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) Track 1 Track 5 Track 6
	Poster Session & Coffee break (14:45 – 15:30)
	Online Session (15:30 – 17:30) Track 1 Track 5 Track 6
2ND DAY- 16 DECEMBER	**Keynote 1 (9:00 – 9:45)** **PROF. HAMID LAGA** **Efficient Deep Learning for 3D/4D Shape Analysis: From Medical Applications to Generative AI**
	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 & Coffee break (14:45 – 15:30)
	Online Session (15:30 – 17:30) Track 1 Track 2 Track 3&4
3RD DAY- 17 DECEMBER	**Panel Discussion 1 (8:30 – 9:30)** **Policy, Regulation and Standards in Renewable Energy** **Energy Transition and Decarbonization Strategies**
	Coffee Break (9:30 – 10:00)
	Panel Discussion 2 (10:00 – 11:00) **Energy Education and Training for the Future Workforce** **Stakeholder Collaboration and Economic Benefits of Renewable Energy**
	Award & Closing Ceremony (11:00 – 12:00)
	Historic Tizi Ouzou and Surroundings (Starting at 12:00) 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

Zoom Information

Room#	Zoom
Mammeri Room01	**https://uva-live.zoom.us/j/62109557560?pwd=16u7zKQ2Vnvp7tHKrvbZ3bvTgett1O.1** **Meeting ID: 621 0955 7560** **Passcode: 497195**
Mammeri Room02	**https://zoom.us/j/95191075939?pwd=dZj4V18csPyDXZoNhdEjWOLztURIpX.1** **Meeting ID: 951 9107 5939** **Passcode: 054356**
Mammeri Room03	**https://us02web.zoom.us/j/84885459983?pwd=c2FqbWdGSkdwRVRZWmcyYURFSllxQT09** **Meeting ID: 848 8545 9983** **Passcode: 063890**

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

Session Code:	Track 1
Session Title:	Renewable Energy Innovation, Control, and Optimization
Session Time:	*11:00 – 12:00*
Session Room:	Mammeri_Room01
Session Chairs:	MEZIANE HAMEL & SAID AISSOU

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

Session Code:	Track 5
Session Title:	Advanced Control, Optimization, and Sustainable Technologies for Renewable Energy Systems
Session Time:	*11:00 – 12:00*
Session Room:	Mammeri_Room02
Session Chairs:	AREZKI FEKIK & MOHAMED LAMINE HAMIDA

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 Bendiouis 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

Session Code:	Track 6
Session Title:	AI-Driven Automation and Robotics for Precision Agriculture
Session Time:	11:00 – 12:00
Session Room:	Mammeri_Room03
Session Chairs:	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

Session Code:	Track 1
Session Title:	Innovations in Renewable Energy Conversion, Optimization, and Integration
Session Time:	13:45 – 14:45
Session Room:	Mammeri_Room01
Session Chairs:	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 Ouartal, 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 Nachef, 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 & SALAH HADDAD**	

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 Bekkouche
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

Session Code:	Track 1, 5 & 6
Session Title:	Smart Energy, Machine Learning, and Power Materials Reliability
Session Time:	14:45 – 15:30
Session Room:	Mammeri_Hall
Session Chairs:	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/Al$_2$O$_3$ Nanocomposites Cables Insulation** Sabrina Amraoui, Abdallah Hedir, Ferhat Slimani, Mustapha Moudoud, Omar Lamrous and Ali Durmus

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

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

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
84	16:45	**Modeling High-Performance $Cs_{0.05}(FA_{0.77}MA_{0.23})_{0.95}Pb(I_{0.77}Br_{0.23})_3$ Perovskite Solar Cells via SCAPS-1D Simulation** Belkacem Hanafi, Abderrahim Yousfi, Rabah Boubaaya, Okba Saidani, Mokhtar Djendel, Sara Bendib, Rafik Zouache
179	17:00	***Numerical Investigation of CsSnCl3 Perovskite Solar Cells Utilizing WS2 and CuSbS2 Transport Layers for Enhanced Efficiency beyond 24%*** Ahmed Benameur, Abderrahim Yousfi, Okba Saidani
186	17:30	**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

Session Code:	**Track 5**
Session Title:	**Metaheuristic Optimization and Control Strategies for Hybrid Systems**
Session Time:	**15:30 – 17:30**
Session Room:	**Mammeri_Room02**
Session Chairs:	**TEDJANI MESBAHI & SMAIL SEMAOUI**

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 Ameur, Ameur 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

Session Code:	Track 6
Session Title:	**Machine Intelligence and Sensing Technologies for Precision Agriculture and Water Management**
Session Time:	**15:30 – 17:30**
Session Room:	**Mammeri_Room03**
Session Chairs:	**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:	NACEREDDINE BENAMROUCHE & MOHAMMED KAOUANE

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, Nachef 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

Session Code:	Track 3&4
Session Title:	Data-Driven Modeling and Optimization in Power Systems
Session Time:	11:00 – 12:00
Session Room:	Mammeri_Room03
Session Chairs:	ADAM BELLOUM & FERHAT SLIMANI

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

Session Code:	Track 1
Session Title:	Intelligent Control and Fault Diagnosis in Photovoltaic Systems
Session Time:	13:45 – 14:45
Session Room:	Mammeri_Room01
Session Chairs:	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** Abdeldjabar Benrabah, Mouaad Belguedri, Mohamed-Amine Yahiaoui, Fayçal Benyamina and Mohamed Benbouzid

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

Session Code:	**Track 2**
Session Title:	**Control and Security in Modern Renewable Energy Systems**
Session Time:	**13:45 – 14:45**
Session Room:	**Mammeri_Room02**
Session Chairs:	ADEL MELLIT & MASSINE GANA

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 Djeffal, Abderrahmane Alem, Massinissa Kloul and Hakim Achour

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

Session Code:	**Track 3&4**
Session Title:	**Intelligent Control and Optimization in Renewable Energy Systems**
Session Time:	**13:45 – 14:45**
Session Room:	**Mammeri_Room03**
Session Chairs:	GHANIA BELKACEM & 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 Noureddine 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

Session Code:	Track 1, 2, 3 & 4
Session Title:	**Smart Sensing, and Intelligent Control in Energy and IoT Systems**
Session Time:	**14:45 – 15:30**
Session Room:	**Mammeri_Hall**
Session Chairs:	**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** Sarra Bendib, Saidani Okba, Abderrahim Yousfi and Nadhir Djeffal
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 Mezhoud, 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 Nachef, 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

Session Code:	Track 1
Session Title:	**Innovations and Optimization in Wind, Solar, and Hybrid Renewable Systems**
Session Time:	**15:30 – 17:30**
Session Room:	**Mammeri_Room01**
Session Chairs:	**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
126	17:00	***Ultra Wideband Hybrid-Shaped Dielectric Resonator Antenna Using (RE-BaTiO$_3$) for Modern Wireless Communication Applications*** Chelghoum Rachid, Brahimi Abdelhalim, Bourouba Nacerdine, Juan Pablo Martínez Jiménez, Bouzit Nacerdine, Zerrougui Raouf, Yousfi Abderrahim, Saidani Okba

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 & NIDAL CHERRAT**	

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

Session Code:	**Track 3 & 4**
Session Title:	**Advanced AI, Forecasting, and Control Strategies in Modern Energy Systems**
Session Time:	**15:30 – 17:30**
Session Room:	**Mammeri_Room03**
Session Chairs:	**KARIMA OUKFIF & MEHAMMED DAOUI**

ID	Starts at	Title & Authors
31	15:30	**Fault Diagnosis of Induction Motors Using Convolutional Neural Networks** Benyamine Arroul, Farid Tafinine 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