santiago, Vladimir L. Meca, **Teresa J. Leo**, Isabel Carrillo, Eva Chinarro	88a2	Development of Electrodes for fuel cells Pt-free load
Antonio Villalba-Herreros, Rafael d'Amore Domenech, Vladimir L. Meca, David Gómez-García, Emilio Navarro, **Teresa J. Leo**	0b92	GreenH2CM. Fuel cell-based hybrid powertrain research and testing laboratory for marine and aeronautical environments
Lukasz Szablowski, Arkadiusz Szczęśniak, Aliaksandr Martsinchyk, Olaf Dybiński, Małgorzata Wójcik, Jarosław Milewski	3d63	The influence of temperature on internal steam methane reforming in molten carbonate fuel cell
Yaniel Garcia Lovella, Abhishek Goel, Louis Garin, Julien Blondeau, Svend Bram	6a22	Hydrothermal Carbonization (HTC) pellets quality assessment: combustion kinetics, efficiency and emissions

Presenter	ID	Title
Teresa J. Leo, Alberto Abánades, Isabel Carrillo, Marcelo F. Ortega, Emilio Navarro, Enrique Alcala	4c1f	CH2PC. UPM Fellowship "Hydrogen and Fuel Cells"
Alberto Abánades Velasco, Teresa J. Leo, Marcelo F. Ortega, Enrique Alcalá, Isabel Carrillo	df5e	Hydrogen and fuel cell research community at UPM: A map of infrastructures for the challenge of developing the whole value chain of the hydrogen economy.
Ali Khosravi, Mohammad Malekan	7d15	Developing a Novel and Integrated Datacenter Concept Design Based on Hydrogen Production

Room: San Borondón. H. Process integration, process simulation and optimization, process monitoring & control		
Presenter	**ID**	**Title**
Anna Zylka, Jaroslaw Krzywanski, Tomasz Czakiert, Marcin Sosnowski, Karolina Grabowska, Anna Kulakowska, Dorian Skrobek, Wojciech Nowak, Yunfei Gao.	88f0	A novel two-bed reactor for a chemical looping combustion system with a moving bed
S. Revollar, M. Meneses, P. Vega, M. Francisco and R. Vilanova	13b2	Eco-efficiency dependencies for Wastewater Treatment Plant operation
Nur Sakinah Ahmad Yasmin, Norhaliza Abdul Wahab, Kumerasan A. Danapalasingam and R. Vilanova	4142	Modeling of Submerged Membrane Bioreactor Filtration using Deep Learning Neural Networks
Veronika Wilk, Sophie Knöttner, Gerwin Drexler-Schmid and Tilman Barz	6cdf	Superheated steam drying for paper production: process efficiency assessment
Matthias Sadlowski, Chae Eon Lim	3a3c	Multi-criteria Scenario Development for Linear Optimization Models Utilizing Carbon-Containing Exhaust Gases
Michael Lockan, **Rushit Kansara**	6dde	Robust Optimization of the Energy Concept of an Industrial Plant w.r.t. Uncertain Energy Costs and Environmental Conditions
Sanjay Venkatachalam, Valérie Held, Shivom Sharma, Yudong Xue, Wendy Queen, François Maréchal	c346	Optimization of adsorption processes for oxygen separation using response surface methodology
David Huber, Kathrin Werdinig, Felix Birkelbach and Rene Hofmann	df3c	Highly efficient heat integration of a power-to-liquid process using MILP
Anastasios Skiadopoulos, Christina Antonopoulou, Konstantinos Atsonios, Panagiotis Grammelis, Apostolos Gkountas, Panteleimon Bakalis, George Kosmadakis and Dimitris Manolakosh	6cd4	Trilateral Flash Cycle for efficient lowtemperature solar heat harvesting- A case study
Daniel Felipe Sempértegui-Tapia, Cesar Alberto Ayma-Ramos, Filiberto Soto Encinas and Renán Orelllana Lafuente	c748	Optimization tools for the operational dispatch of power generation systems to reduce diesel fuel consumption

Room: San Borondón. I. Renewable energy		
Presenter	**ID**	**Title**
Pablo Yánez Rosales, Julieta Schallenberg Rodríguez, Beatriz del Río Gamero	2999	Methodology to estimate the bottom-fixed and floating life cycle cost. Case applied to Fuerteventura Island
Sandesh S. Chougule, Gaurav G. Bolegave, Bhaskar Soni, Chandan Pandey, Vinayak Kamble and Christos N. Markides	1b69	An investigation of the synthesis and optical properties of novel Ag/ZnO hybrid nanofluids for spectral splitting in photovoltaic-thermal systems
Krzysztof Szczepaniec, Fergal O'Rourke, Peter Ryan	22b8	A state-of-the-art review of Geographic Information System applications, the main criteria of selection, and available data that may be used in the process
Rubén Barbero, Guillermo Ortega, Fernando Varela, Antonio Rovira	6530	Optimization of the Central Tower Receiver designed for the AdInCCSol project
Claudio Zuffi, Luca Socci, Andrea Rocchetti, Giampaolo Manfrida and Daniele Fiaschi	ef95	Evaluation and possible direct utilization of low- to medium-enthalpy geothermal resources for the sustainable development of the African continent
Leonardo A. Ferraresi Bassi, Silvio de Oliveira Junior	2e5f	Exergy and Environmental Analysis of the Substitution of Coal for Biomass in Thermal Power Plants in Brazil
Hugo Monteyne, Wim Beyne, Rik Koch and Michel De Paepe	cdfc	Design rules for a PV-inverter in Belgium: evaluation of actual rules of thumb
Bruna Stella De Freitas Santos, Milagros Cecilia Palacios-Bereche, Antonio Garrido Gallego, Silvia Azucena Nebra and *Reynaldo Palacios-Bereche*	fce9	Energy assessment of biofuels production from fast pyrolysis of sugarcane bagasse and straw, and upgrading of the bio-oil produced through hydrotreatment
Eduardo González-Mora, Ma. Dolores Duran-García	de16	Alternative Methodology for Modeling Direct Steam Generation in Parabolic Collectors: A Study Case in Northeast Mexico
Eduard Matheo Alave-Vargas, Valentina Rita Villarroel-Beltrán, Renán Orelllana Lafuente, Cecilia Tapia-Siles and *Daniel Felipe Sempértegui-Tapia*	cb2f	Design and simulation of a Banki wind turbine for highways under high turbulence and high altitude conditions
I. Nuez, A. Ruiz-García and *J. Osorio*	5679	Effects of the penetration of variable renewable energy sources on isolated power systems - Case study of the Canary Islands

Room: Room San Borondón. J. Energy-water nexus, desalination, waste water treatment		
Presenter	**ID**	**Title**
B. Del Río-Gamero and Edgar Rodríguez López	248d	Floating solar technology as an ally in cultivation areas for energy self-sufficiency.
Deivis Avila Prat, Felipe San Luis Gutiérrez, Ángela Hernández López, José Ángel Rodríguez Hernández and ***G. Nicolás Marichal Plasencia***	a6a2	Feasibility study of renewable energy systems to supply energy to desalination plants.
R. Vilanova, M. Meneses, M. Dominguez, A.M. Blanco, M. Barbud D. Selistanu, A. Visioli, A. Capodaglio, N. Andritsos, P. Samaras and K. Plakas	d6a3	NICEST - Master study proposal on Next generation Industrial Control Engineering for Sustainable water system Treatment
Tania Garcia-Ramirez, Carlos A. Mendieta-Pino, Saulo Brito-Espino, Alejandro Ramos-Martin and Federico Leon-Zerpa	614c	A tool for effluent characterization and design of Natural Treatment Systems for Wastewater (NTSW) for livestock farms with high organic load in isolated island environments.
Nenna El Kori, Ana M. Blanco-Marigorta, Noemi Melián-Martel	576c	Exergy analysis for desalination processes. Application to membrane distillation integrated with solar thermal energy