Program

18/ 11 / 2025

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025** - Ghardaïa, Algeria | 18-20 November 2025

8 h – 9 h 00	**Registration**
9 h 00 – 09 h 45	**Opening Ceremony (Conference room)** **Prof. Ilyes Bensaci** (Rector of Ghardaïa University) **, Prof. El Hadj Ailam** (Rector of Djelfa University)
09 h 45 – 10 h 45	**Plenary Session 1** **Fast Electric Vehicles Charging Stations Infrastructure, Control, and Grid Interaction** **Professor Haitham A Abu-Rub** College of Science and Engineering, Hamad Bin Khalifa University, Qatar **Chair : Prof. Said Drid**
11 h 15 – 11 h 30	**Coffee break**
11 h 30 – 12 h 30	**Plenary Session 2** **Rethinking Grid Resilience: The Iberian Wake-Up Call** **Professor Dr. Sertac Bayhan** College of Science and Engineering, Hamad Bin Khalifa University, Qatar **Chair : Prof. Abdellah Kouzou**

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025 -**
Ghardaïa, Algeria | 18-20 November 2025

18/ 11 / 2025 / Afternoon : Oral Sessions (A)

	Session 1	Session 2	Session 3
Chairs	**Dr Abdelhalim Rabehi, Dr Fayçal Chouia**	**Pror. Abdallah Zegaoui, Dr Aissa Rebai**	**Pror. A. Kaabech, Dr Mohamed Elbar**
15h35- 15h50	ID 3. Issam Attoui, Nadir Fergani, Adel Boudiaf, A Robust ML-Based diagnostic procedure for rotating machinery under varying noise, speed, and load conditions	ID 49. Kaouthar Othmani, et al., Scada-based analysis of temperature effects on wind turbine performance in hot climates	ID 96. Ahmed Chennana, et al., Enhanced rotor eccentricity faults diagnosis in three-phase induction motor based on transfer learning and machine learning techniques
15h50 - 16h05	ID 7. Chellali Benachaiba, The role of satan's influence coefficient alpha base in qudwa PV MPPT optimization – A Comparative study with IT2FL	ID 56. Djamel Eddine Boukhari, Mourad Kezai, Aleatoric uncertainty-aware deep learning for robust and interpretable facial beauty prediction	ID 101. Abdelouahab Chebbah, et al., ANFIS-PSO model optimization for predicting the output parameters of a two shaft gas turbine
16h05 - 16h20	ID 16. Wahiba Menasri, et al., Vision-localization-based control of a mobile robot a real-time approach	ID 77. Abdelkader Lichti, Seddik Rabhi, Investigation of bio-inspired hybrid approaches to improve localization in wireless sensor networks	ID 108. Achour Benchabane, Modeling and Identification of the Twin Rotor Multiple-Input Multiple-Output System (TRMS)
16h20 - 16h35	ID 31. Abderraouf Bouakkaz, Adel Lahsasna, Salim Haddad, Pv power output prediction using machine learning: an accuracy assessment based on feature pattern selection	ID 91. Abdelhamid Benchikh, et al., Improved leach protocol for energy-saving in wireless sensor networks: A review	ID 138. Kaouthar Othmani, et al., Rule-based clustering and decision tree approach for SCADA-driven early fault detection in wind turbines
16h35 - 16h50	ID 41. Elhassen Benfriha, et al., Thrust vector control of a space launch vehicle	ID 144. Fatima Bachir, Ahmed Hafaifa, Nadji Hadroug, Modeling and performance evaluation of shell and tube heat exchangers using MATLAB/Simulink	ID 151. Batoun Bachir, et al., μ-Synthesis based fault-tolerant control for improved reliability of the wind turbine
16h50 - 17h10	ID 155. Soufiane Djeribie, et al., Predictive modeling of MS5002B gas turbine global efficiency using design of experiments: A case study from hassi rmel field	ID 157. Abdelfetah Ouadah, et al., Machine learning-based remote monitoring of electric vehicle battery systems	ID 158. Abdelfetah Ouadah et al., Enhancing energy management in parallel hevs through fuzzy logic optimization: A simulation-based approach

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025** - Ghardaïa, Algeria | 18-20 November 2025

18/ 11 / 2025 : Poster Sessions

	Session 1	Session 2	Session 3
Chairs	Dr Abdelouahab Khattara, Dr Naas Charrak	Dr A. kina, Prof. Abdelrezak Gacemi	Dr M. Sellah, Dr Muhhamed Abu-Rub
15h 35-16 h00	ID 159. Mohammedi Imad Eddine, Naas Djeddaoui, Abdellah Kouzou, Said Drid, Design and evaluation of a smart home system with home assistant	ID 8. Lahcène Noureddine et al., Neuro-fuzzy controller for speed control of squirrel cage induction motor	ID 40. Miloudi L., et al., Fuzzy logic control for trajectory tracking of a differential drive mobile robot
	ID 11. Mohamed Souissi, Boubakeur Zegnini , Abdelhalim Mahdjoubi, Prediction of AC flashover voltage of glass insulator under environmental pollution using the taguchi method	ID 30. Rym khettabi, Optimization of drilling performance parameters using an experimental design approach	ID 64. Nacer Hacene, Manal Amieur, Boubekeur Mendil, Fitness-Directed Strategy Switching Particle Swarm Optimization for Global Optimization and UAV Trajectory Tracking
	ID 147. Abdelouahab Chebbah, et al., hybrid neuro-fuzzy and NARX modeling for optimization and prediction of two-shaft gas turbine performance	ID 98. Ahmed Chennana, et al., Accurate classification of multiple faults in induction motor using CNN-based features and dimensionality reduction	ID 66. Hedroug Mohamed Elamine, Bdirina El Khansa, Guesmi Kamel, Identification of a Class of Affine Nonlinear Systems by T-S Fuzzy Structure with Lyapunov based LMI Stability Analysis
	ID 169. Tarek Idris Bisker, et al., Real-Time Monitoring of Solar Titan 130 Gas Turbine Based on Vibration Modeling	ID 170. Amel Sabrine Amari, et al., Real-time monitoring of a photovoltaic power plant using fuzzy logic techniques	

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025** - Ghardaïa, Algeria | 18-20 November 2025

18/ 11 / 2025: Virtual Sessions

	Session 1	Session 2	Session 3
Chairs	**Dr Ali Teta, Pror. Amar Benaissa**	**Pror. A. Bellaouar, Dr Belgacem Bekkar**	**Prof. Salam Abudura, Dr Sidali Aissat**
13h00 - 14h15	ID 4. Nora Karkar, et al., Fuzzy logic based intelligent control for irrigation timing	ID 18. Djaber Mosbah, et al., Face recognition based on Triangle model background removal and DCT pyramid decomposition	ID 68. Lavanya M. et al., Machine learning based prediction of delamination factor (Fd) in natural kevlar fiber epoxy composites machined by abrasive water jet (AWJ)
13h15 - 13h30	ID 12. Laid Sehili, Hamaidi Ouarda, Intelligent PID Based model-free control for energy-efficient speed regulation of electric vehicles	ID 46. Prathik Kumaar B. et al., Review of mobilenet variants for effective land use land cover classification : a study with light weight models	ID 69. Lavanya M., Assessment of ensemble learning techniques for predicting delamination factor (fd) in abrasive water jet machined sic-reinforced jute epoxy composites
13h30 - 13h45	ID 17. Zelikha Belhamri et al., A Comparative study of automatic number plate recognition (ANPR) methods	ID 20. Bachir NAAS et al., Design and implementation of a GSM-Based fire alarm system using ATmega328P	ID 70. Lavanya M. Application of machine learning for predicting surface roughness (ra) in abrasive water jet machined ti-6al-4v mmcs
13h45 - 14h00	ID 24. Nasreddine Karour et al., Recent Wireless sensor networks localization techniques: A Review	ID 21. Hamza BENYEZZA et al., IoT-Driven platform for energy meter enhancement and consumption monitoring	ID 71. Lavanya M., Application of machine learning for predicting kerf angle (ka) in abrasive water jet machining in glass fibre epoxy composites
14h00 – 14h15	ID 27. Akram ADNANE et al., Combined robust attitude control and positive position feedback compensation for a flexible satellite	ID 22. Mohammed Ferradj Noureddine Benouzza, Line current analysis as a technique to detect bearing faults in permanent magnet synchronous motors	ID 72. Lavanya M., Machine learning-based prediction of tensile strength in pineapple fiber reinforced polymer composites incorporating cuo filler using random forest, decision tree, and xgboost algorithms
14h15-14h30	ID 60. Younes Belhadjer et al., Comparative evaluation of MPC, FOPID, and TID controllers for autonomous vehicle steering	ID 23. Radia Tabet Derraz et al., Design of an ultra-wideband circularly polarized microstrip patch antenna for sub-6 GHz 5G Mobile applications	ID 73. Lavanya M., Machine learning-based prediction of impact strength in araca fibre epoxy/sic polymer composites using decision tree, random forest and xgboost

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025 -** Ghardaïa, Algeria | 18-20 November 2025

18/ 11 / 2025 : Virtual Sessions

	Session 4	Session 5	Session 6
Chairs	**Dr B. Kourich, Prof. Benalia Mhamedi**	**Dr C.A. Mosbah, Dr Dahmane Djandaoui**	**Dr Fares Fenniche, Dr Fatma Bouchelga**
14h30 - 14h45	ID 28. Fatima Souad Bezzaoucha et al., Real-time damage detection and classification in wind turbine gearboxes using Ferderated learning	ID 45. Kamel Touati, Lamia Cheklat, An integrated AI framework for unsupervised wildfire risk prediction and automated detection	ID 55. Medoukali Hemza et al., Machine learning diagnosis-based of hvdc faults
14h45 - 15h00	ID 33. Sivakumar Rajendran, Automated detection of lung disease using deep learning techniques: a comparative study	ID 47. Wiame Guenaya et al., Design and optimization of an energy storage system for an electric wheelchair with integrated solar assistance	ID 57. Amar Gouri et al., Enhancing reliability in industrial systems through the universal motor controller umc100.3: Failure analysis, prognostics, and risk-based maintenance
15h00 - 15h15	ID 34. Indrawata Wardhana et al., Robust peak detection of shifting fault characteristic frequencies for bearing	ID 50. Ehsan Esmaeeli et al., Optimizing maintenance part allocation using association rules and mixed-integer linear programming	ID 62. Ali Teta et al., Deep learning framework for short-circuit fault detection in photovoltaic systems using infrared thermography
15h15 - 15h30	ID 35. Hiba Abir Chemakh et al., Enhancing horizontal partitioning in DBMS through machine learning-guided metaheuristics	ID 118. Sabah Lecheheb et al., Automated deep learning and incremental retraining-driven MAPE-K analyzer architecture for intelligent self-adaptation	ID 116. Oumaima Gharsa et al., Autonomous landing of a quadrotor on a moving target using a vision-based approach
15h30 – 15h45	ID 39. Nadia Hoggas et al., Advancing milk quality prediction: Dynamic stacking ensemble with quality-aware adaptive sampling	ID 94. Moulay Kheireddine et al., Fault diagnosis of submodule capacitors in modular multilevel converters using intelligent method	ID 123. Wassan Adnan Hashim, et al., Multi-agent energy optimization in connected HEV convoys via MPC and reinforcement learning
15h45 – 16h00	ID 44. Taha Bachir Ammour et al., Bio-inspired swarm intelligence approaches to wireless sensor network optimization: innovations and applications	ID 114. Hafidha Boudouaia et al., Predictive maintenance of rotating machine in petrochemical plants using a hybrid KNN and RPN methodology	ID 131. Abdelhak Djellad et al., Sensor fault diagnosis and switched fault-tolerant control for gas turbines using wavelet features and random forest classifier
16h00- 16h15	ID 119. Sabah Lecheheb et al., Automated deep learning and incremental retraining-driven MAPE-K analyzer architecture for intelligent self-adaptation	ID 82. Amina Azizi, Benabda Amina, Experimental and Numerical Study of the Impact of Shading on a Photovoltaic System with Conventional and Advanced MPPT Controls	ID 86. Amira Lakhdara et al., MPC-based speed tracking for PMSM electric vehicles

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025 -**
Ghardaïa, Algeria | 18-20 November 2025

18/ 11 / 2025 : Virtual Sessions

	Session 7	Session 8	Session 9
Chairs	**Dr Hamed Boukhari, Dr Hemza Medoukali**	**Prof. Kaddouri A. Miloud, Dr Khaled Ferkous**	**Pror. L. Mokrani, Dr Mohammed Aouf**
16h15 - 16h30	ID 132. Tahar Boukra, Smail Bazi, a hybrid approach for RUL prediction of li-ion batteries using GRU-based additive attention	ID 88. PrathikKumaar B., Deepak A., Image based air quality level assessment using mobilenet and ResNet152V2	ID 74. Lavanya M., Prediction of impact strength in coir fibre reinforced epoxy composites using decision tree, random forest, and xgboost model
16h30 - 16h45	ID 129. Belkacem Houara et al., Advanced control of a hybrid PV–wind energy conversion system with STSMC-based dc-link regulation and dpc grid integration	ID 89. PrathikKumaar B., Deepak A. Optimized deep neural network architecture for high-performance weed detection with lightweight MobileNetV3 and enhanced ConvNeXt small	ID 75. Shanmuga Priya S. et al., A hybrid ids (h-ids) model for iomt security: combining machine learning and deep learning techniques
16h45 - 17h00	ID 130. Mehdi Fazilat, Nadjet Zioui, A brief review on quantum-based control strategies for robotic systems	ID 100. Abdelkader Garmat, Kamel Guesmi, Sliding mode control of flying-capacitor voltage in serial multi-cell dc-dc converters	ID 83. Xopo-Rodriguez B. L.. et al., Disturbance rejection control system for stabilizing a driverless two-wheeled vehicle
17h00 - 17h15	ID 156. Abdesattar Mazouzi, et al., Improved efficiency of the fuel cell vehicle energy management system: a multi-phase optimization approach	ID 143. Mouhcen El Hadi Dahmoun, Khaoula Salima Reguieg, Smart energy management of pv–hybrid storage systems for sustainable grid integration	ID 92. Neal Stephen Reon C. Rajinikanth V., Deep-learning scheme to accurately classify the retinal OCT into normal/ AMD with MobileNetV1 than EfficientNetB1
17h15 – 17h30	ID 140. Gamboa-Escobar AJ., et al., Sustainable production and automation: A case study on anaerobic digestion of dairy industry wastewater	ID 141. Neal Stephen Reon C. Rajinikanth V., Improving accuracy with VGG16 based normal/drusen retinal oct images compared with ResNet152 results	ID 85. Bahena-Bustamante E. et al., Takagi-Sugeno unknown input observer for secure communication of nonlinear chaotic systems
17h30 – 17h45	ID 135. Mokhtar Khenfer, improving CSTR performance using a super-twisting sliding mode controller	ID 136. El Arkam Mechhoud et al., Automated risk assessment approach using d-higraph integrated into DCS apllied on fired heater	ID 97. Amina Azizi, Benabda Amina, Enhancement of the electrical energy quality of a grid connected photovoltaic panel
17h45- 18h30	ID 149. Nacera Bekhadda et al., Fuel consumption prediction of non-coplanar orbital transfer using machine learning techniques	ID 165. khaled sahraoui et al., System reconfiguration under open-circuit faults based on five/four-legs converter using zero-sequence voltage	ID 99. Junia Maisa De Oliveira et al., Applying correlation equations to distance matrices to introduce noise and improve model-AI performance

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025** - Ghardaïa, Algeria | 18-20 November 2025

19/ 11 / 2025

8 h 30 – 9 h 30	**Plenary Session 3** **Power electronics and hybrid transformers in distributed energy system - opportunities and challenges** **Professor Mariusz Malinowski** Warsaw Technical University, Warsaw, Poland **Chairs : Prof. Lakhder Moukrani and Professor Mostefa Mohamed-Seghir**
09 h 30 – 10 h 30	**Presentation of IEEE Algeria Section** **Professor Abdellah Kouzou** University of Djelfa, Algeria **Chairs : Prof Soumia KOUADRI MOUSTEFAI**
10 h 30 – 11 h 00	**Coffee break**

Program

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19/ 11 / 2022 : Virtual Sessions Ghardaïa, Algeria | 18-20 November 2025

	Session 1	Session 2	Session 3
Chairs	**Prof. N. Henini, Dr Oussama Moussa**	**Dr Rafik Euldji, Dr Redha Kara**	**Dr Smain Bentouati, Dr Tahar Djellouli**
11h10 - 11h15	ID 102. Joaquin Hernandez Santiago et al., Coupled dynamic–kinematic modeling of an autonomous ground vehicle with aerodynamic forces: drag, side force, and yaw moment	ID 125. Salima Khaoula Reguieg, Mouhcen El-hadi Dahmoun, Performance monitoring and fault diagnosis of piezoelectric accelerometers using optimized sensitivity modeling	ID 139. Bilal Benarabi et al., Real-time communication between different types of plcs and matlab with fuzzy controller integration via OPC: a desalination plant as a case study
11h15 - 11h30	ID 104. Ameur Fethi Aimer et al., Condition monitoring of simultaneous faults in variable speed induction motor operation	ID 124. Sabah Lecheheb, et al., automated deep learning and incremental retraining-driven mape-k analyzer architecture for intelligent self-adaptation	ID 150. Assala Bouguerra et al., Addressing shading challenges: an improved carpet weaver optimization mppt method for effective tracking in shaded circumstances
11h30 - 11h45	ID 167. Derradji Bakria et al., A Hybrid Deep-Machine Learning Approach to Diagnose Partial Shading and Short-Circuit Faults in Solar Photovoltaic Systems using Infrared Thermography Images	ID 122. Ramos Hernandez E. et al., Observer-based estimation for an essential oil extraction system	ID 121. Afouf Oussama et al., Intelligent weather forecasting system based on internet of things for smart cities
11h45 - 12h00	ID 166. Hamza Adaika et al., Enhancing maintenance agility in water desalination plants via explainable MCSA: a case study on workflow integration and diagnostic efficiency	ID 128. Fouad Zebiri et al., Dspace real-time implementation of mppt-based direct method	ID 146. Messaoud Babaghayou et al., UAV LINK: A UAV-assisted communication framework for smart farming in isolated environments using satellite-based edge computing
12h00 - 12h15	ID 163. Ihssane Houhou et al., Comparative analysis of deep learning models for background subtraction on LASIESTA	ID 161. Selma Amrani et al., RT-driftselect: A real-time dynamic feature selection framework for concept drift adaptation in SDN-IoT environments	ID 127. Riad Bendib, et al., Design of an advanced optimal sliding mode controller for a laboratory process using methaheuristic approaches
12h15 - 12h30	ID 162. Rahma Berchi et al., MV-EA-IDS: an optimized dual view, energy-aware ids for battery drain attacks in IoT	ID 145. Hichem Merabet et al., Performance analysis of a three-level z-source converter controlled by a predictive strategy	ID 160. Sarah Benziane, Adaptive anisotropic diffusion with dynamic z-score thresholding for efficient low-contrast defect detection in textured metal surfaces

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025 -**
19/ 11 / 2022 : Virtual Sessions Ghardaïa, Algeria | 18-20 November 2025

	Session 1	Session 2	Session 3
Chairs	**Prof. N. Henini, Dr Oussama Moussa**	**Pror. Tamersit K., Pror. Yahia Bakkeli**	**Dr Smain Bentouati, Dr Tahar Djellouli**
12h15 - 12h30	ID 107. Mohamed Mami et al., Physical modeling and simulation of a thermoelectric device with PID-based control	ID 111. Mounia Ticherfatine, Constrained model predictive control with disturbance predictions for a fast ferry's vertical motions stabilization	ID 117. Soumia Khedimi et al., Language models and bidirectional recurrent neural networks for arabic named entity recognition
12h30 - 12h45	ID 133. Hamza Zerrouki, Dynamic safety evaluation of gas treatment processes	ID 134. Hamza Zerrouki, Fault tree-based bayesian network for probabilistic safety assessment	ID 142. Amar Souissi et al., Optimization of maintenance scheduling for wind farms using genetic algorithm
12h45 - 13h00	ID 153. Lalia Miloudi et al., Design of sliding mode control applied to inverted cart-pendulum for good stability performances	ID 154. Nahed Ghanay, et al., State-of-charge estimation of lithium-ion batteries using a fuzzy c-regression model (FCRM) approach	

Program

IEEE 2025 : The 5th International Conference on Applied Automation and Industrial Diagnostics – **ICAAID 2025** - Ghardaïa, Algeria | 18-20 November 2025

12 h 30 – 13 h 00	**Closing Ceremony**
13 h 00	**Lunch**