CONVENTIONAL ENERGY

RENEWABLE ENERGY

THE SECOND NATIONAL CONFERENCE ON ENERGY AND ITS APPLICATION (NCEA'2026)

24th October 2026 — Ouzera Pole, University of Medea, Algeria

NCEA'2026

FINAL PROGRAM



IEEE Algeria Section

RSDT من أجل بحث علمي مفيد

LERM

Saturday, October 24, 2026 — Program at a glance

Time	Designation		Location
From 08:30	Registration		Main Hall
09:30 – 10:00	Opening Ceremony		Conference Room
10:00 – 10:40	**Plenary Session 1** Chair 1: Prof. Zakaria TRIKI Chair 2: Prof. Younes CHIBA Keynote speaker: Prof. Abdellah KOUZOU, University of University of Djelfa *Virtual Synchronous Generator: Key Enabler of Renewable Energies Integration*		Conference Room
10:40 – 11:00	Coffee break		Faculty Library
11:00 – 11:40	**Plenary Session 2** Chair 1: Prof. Abdellah KOUZOU Chair 2: Prof. Ahmed HAFAIFA Keynote speaker: Prof. M A Hannan, Sunway University *Energy Storage Integrated Microgrid for a Net-Zero Future*		Conference Room
11:45 – 14:15	Oral Sessions (4 parallel sessions)	Room 1 Room 2 Room 3 Room 4	Faculty of Technology
11:45 – 13:30	Poster Sessions	Stand A Stand B Stand C Stand D	Faculty Library
11:45 – 14:15	Online Session	Virtual Room	Online platform
14:30 – 15:00	Closing Ceremony and Awards		Conference Room

CONVENTIONAL ENERGY

RENEWABLE ENERGY

Oral Sessions

Saturday, October 24, 2026 — 11:45 – 14:15 — Rooms 1 to 4

NCEA'2026

Saturday, October 24, 2026: Oral Sessions

Oral Session
Session 1 (Room 1)

RENEWABLE ENERGY (I)

Session Chairs: Prof. Younes CHIBA, Prof. Zakaria TRIKI, Prof. Noureddine HENINI, Prof. Abdelkader MORSLI

Schedule	ID	Title	Presenter
11:45 – 12:00	**7**	Genetic Algorithm-Optimized Neural Network Architectures for AlGaAs Solar Cell IV Prediction	Houda CHABANE
12:00 – 12:15	**10**	Hybrid PSO-GA Optimized Integral Backstepping Control for a PMSG-Based Wind Energy Conversion System	Ahmed BOUAZZAOUI
12:15 – 12:30	**22**	Extreme Learning Machine (ELM) Approach for Maximum Power Point Tracking in Wind Energy Conversion Systems	Safaa MED
12:30 – 12:45	**26**	Parameter Estimation of a Modified Single Diode Photovoltaic Model Using Flow Direction Algorithm	Ismail DIF
12:45 – 13:00	**33**	Improved Nonlinear wind turbine control under wind speed variation and voltage dips	Abdelhaq AMAR BENSABER
13:00 – 13:15	**34**	Power Control Scheme of a Standalone Wind Turbine System with Battery Storage	Abdelhaq AMAR BENSABER
13:15 – 13:30	**38**	Smart control for the stand-alone photovoltaic system Using A Hybrid technique	Abdelhak KECHIDA
13:30 – 13:45	**40**	Optimizing Global Solar Radiation Estimation: A Comparative Study of Empirical and Fuzzy Logic Models	Samah YAHIAOUI
13:45 – 14:00	**60**	Comparative Evaluation of Machine Learning Regressors for High-Efficiency Photovoltaic Maximum Power Point Tracking Under Dynamic Irradiance Conditions	Muntaser Mohammed AL-SHARFI

Saturday, October 24, 2026: Oral Sessions

Oral Session
Session 2 (Room 2)

RENEWABLE ENERGY (II) & ENERGY STORAGE AND APPLICATIONS

Session Chairs: Prof. Redha REBHI. Prof. Mounir Alliche, Prof. Mounir ZIRARI

Schedule	ID	Title	Presenter
11:45 – 12:00	13	The effect of Waste Foundry Sand (WFS) on the physical and mechanical properties of green concrete	Mohamed GUENDOUZ
12:00 – 12:15	14	Formulation of new eco-friendly biomaterials materials with organic waste	Mohamed GUENDOUZ
12:15 – 12:30	30	Numerical Study of Heat Transfer Enhancement of the solar air heater by the Insertion of fins	Adel LAARABA
12:30 – 12:45	58	Numerical and Experimental with Theoretical Prediction of Heat Transfer Performance in an In-Line Pin-Fin Channel for CPU Heat Sink Cooling Applications in Computer Devices	Raed SHAKIR
12:45 – 13:00	50	Equilibrium, Kinetic, and Thermodynamic Analysis of Methylene Blue Adsorption onto K2CO3-Activated White Mulberry Carbon	Taous HAMAD
13:00 – 13:15	63	Bayesian Optimization of a Deep Neural Network for Biogas Production Prediction in a Wastewater Treatment Plant	Fazia AICHE
13:15 – 13:30	68	Comparative Study of Boost-Assisted and Direct-Coupled Photovoltaic Systems for Renewable Hydrogen Production Using an Alkaline Electrolyzer	Fayçal HADJ MIHOUB SIDI MOUSSA
13:30 – 13:45	5	Effect of Sr/Co Co-Doping on the Structural and Electrochemical Properties of Pr2NiO4 Nickelates for Alkaline Fuel Cell Applications	Mouna REKAIK
13:45 – 14:00	17	Emergent Materials For Energetics	Chafia METAOUI
14:00 – 14:15	57	Temperature Effects on the Dynamic Behavior of Aluminum Honeycomb Structures for Energy Systems	Redha AMRI

Saturday, October 24, 2026: Oral Sessions

Oral Session
Session 3 (Room 3)

ELECTRIC, ELECTRONIC AND COMPUTER TECHNOLOGIES & DIAGNOSTICS AND PROGNOSTICS OF ENERGY CONVERSION CHAINS

Session Chairs: Dr. Ahmed MEDJBER, Dr.Smain BENTOUATI, Prof. Abdelhafidh MOUALDIA, Prof. Fethia HAMIDIA

Schedule	ID	Title	Presenter
11:45 – 12:00	**18**	A Review of Intrusion Detection Systems for Smart Grids and Open Challenges	Abdelbacet BRAHMIA
12:00 – 12:15	**19**	Electricity Forecasting in Smart Grids: A Review of Methods, Benchmarks and Open Challenges	Abdelbacet BRAHMIA
12:15 – 12:30	**20**	Multi-Criteria PSO-Based Tuning of MPC Parameters for Differential-Drive WMR Trajectory Tracking	Mohamed Elamine HEDROUG
12:30 – 12:45	**51**	Noise-Robust Sparse Reconstruction of Electric Fields around 400-kV Overhead Transmission Lines Using Gradient-Aware Adaptive Sampling	Takieddine MERIOUMA
12:45 – 13:00	**52**	LSBoost Model for Electricity Consumption Forecasting	Abdelhak FLIH
13:00 – 13:15	**65**	Experimental Validation and Electromagnetic Characterization of Graphite-Based Absorbing Materials Using Waveguide Measurements	Khadidja BENKESSIRAT
13:15 – 13:30	**23**	Demagnetization Fault Diagnosis Improvement in PMSM using IIR Filter	Zakaria GHERABI
13:30 – 13:45	**24**	Enhanced Eccentricity Fault Diagnosis in PMSM Using Highly Selective IIR Filter	Zakaria GHERABI
13:45 – 14:00	**25**	Current-Based Discrimination of Stator Winding Faults and Magnetic Saturation in PMSMs	Zakaria GHERABI
14:00 – 14:15	**45**	Experimental Investigation of ZnO Nanoparticles for Enhanced Dielectric Performance of Transformer Oil in High-Voltage Energy Systems	Ryad HARIDI

Saturday, October 24, 2026: Oral Sessions

Oral Session
Session 4 (Room 4)

CONVENTIONAL ENERGY & ENVIRONMENTAL IMPACTS OF ENERGY TECHNOLOGIES

Session Chairs: Dr. Meriem SEDIRI, Dr. Malika AMARI, Dr. ……

Schedule	ID	Title	Presenter
11:45 – 12:00	**21**	SPH-Based Investigation of Material Pairing Effects on Particle Impact and Adhesion in Cold Spray Coating	Amel HADJERI
12:00 – 12:15	**67**	Adaptive Facades: Enhancing Energy Efficiency in Hot Climate Office Buildings	Djamel ZEKRAOUI
12:15 – 12:30	**79**	Sustainable Construction Materials Using Waste Cement Dust and Glass Powder: Toward Energy-Efficient Applications	Nacira SAOUDI
12:30 – 12:45	**2**	Diatomite -Based Nanocomposite for Advancement of Wastewater Treatment: A Comprehensive Review	Walid REZIG
12:45 – 13:00	**32**	Valorization of White Ceramic and Windshield Glass Waste in Flowable Sand Concrete	Lotfi SAKHRI
13:00 – 13:15	**39**	Albedo Measurement of Bitumen Felt Coated with Colored Embossed Aluminum Sheets Using Smartphone imaging and ImageJ Analysis	Omar BOUKSANI
13:15 – 13:30	**53**	Solar energy-driven photocatalytic degradation of Congo Red and sulfamethoxazole using TiO_2–ZnO supported on red brick waste: optical properties and water matrix effects	Ghania MOUSLI
13:30 – 13:45	**90**	Adsorption of Methylene Blue onto a Plant-Based Biosorbent: Kinetic and Isotherm Investigation	Dalila BADIS
13:45 – 14:00	**89**	Evaluating Advanced Energy Recovery From Municipal Household Waste :Integrating one health approach and multicriteria decision analysis	Noureddine HENINI

CONVENTIONAL ENERGY

RENEWABLE ENERGY

Poster Sessions

Saturday, October 24, 2026 — 11:45 – 13:30 — Faculty Library, Stands A to D

NCEA'2026

Saturday, October 24, 2026: Poster Session

Poster Session
Faculty Library (Stand A)

RENEWABLE ENERGY & ENERGY STORAGE AND APPLICATIONS

Session Chairs: Prof. Abdrezzak GACEMI, Dr. Wahiba MENASRI, Dr. Hamza BENYEZZA,

Schedule	ID	Title	Presenter
11:45 – 13:30	**37**	Optimal PV-ESS Power Support in Conventional Distribution Networks for Accommodating Additional Loads	Mohamed OUAIL
	64	Comparative Analysis of PQ and DQ Control Strategies for a PV-Supplied Three-Phase Shunt Active Power Filter	Amina MAHAMMEDI
	66	Dynamic Performance of a Crowbar-Protected DFIG Wind Turbine Under Severe Grid Voltage Dips and Variable Wind Conditions	Benyoucef KOUDRI
	81	Boosting Energy Quality in Photovoltaic Systems with integrated Energy Storage	Maroua BOUZIANE
	56	Numerical modeling of mixed convection with coupled heat and mass transfer for nanofluids in porous media	Nassima MAMI
	84	Numerical Simulation of a Passive Battery Thermal Management System Using Phase Change Materials for Electric Vehicle Safety and Performance	Abdelkrim TERFAI

Saturday, October 24, 2026: Poster Session

Poster Session
Faculty Library (Stand B)

CONVENTIONAL ENERGY & DIAGNOSTICS AND PROGNOSTICS OF ENERGY CONVERSION CHAINS

Session Chairs: Prof. Mouloud BOUMAHDI, Dr. Yasser CHIKER, Dr. Kawthar HADJA

Schedule	ID	Title	Presenter
11:45 – 13:30	**9**	Working fluid selection for a solar ORC–VCC cogeneration system: power versus cooling	Merouane SAKA
	75	Hierarchical Control and DC-Bus Regulation of a Five-Port MIMO DC–DC Converter	Noureddine HENINI
	76	Power-Sharing Analysis of a Five-Port MIMO DC–DC Converter for a DC Bus with Photovoltaic Generation and Hybrid Energy Storage	Noureddine HENINI
	77	UPQC for Voltage and Current Harmonics Mitigation Using NPC Multilevel Inverters	Noureddine HENINI
	78	A Simplified Deadbeat-Based Predictive Torque Control for Five-Phase Permanent Magnet Synchronous Motor Drives Using Space Vector Modulation	Noureddine HENINI
	87	An MLP-Based Approach to Electric Vehicle Battery Fault Diagnosis	Amel ABBADI

Saturday, October 24, 2026: Poster Session

Poster Session
Faculty Library (Stand C)

ELECTRIC, ELECTRONIC AND COMPUTER TECHNOLOGIES

Session Chairs: Dr. Abdelkrim KHERKHAR, Dr. Benyoucef KADDOUR, Dr. Noureddine OULDCHERCHALI, Dr. Mohamed GUEDMANI, Dr. Farouk BETACHE

Schedule	ID	Title	Presenter
11:45 – 13:30	4	An IoT-Based Smart Weather Station for Real-Time Environmental Monitoring	Rania DJEHAICHE
	8	Hybrid PSO–EMIQP Optimization for Coordinated EV Charging Station and Distributed Generation Planning in Radial Distribution Networks	Youcef TAMI
	15	Software and Hardware Implementation of Sample Adaptive Offset in-loop Filter Semantics in VVC/H.266 Codec	Wahiba MENASRI
	27	Real-Time Helmet Detection on Embedded Systems Using Edge AI	Fatima Zohra BAOUCHE
	36	Integration and Energy Management of Battery Energy Storage Systems in Urban Railways	Fawzia BERROUM
	61	Design and Implementation of an ESPduino-Based Automatic Wire Cutting and Stripping Machine	Ibrahim BENTCHIKOU
	71	Electromagnetic Interference of Power Transmission Lines on Buried Pipelines under Normal, Short-Circuit and Lightning Conditions	Khadidja BOUALLAG
	74	A Simplified Deadbeat-Based Predictive Torque Control for Five-Phase Permanent Magnet Synchronous Motor Drives Using Space Vector Modulation	Wahiba MENASRI
	82	A Simplified Deadbeat-based Predictive Torque Control for a Two-level Inverter Fed Two parallel-Connected Five-Phase PMSM Drives using SVM	Wahiba MENASRI
	83	Intelligent Digital Solutions for Humanitarian Assistance and Disaster Management	Fatima Zohra BAOUCHE
	85	Deep Learning-Based Aerial Inspection of Photovoltaic Panels	Fatima Zohra BAOUCHE

Saturday, October 24, 2026: Poster Session

Poster Session
Faculty Library (Stand D)

ENVIRONMENTAL IMPACTS OF ENERGY TECHNOLOGIES

Session Chairs: Dr. Farouk ZIANE, Dr. Rachid BOUGHEDAOUI, Dr. Souad TAHAR , Dr. Fatmazohra SAIDOUNE

Schedule	ID	Title	Presenter
11:45 – 13:30	41	Study of Removal Modeling of Tartrazine and Blue 5G Dyes on Activated Carbon by Artificial Neural Network	Meriem SEDIRI
	48	Real-Time Monitoring and Bidirectional Control of an Axpert Inverter in a Photovoltaic Energy System Using Python and the ThingSpeak IoT Platform	Farouk BETTACHE
	49	Solar Photocatalysis for Water Remediation: Assessing the Environmental Benefits of Green-Synthesized TiO_2-ZnO Heterojunctions in Dye-Contaminated Ecosystems	Ghania ABID
	62	Eco-Friendly Zeen Oak-Derived Physically Activated Biochar for Sustainable Cr(III) Removal from Water: A Kinetic Study	Karima SEFFAH
	73	Recurrent Neural Network Prediction of Chloride Permeability in Fly Ash Concrete: A Contribution to Sustainable Infrastructure	Fatima KECHROUD
	86	Valorization of Oily Petroleum Sludge in Asphalt Mixtures: Effects on Bitumen and Marshall Properties	Dihia BELLACHE

CONVENTIONAL ENERGY

RENEWABLE ENERGY

Online Session

Saturday, October 24, 2026 — 11:45 – 14:15 — Virtual Room

NCEA'2026

Saturday, October 24, 2026: Online Session

Online Session
Virtual Room (link: ……)

ALL CONFERENCE TOPICS

Session Chairs: Dr. Adel YAHIAOUI, Dr. Omar LABBADLIA, Dr. Zakariya MADAOUI, Dr. Hamid MEKHTICHE

Schedule	ID	Title	Presenter
11:45 – 12:00	**1**	An Adaptive AI-Driven Duty-Cycling Scheme for Low-Power IoT Real-Time Environmental Monitoring	Aicha BENYAHIA
12:00 – 12:15	**3**	Hourly variation of apparent hydrogen-collection efficiency in an outdoor metal-oxide-assisted alkaline electrolysis cell	Sara ELBOUCHE
12:15 – 12:30	**12**	A Condition Monitoring Framework for Vibratory Separation of Copper Plastic Cable Waste	Abdennour BOUZIANE
12:30 – 12:45	**42**	Integration of Photovoltaic Systems with Seawater Reverse Osmosis Desalination Plants: Design, Sizing, and Performance Assessment	Lamine MEDEKHEL
12:45 – 13:00	**46**	Phase Angle Characteristics of Transformer Mineral Oil Enhanced by ZnO Nanoparticles	Kaissa HAMOUIMECHE
13:00 – 13:15	**54**	Current Injection and Harmonic Compensation by a Predictive Direct Power-Controlled Shunt APF for a Hybrid Fuel Cell/Battery/PV DC Bus	Billel BOUROUIS
13:15 – 13:30	**59**	An Experimental and Numerical Investigation of Developing Transition Flow Heat Transfer in Microchannel Heat Sinks for CPU Thermal Arrangement	Raed SHAKIR
13:30 – 13:45	**69**	Sensor fault diagnosis in wind turbines using a nonlinear observer	Mohammed ABBAS
13:45 – 14:00	**70**	Comparative Performance Evaluation of MLR, Polynomial Regression, and k-NN Models for Short-Term Wind Speed Prediction in Adrar	Oualid SLIMANI
14:00 – 14:15	**72**	Theoretical Prediction of the Thermodynamic Properties of the Binary CoP3 and Ternary FeCoP3 Skutterudites Materials	Riadh ZOUABLIA