



Ministry of Higher Education and Scientific Research
University of Mouloud Mammeri, Tizi-Ouzou
Faculty of Electrical Engineering and Computer Science



International Conference on Artificial Intelligence,
Embedded Systems, and Renewable Energy

15-17 December 2025

AIESRE 2025

PROGRAM

<https://aiesre.ummto.dz>

Program Layout

1ST DAY - 15 DECEMBER	Registration (8:00- 8:30)		
	Opening Ceremony (8:30 – 9:00)		
	Keynote 1 (9:00 – 9:45) PROF. TEDJANI MESBAHI Smart Battery and Hybrid Energy Storage Systems for Electric Vehicles and Drones: Advanced Energy Management Strategies and Applications		
	Coffee break (9:45 – 10:15)		
	Keynote 2 (10:15 – 11:00) DR. HACIB BEN AISSA Energy Transition and Industry Decarbonisation: Emerging Pathways and Technologies		
	Oral Session 1 (11:00 – 12:00)		
	Track 1	Track 5	Track 6
	Lunch (12:00 – 13:00)		
	Keynote 3 (13:00 – 13:45) MR. DANIEL COOK Energy Management and Storage with Bio-Based Phase Change Materials		
	Oral Session 2 (13:45 – 14:45)		
2ND DAY - 16 DECEMBER	Track 1	Track 5	Track 6
	Poster Session (14:45 – 15:30)		
	Online Session (15:30 – 17:30)		
	Track 1	Track 5	Track 6
	Registration (8:00 – 8:30)		
	Keynote 1 (9:00 – 9:45) PROF. HAMID LAGA Efficient Deep Learning for 3D/4D Shape Analysis: From Medical Applications to Generative AI		
2ND DAY - 16 DECEMBER	Coffee break (9:45 – 10:15)		
	Keynote 2 (10:15 – 11:00) PROF. FREDE BLAABJERG Challenges of Renewable Energy Integration in Clean Energy Systems		
	Oral Session 1 (11:00 – 12:00)		
	Track 1	Track 2	Track 3&4
	Lunch (12:00 – 13:00)		

2ND DAY- 16 DECEMBER	Keynote 3 (13:00 – 13:45) DR. KAMAL HADIDI Innovating Chemical Manufacturing: Low-Temperature Solutions for Energy Efficiency and Emissions Reduction		
	Oral Session 2 (13:45 – 14:45)		
	Track 1	Track 2	Track 3&4
	Poster Session (14:45 – 15:30)		
3RD DAY- 17 DECEMBER	Online Session (15:30 – 17:30)		
	Track 1	Track 2	Track 3&4
	Registration (8:00 – 8:15)		
	Panel Discussion 1 (8:15 – 10:00) Renewable Energy Regulation and Stakeholder Collaboration		
	Coffee Break (10:00 – 10:15)		
	Panel Discussion 2 (10:15 – 11:30) Renewable Energy Education and Training		
	Award & Closing Ceremony (11:30 – 12:30)		
	Historic Tizi Ouzou and Surroundings (Starting at 12:30) Guided Tour (Lunch Included)		

Presentation – Duration & Format

- Keynote:** Each presentation is 30 minutes, followed by 10 minutes of Q&A
- Oral Presentation:** Each presentation is 10 minutes, followed by 5 minutes of Q&A
- Note:** Accepted file formats for all presentations are PDF and PPT

Track Room Assignments

Track#	Title	Room
Track 1	Harnessing Renewable Energy: Advances and Innovations	Mammeri Room01
Track 2	Innovations in Embedded Systems for Renewable Energy Management	Mammeri Room02
Track 3	Green Computing (ML/AI) for Renewable Energy Integration	Mammeri Room03
Track 4	Advancing Hybrid Energy Systems for Sustainable Infrastructure	Mammeri Room03
Track 5	Energy Management and Storage	Mammeri Room02
Track 6	Innovations in Precision Agriculture and Sustainable Water Management	Mammeri Room03
Panel Discussion	Renewable Energy Policy and Regulation, Education and Training, and Stakeholder Collaboration	Mammeri Room01

Session Schedule

Day 1: Monday – December 15, 2025 / Oral Session 1

<i>Session Code:</i>	Track 1
<i>Session Title:</i>	Renewable Energy Innovation, Control, and Optimization
<i>Session Time:</i>	11:00 – 12:00
<i>Session Room:</i>	Mammeri_Room01
<i>Session Chairs:</i>	SAID DRID & ABDELLAH KOUZOU

ID	Starts at	Title & Authors
67	11:00	Sustainable Power Generation via Olive Solid Waste Gasification in the Tizi Ouzou Region. Abdenour Elias and Abderrezak Kennas
71	11:15	Analysis of Long-Term Performance Degradation in Photovoltaic Modules Amar Hadj Arab, Bilal Taghezouit, Fatah Mehareb, Smail Semaoui, Kamel Abdeladim, Ismail Bendaas, Abdelhak Razagui, Kada Bouchouicha, Saliha Boulahchiche and Fella Tobbal
77	11:30	Sensorless Voltage-Oriented Control of Modular Multilevel Converters for Wind Power Systems Mustapha Asnoun, Adel Rahoui, Koussaila Mesbah, Boussad Boukais, Noumidia Amoura and Seddik Bacha
130	11:45	Improved Funnel Control Strategy with PI Regulation for Wind Energy Systems for Maximum Power Point Tracking Zaina Ait Chekdhidh, Aghiles Ardjal and Maamar Bettayeb

Day 1: Monday – December 15, 2025 / Oral Session 1

<i>Session Code:</i>	Track 5
<i>Session Title:</i>	Advanced Control, Optimization, and Sustainable Technologies for Renewable Energy Systems
<i>Session Time:</i>	11:00 – 12:00
<i>Session Room:</i>	Mammeri_Room02
<i>Session Chairs:</i>	AREZKI FEKIK & RACHID MANSOURI

ID	Starts at	Title & Authors
33	11:00	Solar Inverter Performance Prediction Using Double Exponential Curve Fitting Lyazid Kaci, Amar Hadj Arab and Rachid Zirmi
44	11:15	Robust Generalized Predictive Speed with Direct Torque Control for Multiphase Wind Generators under Parametric Uncertainty Kamel Ouari, Amel Kasri, Youcef Belkhier and Zoubir Boudries
58	11:30	Energy-Efficient and Sustainable Approaches to AS/RS Design and Control: A Comprehensive Review Omar Bahmid, Sihem Kouloughil and Bendious Amaria
97	11:45	Equivalent Consumption Minimization Strategy for Energy Management in Unmanned Aerial Vehicle Haroune Aouzellag and Sabrina Nacef

Day 1: Monday – December 15, 2025 / Oral Session 1

<i>Session Code:</i>	Track 6
<i>Session Title:</i>	AI-Driven Automation and Robotics for Precision Agriculture
<i>Session Time:</i>	11:00 – 12:00
<i>Session Room:</i>	Mammeri_Room03
<i>Session Chairs:</i>	KHALED BOUNAR & DRISS NEHARI

ID	Starts at	Title & Authors
92	11:00	Using a UAV Crop Monitoring System for Early Tomato Disease Detection and Decision Support Dimosthenis Minas, Theodosios Chronopoulos and Michalis Xenos
105	11:15	Sensor-Driven Real-Time Obstacle Detection for Agricultural Drone Spraying Systems Ahmed Lallal, Sabrina Mokrani, Tassadit Sadoun and Mehammed Daoui
112	11:30	Fruit Anomaly Detection and Manipulation Using a Vision-Guided Autonomous Aerial Manipulator Bidjad Souier, Choukri Bensalah, Rida Mokhtari, Amal Choukchou Braham and Mohamed Abderrahim

Day 1: Monday – December 15, 2025 / Oral Session 2

<i>Session Code:</i>	Track 1
<i>Session Title:</i>	Innovations in Renewable Energy Conversion, Optimization, and Integration
<i>Session Time:</i>	13:45 – 14:45
<i>Session Room:</i>	Mammeri_Room01
<i>Session Chairs:</i>	FATMA LOUNNAS & KAHINA LAGHA

ID	Starts at	Title & Authors
27	13:45	Performance and Emission Analysis of LPG-Hydrogen Dual Fuel Engines Hassina Ghodbane, Fouad Khaldi and Bahloul Derradji
55	14:00	Comparative Study of the Different Structures of Multi-Level Inverters for the Connection of PV Systems to the Power Grid Amina Benabda and Amina Azizi
83	14:15	Hippopotamus Optimization Algorithm-Based Robust Tilt-FOID Control Design for Linear Time-Invariant Systems in Renewable Energy Applications Elouahab Bouguenna, Samir Ladaci, and Akila Djoudi Gherbi
107	14:30	Coupled Magneto-Mechanical Modeling of a Marine Wave Energy Recovery System Bachir Quartal, Meziane Hamel, Mustapha Zaouia, Ratiba Fellag, Riad Moualek and Ahmed Nait Ouslimane

Day 1: Monday – December 15, 2025 / Oral Session 2

Session Code: Track 5
Session Title: Advanced Forecasting, Control, and Energy Harvesting
Session Time: 13:45 – 14:45
Session Room: Mammeri_Room02
Session Chairs: MOURAD LAGHROUCHE & FATEH KRIM

ID	Starts at	Title & Authors
138	13:45	Design and Development of a Piezoelectric Shoe Using Lead-Free Composite Materials for Mechanical Energy Harvesting Zakia Chelli, Massine Gana, Hakim Achour, Abdel Madjid Djidda, Yacine Baghdadi, Malika Saidi, Mourad Laghrouche and Ahcène Chaouchi
140	14:00	Energy Management of a Smart District Using the Neural Predictions and Predictive Control Model (MPC) Zoulikha Ouchefoun, Mourad Hasni and Lakhdar Guenfaf
173	14:15	Enhanced Battery Health Forecasting with Dynamic Thresholds Using Multi Input LSTM Networks Rafik Saddaoui, Karim Oudiai, Mhenna Nacheff, Hamid Hamiche, Rachid Zirmi and Mourad Laghrouche
185	14:30	Predictive Control of DFIG in a Hybrid PV/DFIG/Batt System Supplying a Water Pumping System Tarek Boudjerda, Sofia Lalouni Belaid and Salah Tamalouzt

Day 1: Monday – December 15, 2025 / Oral Session 2

Session Code: Track 6
Session Title: Intelligent Sensing and Prediction for Agricultural Systems
Session Time: 13:45 – 14:45
Session Room: Mammeri_Room03
Session Chairs: NABIL KHERBACHE & REDOUANE KARA

ID	Starts at	Title & Authors
134	13:45	Prediction of a Tunnel Greenhouse Relative Humidity Using Artificial Neural Network Salah Bezari, Asma Adda and Sidi Mohamed El Amine Bekkouché
161	14:00	Review of Smart Systems in Aquaculture and Aquaponics Elarbi Kacemi, Khelifa Benahmed and Tariq Benahmed
178	14:15	Comparative Analysis of YOLOv8, YOLOv11, and Faster R-CNN for Multi-Crop Plant Disease Detection Rim Gasmi, Marwa Chander and Mohamed Amine Badache

Day 1: Monday – December 15, 2025 / Poster Session

<i>Session Code:</i>	Track 1, 5 & 6
<i>Session Title:</i>	Smart Energy, Machine Learning, and Power Materials Reliability
<i>Session Time:</i>	14:45 – 15:30
<i>Session Room:</i>	Mammeri_Hall
<i>Session Chairs:</i>	MUSTAPHA MOUDOUD & SAID DJENNOUNE

ID	Starts at	Title & Authors
72	14:45	Smart Energy Control in PV-Battery Systems Using Three-Level Boost Converters with DC-Link Voltage Regulation via Genetic Algorithm Ahmed Bahri, Nabil Mezhoud, Bilel Ayachi, Abdelkrim Thameur, Farouk Boukhenoufa and Abderrahmane Bellaouar
85	14:45	Bio-Inspired Method for Optimal Energy Management and Efficiency Improvement of Microgrids Nabil Mezhoud, Ahmed Bahri, Farouk Boukhenoufa, Bilel Ayachi, Lakhdar Bouras and Ilham Ahmed Hazila
131	14:45	Thermal Aging Effects on the Electrical, Mechanical and Physicochemical Properties of LDPE Power Cables Insulation Ferhat Slimani, Abdallah Hedir, Mustapha Moudoud, Omar Lamrous, Soraya Nait Larbi and Sébastien Rondot
142	14:45	Comparative Numerical Study of Multilayer Walls with and without Phase Change Materials for Enhanced Thermal Performance Asma Bouterfif and Farid Mechighel
146	14:45	Design and Implementation of a Modular Cold Storage System Bouchra Lahlou, Latefa Ghomri and Mohammed Sari
151	14:45	Performance Assessment of ANN and MLR Models for Predicting NF/RO Desalination System Asma Adda, Salah Bezari and Salah Hanini
163	14:45	Heart Beat IoT: Real-Time Cardiac Monitoring Saliha Rabehi, Malika Saidi, Hayat Hammouche, Nadia Serkhane, Hakim Achour, AHCÉNE Chaouchi, Mourad Laghrouche, Nouara Lamrani, Mohamed Rguiti, Christian Courtois, Yannick Lorgouilloux and Mohamed Aymen Ben Achour
177	14:45	Effect of Critical Current Density Dependence on the Internal Magnetic Field Penetration in an HTC Superconducting Bulk Asma Azzouza, Hicham Allag and Jean-Paul Yonnet
183	14:45	Machine Learning for Predictive Maintenance of Electrical Machines: A Review Taher Amraoui, Samir Merad and Ahmed Amrane
184	14:45	Hydrothermal Degradation Impacts on the Properties Of PVC Cables Insulation Hassene Ait Ouazzou, Ferhat Slimani and Mustapha Moudoud
191	14:45	Ultraviolet Aging Effects on the Dielectric Properties of PVC/Al₂O₃ Nanocomposites Cables Insulation Sabrina Amraoui, Abdallah Hedir, Ferhat Slimani, Mustapha Moudoud, Omar Lamrous and Ali Durmus

Day 1: Monday – December 15, 2025 / Online Session

<i>Session Code:</i>	Track 1
<i>Session Title:</i>	Advanced Renewable Energy Systems: Design, Monitoring, and Control
<i>Session Time:</i>	15:30 – 17:30
<i>Session Room:</i>	Mammeri_Room01
<i>Session Chairs:</i>	YACINE TRIKI & AGHILAS ARDJAL

ID	Starts at	Title & Authors
136	15:30	Study and Development of Methodology for Dimensioning Photovoltaic Systems (PVS) Leonardo Kunen, André Tavares, Breno Carvalho and Franciele Ronchi
153	15:45	Daily Energy Production Patterns in Medium-Scale Hydroelectric Operations: a Longitudinal Descriptive Study Elmer Arellanos-Tafur and Marcelo Damas-Niño
156	16:00	Design and Implementation of a Low-Cost Automatic Weather Station Based on the Internet of Things Sefia Attia, Abdelkader Mechernene and Mourad Loucif
158	16:15	From Grid Following to Grid Forming in PV Grid Tied Single Phase Inverter Mourad Zebboudj, Syphax Ihammouchen, Toufik Rekioua, Djamila Rekioua, Ali Chebabhi and Mohammed Said Ouahabi
167	16:30	Overshoot-Free Speed Control in PMSG Wind Turbines Using a Smooth Sliding Mode Controller Wassila Hattab, Abdelhamid Benakcha, Seddik Tabet, Amira Slimani, Ahmed Marouane Ghodbane
186	16:45	Seasonal Variability and Performance Optimization of Wind Power Generation: A Comprehensive Study of ENGIE Operations Elmer Arellanos-Tafur and Marcelo Damas-Niño

Day 1: Monday – December 15, 2025 / Online Session

<i>Session Code:</i>	Track 5
<i>Session Title:</i>	Metaheuristic Optimization and Control Strategies for Hybrid Systems
<i>Session Time:</i>	15:30 – 17:30
<i>Session Room:</i>	Mammeri_Room02
<i>Session Chairs:</i>	TEDJANI MESBAHI & SMAIL SEMAOU

ID	Starts at	Title & Authors
28	15:30	PSO Algorithm for Optimal of Fuzzy Logic Controller for A DC-DC Buck Converter Ahmed Bennaoui, Aissa Ameer, Ameer Bennaoui and Salah Benzian
64	15:45	Two-Level Hierarchical Control of a PV-Battery Hybrid Energy System Using Differential Flatness-Based Strategy and MShOA-Tuned FOPID Controller Hadjer Chabana, Ilyes Tegani, Hamza Afghoul and Soumia Merah
73	16:00	Comparative Optimal Dispatch Control Strategies for a Hybrid Renewable Energy System Mourad Zebboudj, Djamila Rekioua and Toufik Rekioua
115	16:15	Energy Management of a PEMFC/Battery Electric Vehicle Using a State Machine Strategy Khoudir Kakouche, Toufik Rekioua, Djamila Rekioua, Amira Slimani, Zahra Mokrani and Mohammed Amine Soumeur
149	16:30	Optimization of Energy Management in a PV–Wind–Battery Microgrid Using PSO in MATLAB Meziane Kaci, Hassane Ezziane, Slim Rouabah, Zakaria Layate, Hakim Ait Said and Hamou Nouri
154	16:45	Statistical Assessment of Commercial Electric Service Quality: A Case Study of ENEL Distribution Company in Peru Marcelo Damas-Niño and Elmer Arellanos-Tafur
162	17:00	Optimal Distribution Network Reconfiguration for Minimizing Energy Losses and Enhancing Reliability Using Metaheuristics Anes Bouhanik, Samir Bouslimani, Ahmed Salhi, Djemai Naimi, Younes Zahraoui and Saad Mekhilef

Day 1: Monday – December 15, 2025 / Online Session

<i>Session Code:</i>	Track 6
<i>Session Title:</i>	Machine Intelligence and Sensing Technologies for Precision Agriculture and Water Management
<i>Session Time:</i>	15:30 – 17:30
<i>Session Room:</i>	Mammeri_Room03
<i>Session Chairs:</i>	MOHAMMED RACHEDINE & ADAM BELLOUM

ID	Starts at	Title & Authors
30	15:30	Hybrid WCA-HS Based Control for Autonomous Quadrotor Navigation in Precision Agriculture Nesrine Tenniche, Boubekeur Mendil, Farid Ghilas and Lamine Brikh
40	15:45	Advancing Infiltration Modeling with Deep Learning: A Superior Alternative to Empirical Approaches in the Mitidja Plain Amina Mazighi, Mohamed Meddi and Hind Meddi
91	16:00	Advancing Agricultural Robotics: AI Control Strategies for Delta Robots Issam Kessira, Ali Chabane, Nawel Ghazi, Khaled Benfriha and Samir Meradi
98	16:15	Early-Season Water Use Patterns in Wheat and Barley under Semi-Arid Conditions: A Lysimetric Approach Omar Bouziane, Mohamed Meddi and Amina Mazighi
147	16:30	IoT-Based Climatic Environment Monitoring System Design for a Cattle Breeding Buildings Sihem Souiki, Mourad Hadjila, Reda Yagoub, Abdelillah Boudjella and Oussama Ahed Messaoud
157	16:45	Integrated Geophysical Approach for Groundwater Prospecting Doria Kutrubes and Khaled Bounar

Day 2: Tuesday – December 16, 2025 / Oral Session 1

Session Code: Track 1
Session Title: Advanced Photovoltaic Materials and Solar Forecasting
Session Time: 11:00 – 12:00
Session Room: Mammeri_Room01
Session Chairs: FATMA LOUNNAS & MOHAMED LAMINE HAMIDA

ID	Starts at	Title & Authors
22	11:00	Comparative Analysis of Pure ZnO, Ag-Mn Codoped ZnO, and Mn:ZnO/Ag/Mn:ZnO Multilayer Transparent Conductive Oxides for Photovoltaic Applications Fouaz Lekoui, Khaoula Settara, Rachid Amrani, Elyes Garoudja, Walid Filali, Slimane Oussalah, Driss Dergham and Salim Hassani
41	11:15	Characterization of EVA/phase change material blend embedded with zinc oxide (ZnO) nanomaterial as nanocomposite for photovoltaic module encapsulation process Kamel Agroui, Lyes Maifi, Ouided Hioual, Aicha Ayadi and Abdelhamid Chari
70	11:30	Surpassing 16% Efficiency in Cd-Free CZTS Solar Cells via Si Back-Contact Engineering and IR Harvesting Lynda Metref, Essaid Mansouri, Mahfoud Abderrezek and Samira Sali
171	11:45	A Hybrid Electrical and Environmental LSTM Approach for Short-Term Solar Power Forecasting in Algeria Rafik Saddaoui, Samir Aoughlis, Karim Oudiai, Nacheff Mhenna, Hamiche Hamid and Mourad Laghrouche

Day 2: Tuesday – December 16, 2025 / Oral Session 1

Session Code: Track 2
Session Title: Edge AI and Intelligent Monitoring for Energy Systems
Session Time: 11:00 – 12:00
Session Room: Mammeri_Room02
Session Chairs: NADHIR DJEFFAL & RACHID ZIRMI

ID	Starts at	Title & Authors
26	11:00	Recent Advances in the Application of TinyML and Edge Devices in Solar Photovoltaic Systems: Bridging the Gap Between Laboratory Research and Industry Adel Mellit and Marco Zennaro
49	11:15	An Embedded AI Model for Defect Detection in Photovoltaic Modules Using a Jetson Nano-Powered Unmanned Aerial Vehicle Nouamane Kellil, Adel Mellit, Toufik Benkherouf and Maamar Bettayeb
125	11:30	Unbalance fault detection in an IoT-Connected Motor Network Using Artificial Neural Networks Massine Gana, Zakia Chelli, Rafik Saddaoui, Hakim Achour and Mourad Laghrouche

Day 2: Tuesday – December 16, 2025 / Oral Session 1

<i>Session Code:</i>	Track 3&4
<i>Session Title:</i>	Data-Driven Modeling and Optimization in Power Systems
<i>Session Time:</i>	11:00 – 12:00
<i>Session Room:</i>	Mammeri_Room03
<i>Session Chairs:</i>	ADAM BELLOUM & MASSINE GANA

ID	Starts at	Title & Authors
36	11:00	Advanced Polynomial and Gaussian Regression Frameworks for Predictive Modeling of Tangential Discharge Phenomena in High-Voltage Insulation Systems Nabila Saim
80	11:15	Data-Driven Based Sparse Identification of Nonlinear Dynamics for Stability Analysis of Mixed Grid-Following and Grid-Forming Inverters Houssam Deboucha, Bessam Deboucha, Elyazid Amirouche, Said Aissou, Ali Berboucha, Kaci Ghedamsi and Saad Mekhilef
121	11:30	Formal Concept Analysis for Knowledge Extraction and Optimal Configuration Selection in Photovoltaic Installations Zina Ait Yakoub, Ali Bechouche and Djaffar Ould Abdeslam
170	11:45	Study of a Hybrid PV/Fuel Cell System Dedicated to an Electric Vehicle Charging Station Mohamed Lamine Hamida, Damya Iamrache, Sarah Maouche, Hakim Denoun, Arezki Fekik, Dyhia Kais and Zoulikha Tebri

Day 2: Tuesday – December 16, 2025 / Oral Session 2

<i>Session Code:</i>	Track 1
<i>Session Title:</i>	Intelligent Control and Fault Diagnosis in Photovoltaic Systems
<i>Session Time:</i>	13:45 – 14:45
<i>Session Room:</i>	Mammeri_Room01
<i>Session Chairs:</i>	KARIM KEMIH & MOUNIR AMIR

ID	Starts at	Title & Authors
59	13:45	A Novel Linguistic Hedge-Based Fuzzy Logic Controller for Enhanced MPPT in PV Systems Chellali Benachaiba
61	14:00	Tuning of a Neutrosophic Fuzzy Controller for DC Motor Using the Novel Qudwa Metaheuristic Chellali Benachaiba
87	14:15	Experimental Study of Solar Water Pump Control by Arduino Amina Azizi and Amina Benabda
93	14:30	Open-Circuit Fault Diagnosis of a Three-Level Boost Converter for Photovoltaic Applications Abdelddjabar Benrabah, Mouaad Belguedri, Mohamed-Amine Yahiaoui, Fayçal Benyamina and Mohamed Benbouzid

Day 2: Tuesday – December 16, 2025 / Oral Session 2

<i>Session Code:</i>	Track 2
<i>Session Title:</i>	Control and Security in Modern Renewable Energy Systems
<i>Session Time:</i>	13:45 – 14:45
<i>Session Room:</i>	Mammeri_Room02
<i>Session Chairs:</i>	ADEL MELLIT & FERHAT SLIMANI

ID	Starts at	Title & Authors
53	13:45	Security of Grid-Connected Photovoltaic Plants A Mini-Review and Future Directions Nassiha Boutana, Rokia Chekirou, Adel Mellit and Maamar Bettayeb
141	14:00	Direct Power Control Technique for Wind Power Generation System based on a Double Stator Induction Generator (DSIG) Fatma Lounnas
190	14:15	Development and Design of an Intelligent Energy Router Rachid ZIRMI, Belkacem Zouak, Nadhir Djeflal, Abderrahmane Alem, Massinissa Kloul and Hakim Achour

Day 2: Tuesday – December 16, 2025 / Oral Session 2

<i>Session Code:</i>	Track 3&4
<i>Session Title:</i>	Intelligent Control and Optimization in Renewable Energy Systems
<i>Session Time:</i>	13:45 – 14:45
<i>Session Room:</i>	Mammeri_Room03
<i>Session Chairs:</i>	KAMAL HAMMOUCHE & BILAL ATTALLAH

ID	Starts at	Title & Authors
123	13:45	Improving the Performance of a Wind Turbine PID Controller Using GWO Optimization and Fuzzy Logic Houari Habiba and Nouredine Zerhouni
128	14:00	Stabilizing Photovoltaic Output Using a Controlled Ćuk Converter Topology Mohamed Kaouane, Nidhal Cherrat and Akkila Boukhelifa
188	14:15	Anomaly Detection in Datacenter Energy Consumption Using an Autoencoder Karima Oukfif
194	14:30	Optimizing Batteries Charging Time Inside an Autonomous Photovoltaic System Installed on a House's Roof Salah Tamalouzt, Kamel Djermouni, Ali Berboucha, Kaci Ghedamsi and Djamal Aouzellag

Day 2: Tuesday – December 16, 2025 / Poster Session

<i>Session Code:</i>	Track 1, 2, 3 & 4
<i>Session Title:</i>	Smart Sensing, and Intelligent Control in Energy and IoT Systems
<i>Session Time:</i>	14:45 – 15:30
<i>Session Room:</i>	Mammeri_Hall
<i>Session Chairs:</i>	MUSTAPHA MOUDOUD & SAID DJENNOUNE

ID	Starts at	Title & Authors
38	14:45	Determination of the Minimum Capacitance for Self-Excitation of a SEIG, Taking Into Account the Speed Ramp Up Madjid Si Brahim, Rabah Rouas, Rahma Kachenoura and Salah Haddad
57	14:45	Comparative Analysis of MPPT Algorithms for Photovoltaic Systems Under Partial Shading: A MATLAB/Simscape-Based Study Ahmed Chebri, Fatima Zohra Boukahil, Assala Mouffouk and Boubekeur Azoui
90	14:45	Transformer Fault Diagnosis Using HHO-Enhanced XGBoost and Liquid Dielectric Signal Analysis Tarek Bouguettaya, Abderrahim Reffas, Mohammed Adaika, Hicham Talhaoui, Oualid Aissa and Sherif S. M. Ghoneim
110	14:45	Graph-Based Semi-Supervised Learning for Fault Clustering in Grid-connected PV Systems Nassim Sabri
114	14:45	Detection of Silicone Oil Concentration Using a Two-Dimensional Photonic Crystal Sensor Sarrah Bendib, Saidani Okba, Abderrahim Yousfi and Nadhir Djeflal
120	14:45	AI-Enabled Wearable IoT Device for Facial Recognition in Student Transportation Systems Dhai Eddine Salhi, Majdi Rawashdeh, Mohamed Tahar Bennai, Awny Alnusair and Ali Karime
135	14:45	Dynamic Performance Evaluation of a Dual-Star Induction Machine Fed by an Indirect Matrix Converter Sifoura Mezoud, Celia Mehanaoui and Ahmed Azib
159	14:45	A Low-Cost and Eco-Friendly Humidity Sensor Based on Keratin Thin Film Hayat Hammouche, Rachida Douani, Ahcène Chaouchi, Saliha Rabhi, Nouara Lamrani and Mourad Laghrouche
172	14:45	Wearable Low-Energy RFID-Integrated Vibration Tag for Silent, Long-Term Sleep Apnea Monitoring and Posture Sensing Rafik Saddaoui, Samir Aoughlis, Karim Oudiai, Mhenna Nacheff, Hamid Hamiche and Mourad Laghrouche
175	14:45	Low Power Energy and Real-Time Localization of Prisoners Inside Correctional Facilities Using Inertial Sensors and Particle Filtering: A Dead Reckoning Approach Samir Aoughlis, Rafik Saddaoui, Karim Oudiai, Hamid Hamiche, Brahim Achour and Mourad Laghrouche

Day 2: Tuesday – December 16, 2025 / Online Session

<i>Session Code:</i>	Track 1
<i>Session Title:</i>	Innovations and Optimization in Wind, Solar, and Hybrid Renewable Systems
<i>Session Time:</i>	15:30 – 17:30
<i>Session Room:</i>	Mammeri_Room01
<i>Session Chairs:</i>	MEZIANE HAMEL & KOUSSAILA MESBAH

ID	Starts at	Title & Authors
68	15:30	A Heuristic Optimization Approach for Wind Turbine Dimensions to Enhance Energy Capture and Reduce Costs Mourad Naidji, Mohamed Ilyas Rahal, Alla Eddine Toubal Maamar, Aicha Aissa-Bokhtache, Maamar Latroch and Radu-Florin Porumb
75	15:45	Advancements in Solar Energy Systems: Innovations in Photovoltaic (PV) and Floating PV Technologies for Decentralized Energy Production Mourad Naidji
103	16:00	Current Sensor Fault Diagnosis of Wind Power System Based on DFIG Chaima Gherari, Farid Berrezzek, Hicham Zaimen and Khaled Khelil
106	16:15	Cold plasma-Based Methane Dry Reforming for Hydrogen Production Abir Azara and Khadidja Khodja
122	16:30	Recent Advancements in Energy Management for Hybrid Renewable Energy Systems Fayçal Hassaini, Said Aissou, Ali Berboucha, Elyazid Amirouche, Yanis Hamoudi, Houssam Deboucha and Abdelhakim Belkaid
152	16:45	Renewable Energy Deployment Efficiency: Analyzing Algeria's Achievement Gap and Optimization Strategies Elmer Arellanos-Tafur and Marcelo Damas-Niño

Day 2: Tuesday – December 16, 2025 / Online Session

Session Code:	Track 2
Session Title:	Advanced Control and Modeling for Wind and PV Energy Systems
Session Time:	15:30 – 17:30
Session Room:	Mammeri_Room02
Session Chairs:	RATIBA FELLAG & MEHAMMED DAOUI

ID	Starts at	Title & Authors
43	15:30	Real-Time Sensorless Control for PMSG Wind Generators Using Step-by-Step Sliding Mode Observer on STM32 Sofiane Benabit, Hocine Khati, Arezki Fekik and Malek Ghanes
52	15:45	Two Step Ahead Finite Set Predictive Torque Control Using Improved Sliding Mode Control for Three Phase Induction Motor Sofiane Brahami, Kaci Ghedamsi, Yanis Hamoudi and Abdelyazid Achour
78	16:00	A Prototype Design of Smart DC Power Device for Solar System Application Khadar Saad, Larbi Brahimi, Mohamed Elbar, Meriem Ghezal, Aya Mebarki and Sif Eddine Souadia
117	16:15	Co-Simulation and Modeling of WT-AFPMSG Based on Ansys Software and MATLAB/Simulink for Wind Energy Application Lina Bouhafs, Salah Tamalouzt, Mustafa Ergin Şahin and Ahcene Bouzida
118	16:30	Enhanced Fault-Tolerant Harmonic Compensation in Grid-Connected PV Systems: A Comparative Study of Analog Filters for Cascaded Multilevel Inverter Control Sabrina Nacef, Haroune Aouzellag, Bessam Amrouche, Rabah Babouri and Kaci Ghedamsi
119	16:45	Enhanced Direct Current Control in Grid-Following Inverters Using Open-Loop Synchronization and PR Regulator for Renewable Energy Integration Lakhder Ayhar, Ahmed Safa, Abdelmadjid Gouichiche and Fayssal Elyamani Benmohamed
129	17:00	A Space Vector Modulation Scheme for Five-Phase to Three-Phase Indirect Matrix Converter for a Wind Power Application Celia Mehanaoui, Sifoura Mezhoud, Ahmed Azib and Nabil Taib

Day 2: Tuesday – December 16, 2025 / Online Session

<i>Session Code:</i>	Track 3 & 4
<i>Session Title:</i>	Advanced AI, Forecasting, and Control Strategies in Modern Energy Systems
<i>Session Time:</i>	15:30 – 17:30
<i>Session Room:</i>	Mammeri_Room03
<i>Session Chairs:</i>	KARIMA OUKFIF & NASSIMA MELLAL

ID	Starts at	Title & Authors
31	15:30	Fault Diagnosis of Induction Motors Using Convolutional Neural Networks Benyamine Arroul, Farid Taffine and Farid Ghilas
101	15:45	Autonomous Photovoltaic/Thermal Solar Solution for Resilient Isolated Habitats Djamila Rekioua, Nabil Mezzai, Toufik Rekioua, Zahra Mokrani, Khoudir Kakouche, Adel Oubelaid and Chokri Ben Salah
109	16:00	Intelligent Hysteresis Current Control Based on Support Vector Machine for SAPF Integrated PV System Under Nonstationary Harmonics Mustapha Meraouah, Faiza Kaddari, Said Hassaine, Youcef Mihoub and Sandrine Moreau
145	16:15	Forecasting Electrical Outages in Adrar, Algeria: Towards a Smart Energy Management System Samia Bentaieb, Driss Nehari, Ammar Neçaibia and Messaoud Hamouda
155	16:30	A Multidisciplinary Systems Engineering Approach to Hybrid Energy Systems Development Khaled Bounar and Salah Badjou
168	16:45	A LADRC-Based Robust Speed Controller for PMSMs in Electric Vehicles With External Disturbance Rejection Amira Slimani, Amor Bourek, Abdelkarim Ammar, Khoudir Kakouche, Wassila Hattab and Samira Heroual
182	17:00	Emerging AI Methodologies in the Renewable Energy Ecosystem: Successes, Challenges, and Future Research Directions (v2) Temitope Bobola and Temitayo Fagbola