

**13. European Conference on Renewable Energy Systems - ECRES 2025 - Perugia, Italy - www.ecres.net
CONFERENCE PROGRAMME**

ON-DESK REGISTRATION (09:00-12:00)

1. DAY (26 MAY 2025) - HALL A (PHYSICAL SESSIONS)

09:00-09:15	OPENING SESSION - The Welcome Messages	Prof. Dr. Erol Kurt (Founder & Chairman) - Prof Dr Francesco Cottone (Chairman)
	SESSION 1A KEYNOTE SESSION - 1	Session Chair: Prof Dr Francesco Cottone
09:15-09:55	Solar fuels from the photocatalytic reduction of CO ₂	Prof. Dr. Ilenia ROSSETTI, University of Milan, Italy
09:50-10:30	Driving sustainability: integrating hydrogen production and wastewater treatment via advanced noble metals-free electrodes	Prof. Dr. Claudia BIANCHI, University of Milan, Italy
	SESSION 2A Energy Conversion	Session Chair: Dr. Hernandez Jesus Ernesto
10:30-10:45	126-Electrical response of a new energy harvesting device based on multilayer PVDF films	Hamdi Ezzin, Silvia Monchetti, Roberto Brighenti
10:45-11:00	3-Solar, Wind and Tidal Energy in a CO ₂ Refrigeration System for Sustainable Fish Cold Storage Solutions	Arian António Tavares Semedo, João Garcia
11:00-11:15	135-Fifth generation of biomass feedstocks to produce cleaner and more efficient energy	Hernandez Jesus Ernesto, Espinosa-Solares Teodoro, Ramírez-Arpide Félix Rafael
11:15-11:30	71-Mathematical modelling and experimental simulation of an AEM electrolyzer system	Alberto Monterroso Muñoz, Eduardo Manuel López González, Miguel Ángel Ridao Carlini, Diego Tejada Guzmán, Adrián Castro Calero
11:30-12:00	COFFEE BREAK	
	SESSION 3A Energy Policy and Planning	Session Chair: Dr. Arian Tavares Semedo
12:00-12:15	67-The renewable energy sources (RES) efficiency energy technologies: A proposal for the city of Ioannina, Greece	Georgia Cheirchanteri, Tzortzi Spyridoula, Panagiotakopoulos Demitrios
12:15-12:30	104-Do Capacity Factor of Renewable Energies Accurately Reflect Real-World Performance?	Mohamd Laimon
12:30-12:45	107-Impact of Renewable Energy Sources Integration on Albanian Power System Security	Viktor Rrotani, Olsi Karapici, Rajmonda Bualoti, Marialis Çelo
12:45-13:00	108-A New Approach for Optimal Phasor Measurement Units Placement	Olsi Karapici, Viktor Rrotani, Rajmonda Bualoti, Marialis Çelo
13:00-13:15		
13:15-14:30	LUNCH TIME	
	SESSION 4A KEYNOTE SESSION - 2	Session Chair: Prof Dr Francesco Cottone
14:30-15:10	Metal-Halide Perovskites: A wonder semiconductor class for solar cells and optoelectronic applications	Prof. Dr. Filippo De Angelis, University of Perugia, Italy
	SESSION 5A Optimization in Energy Systems	Session Chair: Dr. Serigne Thiao
15:10-15:25	63-Analysis of photovoltaic thermal (PVT) system with composite based absorber	Anubhav Goel, Yashar Ghiassi-Farrokhfal
15:25-15:40	64-Experimental and numerical study of a double slope solar still for brine water or sea water treatment in remote area	Serigne Thiao, Awa Mar, Omar Drame, Issakha Youm
15:40-15:55	144-A Framework for Optimal Energy Vectors Generation-Transformation-Distribution through Metaheuristic Perspective	Asier Gonzalez-Gonzalez, Juan Pedrero Alegria, Ignacia Olabarrieta Palacios, Jose Manuel Lopez-Guede
15:55-16:10	123-Improving IoT Device Energy Efficiency Through Adaptive Neuro-Fuzzy Inference Systems	Daniel Teso-Fz-Betoño, Iñigo Aramendia, Jose Antonio Ramos Hernanz, Koldo Portal-Porras, Daniel Caballero-Martin, Jose Manuel Lopez-Guede
16:10-16:40	COFFEE BREAK	
	SPECIAL SESSION 6A Advances in Wind, Photovoltaic, Harvesting and Storage Systems-1	Session Chair: Dr. Jose Manuel Lopez-Guede
16:40-16:55	139-Drone Charging Methods and Energy Efficiency: A Review	Daniel Caballero-Martin, Geovanny Daniel Satama-Bermeo, Daniel Teso-Fz-Betoño, Ekaitz Zulueta, Unai Fernandez-Gamiz, Jose Manuel Lopez-Guede
16:55-17:10	140-A Brief Review of Energy Optimization in Autonomous Drones using Q-Learning: Initial Results	Geovanny Daniel Satama-Bermeo, Hicham Affou, Iñigo Aramendia, Mustafa J.M Alhamdi, Unai Fernandez-Gamiz, Jose Manuel Lopez-Guede
17:10-17:25	141-Artificial Intelligence and Optimization in Energy Management Strategy for Plug-in Hybrid Electric Vehicles	Hicham Affou, Julian Estevez, Josean Ramos-Hernanz, Geovanny Daniel Satama-Bermeo, Ekaitz Zulueta, Jose Manuel Lopez-Guede
17:25-17:40	121-Smart Wheelchair Control for People with Reduced Mobility	Iñigo Aramendia, Josean Ramos-Hernanz, Daniel Teso-Fz-Betoño, Koldo Portal-Porras, Hicham Affou, Jose Manuel Lopez-Guede
17:40-17:55	122-Eco-Driven Remote Control Systems: A Low-Cost Solution for Internal Mail Delivery at Universities	Koldo Portal-Porras, Daniel Teso-Fz-Betoño, Pablo Campayo, Aimar Bernal, Iñigo Aramendia, Jose Antonio Ramos Hernanz, Jose Manuel Lopez-Guede
18:10-18:20	EVALUATION OF PHYSICAL SESSIONS	
POSTER SESSION (Posters will be located at the poster room between 10:00 am and 04:00 pm on 26 May 2025. Author(s) of posters should be beside the posters to get the questions)		
P1	65-Hybridization of water electrolysis and biomass gasification for renewable hydrogen production	Eduardo López González, Diego Tejada Guzmán, Adrián Castro Calero, Alberto Monterroso Muñoz, Bruna Rijo, Cecilia Mateos-Pedrero, Paulo Brito
P2	66-A technical review of LiFePo4 technologies for local energy communities	Laura Vargas Vázquez, Rocío Vidal, Rosa M. Rengel, Diego Tejada
P3	70-Design and construction of a Multistack PEM electrolyzer	Diego Tejada-Guzmán, Adrián Castro Calero, Alberto Monterroso Muñoz, Eduardo López González
P4	72-Application of electric energy storage technologies to be used by small and medium prosumers in smart grids	Rosa M. Rengel Gálvez, Julio J. Caparrós Mancera, Eduardo López González, Diego Tejada Guzmán, José M. Sancho Peñate
P5	127-Proposal for renewable energy systems for isolated residential houses	Deivis Avila, Ángela Hernández, G. Nicolás Marichal

GALA DINNER on 26th May 2025 (first day) at 20:00h Location: COLLINS' RESTAURANT : <https://www.sinahotels.com/en/h/sina-brufani-perugia/restaurants-and-bars/collins-restaurant> , PERUGIA

2. DAY (27 MAY 2025) - HALL A (ONLINE SESSIONS) The zoom link will be send to the authors and Conference start according to Italian Time Zone (GMT +2)

SESSION 1A Computers in Energy		Session Chair: Dr. Eduardo Bayona
09:00-09:15	62-Ignition delay time of ammonia hydrogen mixtures predicted with machine learning	Georg Klepp
09:15-09:30	94-First Approximation of Reinforcement Learning Applied to a Wind Turbine Pitch Control	Inazio Cavero-Juste, Matilde Santos, J. Enrique Sierra-García
09:30-09:45	106-Neural Networks for Load Estimation in Wind Turbines Tower	Eduardo Muñoz-Palomeque, João Gama, J. Enrique Sierra-García, Matilde Santos
09:45-10:00	118-Optimal location and size of the hybrid PVDG and DSTATCOM integration in electrical distribution systems using VAS-PSO algorithm	Youcef Kachaou, Manel Bidi, Ishak Aloui
10:00-10:15	75-3D-printable Chipless RFID for Environmental Sensing	Valentin Daniel Paccioia, Giacomo Clementi, Francesco Bonacci, Igor Neri, Alessandro Di Michele, Gabriele Perna, Francesco Cottone, Maurizio Mattarelli
10:15-10:30	133-Optimal Placement and Sizing of PV-DG and DSTATCOM in Distribution Networks Using a Hybrid GA-GSO-PSO Algorithm	Ishak Aloui, Youcef Kachaou, Manel Bidi
SESSION 2A Environment & Energy		Session Chair: Dr. Hector Luis Montaña Romero
10:35-10:50	21-Ship decarbonisation technology selection using TOPSIS	Bill Karakostas
10:50-11:05	68-Assessing the potential of small and medium-sized enterprises in Thailand's manufacturing sector to engage in carbon market mechanisms	Thatsarat Sathira, Pantip Kayee, Suvit Toraninpanich, Itthidet Thawon, Kittikun Poolsawat, Wongkot Wongsapai, Pana Suttakul, Tassawan Jaitiang
11:05-11:20	113-Self-Powered Sensors for Wireless Biological Temperature Monitoring	Giacomo Clementi, Igor Neri, Alessandro Di Michele, Francesco Cottone, Luigi Catacuzzeno, Antonio Michelucci, Guglielmo Sorci
11:20-11:35	116-Assessing Carbon Emission Reductions from Replacing Chiang Mai's Red Truck Taxis with Battery Electric Vehicles	Prutthipol Soisuan, Pantip Kayee, Suvit Toraninpanich, Itthidet Thawon, Kittikun Poolsawat, Wongkot Wongsapai, Witsarut Achariyaviriya, Pana Suttakul
11:35-11:50	117-Low-Carbon Public Transport in the Eastern Economic Corridor (EEC) of Thailand: Evaluating the Feasibility of Battery-Electric Buses for GHG Mitigation	Surapol Vassarodkit, Pantip Kayee, Suvit Toraninpanich, Itthidet Thawon, Kittikun Poolsawat, Wongkot Wongsapai, Witsarut Achariyaviriya, Pana Suttakul
11:50-12:05	124-Proposals for the creation of energy communities: Regulatory Support, case Ecuador	Hector Luis Montaña Romero, José David Muñoz Andrade, Flavio Alfredo Quizhpi Palomeque
SESSION 3A Session: Materials for Energy Applications		Session Chair: Dr. Yasemin Öztekin Ciftci
12:10-12:25	69-Analysis of S-shaped profiles for tidal turbines	Markus Filippi, Georg Klepp, Jens Friedrichs
12:25-12:40	114-Investigation of Structural, Electronic, Elastic, and Optical Properties of RbGaBr ₃ Perovskite Using First-Principles Methods	Gülçin Çorbacı, Yasemin Öztekin Ciftci
12:40-12:55	119-Transport Properties of Half-Heusler LiYB Semiconductors via Ab-initio Calculations	Yasemin Öztekin Ciftci
12:55-13:10	120-A Novel Hilbert Antenna for THz Applications	Kayhan Çelik, Erol Kurt
13:10-13:25	105-Synthesis and Characteristics of New Schiff Base for Organic Solar Cell Applications	Huda A. Al-Ghamdi, Alaa Y. Mahmoud
13:25-13:40	103-The effect of Solvents & Annealing on the Optical Properties of Schiff Bases for Potential Applications in Organic Solar Cells	Alaa Y. Mahmoud, Huda A. Al-Ghamdi
SESSION 4A Optimization Issues on Energy Systems		Session Chair: Dr. Dolores Hidalgo
13:45-14:00	22-Biohydrogen generation potential of anaerobic sludges	Dolores Hidalgo, Enrique Pérez-Zapatero, Jesús M. Martín-Marroquín, Miguel A. Sánchez-Gatón
14:00-14:15	111-Hybrid Energy Harvesting for High-Voltage Power Lines Monitoring	Luca Tinti, Luca Castellini, Francesco Cottone, Igor Neri, Giacomo Clementi
14:15-14:30	73-Effect of Exogenous Inputs in Wind Energy Forecasting with Seasonal Parametric Models	Leslie Ricardo de la Rosa, Alejandro Gómez, M. Santos, L. García-Pérez
14:30-14:45	112-Foamed PLA Cantilevers for Energy Harvesting: Investigating Energy Loss Mechanisms in Low-Vacuum Conditions	Igor Neri, Giacomo Clementi, Francesco Bonacci, Francesco Cottone, Maurizio Mattarelli, Valentin Daniel Paccioia, Gabriele Perna
14:45-15:00	76-The Impact of Generative Artificial Intelligence on Distribution Planning Platform	Anthony Hoang, Panitarn Chongfuangprinya, Bo Yang, Yanzhu Ye, Natsuhiko Futamura, Yoshihisa Okamoto
15:00-15:15	134-A Lithium Battery Charger System Design by Using a Piezoelectric Wind Energy Harvester	Davut Özhan, Erol Kurt
SESSION 5A Advances in Energy Monitoring & Planning		Session Chair: Dr. Ahmad Sedaghat
15:20-15:35	101-Experimental Study of an Origami Wind Turbine Concept	Ahmad Sedaghat, Bassem Djedi, Mohamad Hussein Farhat, Mohamad Iyad Al-Khiami, Mohamed El Badawy
15:35-15:50	125-Decarbonisation and Meeting Future Euro Targets Using Hydrogen Fumigated Engines	Angad Panesar, Elisa Wylie
15:50-16:05	128-Evaluating Greenhouse Gas Emissions and the Potential Policies for Promoting Battery-Electric Trucks in Thailand's Eastern Economic Corridor	Witsarut Duangchinda, Pantip Kayee, Suvit Toraninpanich, Itthidet Thawon, Kittikun Poolsawat, Wongkot Wongsapai, Witsarut Achariyaviriya, Pana Suttakul
16:05-16:20	132-Total cost assessment of public EV adoption: A case of Chiang Mai red trucks	Thiradet Wiriyayuttaphan, Pantip Kayee, Suvit Toraninpanich, Itthidet Thawon, Kittikun Poolsawat, Wongkot Wongsapai, Witsarut Achariyaviriya, Pana Suttakul
16:20-16:35	2-Integration of Renewable Energy Sources for Enhanced Energy Efficiency in Refrigerated Cheese Ripening Chambers: Insights from the CASEUS Project	João Garcia, João Dias, Tiago Teixeira, Francisco Calvo, Arian Semedo
SESSION 6A Advances in Wind, Photovoltaic, Harvesting and Storage Systems-2		Session Chair: Dr. Mustafa J.M Alhamdi
16:40-16:55	136-Application of the Distribution of Relaxation Times (DRT) in Lithium Iron Phosphate (LFP) Battery Analysis	Isabel Aguilar-Conde, Ekaitz Zulueta-Guerrero, Javier Olarte, Alba Saenz, Jose Manuel Lopez-Guede, Unai Fernandez-Gamiz
16:55-17:10	137-Implementation in MATLAB of a library of VRFBS models	Decebal Aitor Ispas-Gil, Ekaitz Zulueta, Javier Olarte, Mikel Zulueta-Perez, Unai Fernandez-Gamiz, Jose Manuel Lopez-Guede
17:10-17:25	138-A comparison of serpentine, parallel, spiral, and pin type flow field designs in a PEM electrolyzer using CFD simulation	Oier Echazarra-Gonzalez, Joseba Martinez-Lopez, Unai Fernandez-Gamiz, Aitor Beloki-Arrondo, Iñigo Ortega-Fernandez, Jose Manuel Lopez-Guede
17:25-17:40	142-The Role of Deep Learning in Reducing Power Consumption within Smart Energy Management	Mustafa J.M Alhamdi, Hasan I. Raheem, Omer A. Dara, Josean Ramos-Hernanz, Ekaitz Zulueta, José Manuel Lopez-Guede
17:40-17:55	143-Advancements in Cost-Effective Edge Computing and IoT Integration: Enhancing Photovoltaic Monitoring in Jordan	Jafar AlQaryouti, Mustafa J.M Alhamdi, Javad Rahebi, Felipe A. Nunez-Donoso, Daniel Caballero-Martin, Jose Manuel Lopez-Guede
17:55-18:10	147-Enhancing Oil Consumption Monitoring: Soft Sensor Model for Natural Gas Power Generation Engines with Active Pre-chamber	Javier Del Valle, Julian Estevez, Felipe A. Nunez-Donoso, Jose Manuel Lopez-Guede
SESSION 6A Advances in Wind, Photovoltaic, Harvesting and Storage Systems-3		Session Chair: Dr. Felipe A. Nunez
18:15-18:30	148-Study of the DWA algorithm of an Autonomous Mobile Robot	Javier Peña-Ceballos, Ekaitz Zulueta, Jorge Rodriguez-Guerra, Maria Asun Cantera, Unai Fernandez-Gamiz, Jose Manuel Lopez-Guede
18:30-18:45	149-Energy Optimization of Robotic Manipulator Trajectories Using Lagrange interpolating polynomials	Álvaro Acera Ciriano, Ekaitz Zulueta, Ibai Inziarte-Hidalgo, Maria Asun Cantera, Saioa Etxeberria-Berrizbeitia, Jose Manuel Lopez-Guede
18:45-19:00	150-Experimental Design and Data Preprocessing for Predicting Energy Consumption in Industrial Mobile Robots	Danel Rico-Melgosa, Ekaitz Zulueta, Jorge Rodriguez-Guerra, Ibai Inziarte-Hidalgo, Mishell Cadena, Ángela Bernardini, Jose Manuel Lopez-Guede
19:00-19:15	129-Real-Time Object Detection Using Deep Learning on Raspberry Pi for IoT-based crowd monitoring and emergency alerts in educational institutions in Smart Cities	Jose Manuel Lopez-Guede, Ahmed Alaa
19:15-19:30	146-Quantifying the Electrical Load of Electric Vehicle Chargers within Power Distribution Networks	Felipe A. Nunez-Donoso, Koldo Portal-Porras, Javier Del Valle, Jafar AlQaryouti, Jose Manuel Lopez-Guede
19:30-19:45	145-Influence of Transverse Riblets on Turbulent Flow Over Backward-Facing Steps	Xabier Uralde Guinea, Irati Uriarte, Yeray Parra, Pablo Perez, Unai Fernandez-Gamiz, Ekaitz Zulueta, Jose Manuel Lopez-Guede