



7th International Symposium on New and Renewable Energies SIENR 2025

Unit of Applied Research in Renewables Energies
Ghardaïa – Algeria, October 15-16, 2025



Symposium program

Wednesday, October 15, 2025

- 08 : 00 - 09 : 00 – Registration and reception of participants
– Symposium opening and welcome speech
Director of URAER
Director of EPST/CDER
General Director of DGRSDT / MESRS
- 09 : 00 - 09 : 30

Plenary session I. Session chairs : Pr. DJAFER Djelloul, Pr. HAMOUDA
<https://meet.google.com/jaa-vxqe-pso>

Plenary Conference 1
09 : 30 - 10 : 15

Pr Ahmed HADJADJ URERMS / CDER - Adrar, Algeria
What role can renewable energy play in the oil and gas industry



Plenary Conference 2
10 : 15 - 11 : 00

Pr Adel MELIT University of Jijel, Algeria
Artificial Intelligence of Things (AIoT) for photovoltaic farms: Advancing smart monitoring and cyber-physical security

11 : 00 - 11 : 30

Coffee break

Plenary session II. Session chairs : Pr DIAF Said, Pr AGROUI Kamel
<https://meet.google.com/vpv-joeu-pwp>

Plenary Conference 3
11 : 30 - 12 : 15

Pr. Ali CHEKNANE University of Laghouat, Algeria
Nanomaterials for Solid-state Hydrogen Storage: State of the art, Challenges and Perspectives

Plenary Conference 4
12 : 15 - 13 : 00

Pr. Davide Papurello University of Torino, Italy
High-temperature materials for CSP Receivers: Experimental insights and material selection challenges

13 : 00 - 14 : 00

Lunch break



Parallel oral sessions 14 : 00 - 15 : 30

Photovoltaic 1 Session chairs : Pr. GAMA Amor, Pr. ZEAGAOUI Abdellah

Room 1 : <https://meet.google.com/ywz-qimv-osi>

PV09 (online) : Using SILVACO TCAD to enhance the In_{0.62}Ga_{0.38}N Solar Cell by adding a BSF layer

Amine Hadjouni, Arslane Hatem Kacha,
Boudali Akkal, Zineb Benamara, Mekki
Abdelkader Benamara

University of Sidi
Bel-Abbès

PV07 (online) : Advanced Network Voltage Control for Grid Connected PV Systems Using Smart PV Inverter Capabilities

Ismail Bendaas, Salim Bouchakour, Kada
Bouchouicha, Saliha Boulahchiche,
Abdelhak Razagui, Amar Hadj Arab

CDER

PV03 : Performance Assessment of Single and Dual Axis Solar Tracking System

Sakina Atoui, Kherrou Loubna, Ouail
Yousra, Said Boudjana

UDES- Bousmail,
Tipaza

PV04: Optimal Parameter Estimation for an Enhanced Self-Correcting Battery Model Based on Real Electric Vehicle Drive Cycle Profile

Badis Lekouaghet, Hani Terfa

CRTI, Algiers

PV08 (online): Experimental Implementation of an Advanced Solar Charge Controller for Photovoltaic Systems with Battery State-of-Health Dynamic Tracking and Adaptive Compensation

Elouahab Bouguenna

CDER, Algiers

PV18: Comparative Analysis of Hybrid Forecasting Models for Energy Consumption Based on Signal Decomposition

Fatima Zohra Oulad Laid, Khaled Ferkous,
Soundous Sekayar

University of
Ghardaia



Parallel oral sessions 14 : 00 - 15 : 30

Thermal Session chairs : Pr. BENSEDDIK Abdelwahab, Pr: BOUARAOUR Kamel
Room 2 : <https://meet.google.com/jdr-taqj-iwq>

TH 01: Thermal behavior of mortar incorporated with natural and textile fibers	Amira Dellagi, Rabeb Ayed, Salwa Bouadila	Univ of Tunis
TH11 : Investigation of a novel solar chimney concept	Lounici Mohand Said, Daimallah Ahmed, Kebabsa Hakim, Lebbi Mohamed	University of Boumerdes
TH05: Evaluate the impact of the optimum inclination for the installation of thermophotovoltaic modules	Rachid Djeflal, Nadir Chenini, Nadia Ramdani, Imed Eddine Nezli, Tahar Bachaouat	URAER- Ghardaia
TH12: Experimental Characterization of a Natural Sugar Alternative (Erythritol) for Latent Heat Storage in Solar Cookers, using the T-History Method.	Merouane Zedairia, Mahfoud Kadja, Arezki Harmim, Abdelkarime Haida	University of Constantine 1
TH17: Numerical Analysis of Multi-Glass Collector Effects on Flow Behavior in Small Solar Chimney	Daimallah Ahmed, Lebbi Mohamed, Lounici Mohand Said, Boutina Lyes	University of Boumerdes
TH18: Numerical Study Of The Hot Airflow In A Mixed Solar Dryer	Ahmed Djebli, Ouassila Badaoui, Haddad Brahim	UDES- Bousmail, Tipaza
TH19: Relationship between geometric shapes of hollow bricks and their thermal efficiency	Nacéra Benarouba, S. Belgherras, S.M.A. Bekkouche, M.K. Cherier, M. Hamdani	University of Ghardaia
TH16: Experimental Investigation of Vapor Condensation and Removal in a Box Solar Cooker Using a Pressure Cooker Integrated with a Flexible Pipe	Lobna Recioui, Fatiha Yettou, Amor Gama	University of Ghardaia

Coffee break

15 : 30 - 16 : 00

Poster Session I

Session chairs : Pr. BOUCHAKOUR Abdelhak, Pr. KHELIFI Reski

PV05: Study of GaAs beta voltaic cell using Monte Carlo Method	Azeddine Bouziane, Talhi Abdelkrim, Tiouti Zakia	University of Bechar
PV10: Performance Enhancement of Solar Systems for Hybrid Energy Storage Integration	Zahra Mokrani, Djamilia Rekioua, Adel Oubelaid, Khoudir Kakouche, Chafiaa Serir, Toufik Rekioua, Nabil Mezzai, Talit Belhouli, Radia Abdelli	University of Bejaia
PV11: Application of Sliding Mode and SVM-Based Robust Control to DFIGs in Wind Power Systems	Amrouche Karim, Abdelli Radia, BouzidaAhcene	University of Bejaia
PV12: Control of Magnetic Induction Intensity and Optimization below Overhead High Voltage Electric Power Transmission Lines	Salah-Eddine Houicher, Rabah Djekidel, Sid Ahmed Bessedik	University of Laghouat
PV06: Effective control and power flow management strategy for stand-alone wind system based on DFIG with storage	Oualid Djoudi, Sofia Belaid Lalouni, Salah Tamalouzt	University of Bejaia
PV14: Experimental Evaluation of BLDC Motor Integration in Solar-Powered Water Pumping Systems	Nouredine Benbaha, Abdelhak Bouchakour, Hachemi Ammar	URAER-Ghardaia
PV15: Hybrid MPPT - Simple boost control of Z source inverter integrated in standalone PV systems	Boukebbous Seifeddine , Kerdoun Djallel, Benbaha Nouredine, Hachemi Ammar, Bouchakour Abdelhak, Koliai Meriem, Goumidi Imen	University of Constantine



PV24: Performance Enhancement of Solar Modules in Arid Climates: Dust Mitigation Strategies in Ghardaïa, Algeria

Reski Khelifi, Tawfiq Chekifi, Abdelkader Si Tayeb, Mohamed Lebbi, Sofiane Kherrou, Lyes Boutina, Khaled Touafek

URAER-Ghardaia

PV26: Improving natural ventilation for photovoltaic panels mounted in rows and on stairs using a double-pass airflow system

Mohamed Lebbi, Lyes Boutina, Khaled Touafek, Reski Khelifi, Tawfiq Chekifi, Sofiane Kherrou, Daimallah Ahmed, Lounici Mohand Said

URAER-Ghardaia

PV13 : Hardware-in-the-Loop Implementation for Enhanced Energy Management in Grid-Connected PV Systems

Antar Beddar, Farid Hadjrioua, Issam Abadlia, Hadj M. Idriss, Djafer Djelloul, Reski Khelifi, Samir H Oujana

URAER-Ghardaia

16 : 00 - 21 : 00

Tourist Visit + Dinner offered by URAER to participants



Thursday, October 16, 2025

Plenary session III. Session chairs : Pr. MELLIT Adel, Pr CHEKNANE Ali
<https://meet.google.com/ivh-yabp-fja>

Plenary Conference 5 09 : 00 - 09 : 45	Pr Kamel AGROUI CRTSE/ Algiers, Algeria Polymer encapsulant embedded with nanomaterials for photovoltaic module encapsulation process
Plenary Conference 6 09 : 45 - 10 : 30	Pr Said DIAF CDER- Algiers, Algeria The Energy Transition: Between Opportunities and Hidden Realities
Plenary Conference 7 10 : 30 - 11 : 15	Pr Sidi M ^{ed} El Amine BEKKOUCHE URAER- Ghardaia, Algeria Main pathways for the emergence of passive and active energy solutions in building projects

Coffee break 11 : 15 - 11 : 45

Poster Session II Session chairs : Pr. DAOUD Djamel, Pr CHERIER Kamel

N02: Study Of Mechanic, Electronic and Optical characteristics for AuBiF3 material	Nassah Younes, Benmakhlouf Abdenmour, Remache El Ouardi	University of Laghouat
N03: State of the art of Hydrogen Production by Photocatalysis	Sabah Menia, Fetta Danane, Mounia Belacel, Maroua Benlembarek	CDER- Algiers



N08: Prediction of AC Flashover Voltage of Glass Insulators Under Environmental Pollution Using the Taguchi Method	Mohamed Souissi, Boubakeur Zegnini and Abdelhalim Mahdjoubi	University of Laghouat
TH06: A socio-economic approach to agricultural drying activities in the Ghardaïa region of the Sahara	Bensaha Houcine, A. Benseddik, D. Daoud, A. Bensaha	URAER-Ghardaia
TH10: Study of the Thermal Behavior of a Workplace in an Arid Region: Case Study	A. Oudrane, A. Bada, B. Aour, Hamouda M	University of Adrar
TH13: Experimental Investigation of a Box Solar Cooker: Enhancing Performance through Optimized Glass Cover Positioning	Assam Benbaha, Fatiha Yettou, Amor Gama, BoubakeurAzoui, Ahmed Hamada	University of Batna
TH03: Forced Convection Study in a Solar Collector Tube for Water Desalination Preheating	Ahmed Youcef, Benseddik Abdelouhab, Gahgah Morad, Saim Rachid, Korti Med Choukri, Hadidi Abdelkader	University of Ghardaia
TH07: Experimental Study on the Effect of Thermoelectric Cooling Position on the Performance of a Basin-Type Solar Still	Rabah Kerfah, Khaled Yahia Mahammed, Kamel Ferhat Benabelazziz, Ali Laldji	University of Khemis Miliana
TH08: Enhancing thermal performance of a solar air heater using finned glazing	Laaraba. Adel	University of Batna1
TH09: Experimental study of the effect of perforated fins on the improvement of PCM melting processes	Khaoula Missoum, Abdel Illah Nabil Korti, Hocine Guellil	University of Tlemcen
TH15: Heat Transfer Enhancement in Solar Air Heaters Using Porous Ribs	Kherrou Sofiane, Zarrit Rida, Boutina Lyes, Khelifi Reski, Lebbi Mohamed, Dadda Bachir	URAER-Ghardaia

TH20: A CFD based simulation for determining the optimum position of a roof-top solar chimney for building ventilation

Toufik Chergui, Abdelhamid Boualit, Allal Babou, Rida Zarit

URAER-Ghardaia

N04: Study of the Electrostatic Response of barriers with a Self-Cleaning Surface

Talit Belhoul, Sara Alouache, Chafiaa Serir, Zahra Mokrani, Radia Abedelli

University of Bejaia

N06: Numerical simulation of non-toxic aerospace propellant decomposition based on high-test peroxide (HTP) in a monopropellant system

Fadela Benzenine, Djamal Darfilal, Chakib Seladji, Othman Bendermel

University of Tlemcen

N11: The influence of physical parameters on the evolution of the absorbed hydrogen mass in a metal hydride reactor

Dadda Bachir, A. Babbou, R. Zarrit, M. Aissa, S. Kherrou, K. Benyelloul, Y. Bouhadda, A. Bammoune

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Parallel oral sessions 11 : 45 - 12 : 30

Photovoltaic 2 Session chairs : Pr. GUAIRAA Kacem, Pr. ABDELKRIM Thameur
Room 1 : <https://meet.google.com/jnx-yiwf-jip>

PV23: Modeling and simulation flexible graphene/Si Schottky junction solar cells	Zahra Meziani, Mourad Rahmani, Zohir Dibi	University of Batna
PV19 : Performance Evaluation of P&O, improved Sliding Mode, and Fuzzy Logic MPPT Methods in PV Systems: A Comparative Study under uniform and non-uniform conditions	Ahmed Chebri, Fatima Zohra Boukahil, Assala Mouffouk, Boubekeur Azoui	HNS-RE2SD Batna
PV 20: Sizing of a hybrid energy system based on a fuel cell and a generator to power a home in southern Algeria	K. Touafek, M. Lebbi, L. Boutina, H. Haloui, Y. Houam, A. Si Tayeb, R. Khelifi, T. Chekifi, S. Benkacali	URAER-Ghardaia
PV 21: Hybrid Forecasting of Photovoltaic Production: A Comparative Study of Short- and Medium-Term Horizons with Signal Decomposition	Soundous Sekayar, Khaled Ferkous, Fatima Zohra Oulad laid	University of Ghardaia
PV 22: A Novel Distributed Two-Stage Photovoltaic Conversion Cascade Using a Single-Phase Five-Level I-Type NPC Inverter with Integrated Energy Storage	T. Abdelkrim, K. Benamrane, B. Benlahbib, N. Bouarroudj, A. Lakhdari, A Borni, B. Bezza, S. Hassani, A. Bahri	URAER-Ghardaia
PV17: Enhancing PV Performance in Desert Regions through Replaceable Transparent Protective Films	Abdelkader Ouarniki, Gama Amor, Mosbah Charaf Abdelkarim	University of Ghardaia



Parallel oral sessions 11 : 45 - 12 : 30

New Energy **Session chairs : Pr. BOUAHADA Youcef, Pr. BELAOUAR Abderahmane**
Room 2 : <https://meet.google.com/cow-resr-ynh>

TH01 : Design and Performance Evaluation of a Forced Convection Solar Dryer for Fig Dehydration	Ganesh Korwar	Univ of New delhi, India
N05: Optimization of factors affecting biogas production and valorization of compost using dairy waste water	Benmehdi Houcine, Bensmail Larbib, Khoudja Salima, Bentaleb Zahraa, Lasbet Mohamed, Badri Abdelkader	University of Bechar
N07: Study of Temperature Distribution and Current Density in an Inductively Coupled Plasma Torch at Atmospheric Pressure in Local Thermodynamic Equilibrium	Sayah Merazi, Saad Chaouch, Hani Terfa, Leila Belgacem, Maamar Hakem, Younes Hamache	CRTI- Algiers
N09: Optimal Design of an IPM Motor for Electric Vehicles Using GPR Surrogates and NSGA-II: A Rotor Notch Geometry Sensitivity Approach	Hani Terfa, Saad Chaouch, Sid-Ali Rand, Younes Hamache, Badis Lekouaghet, Sayah Merazi	CRTI- Algiers

12 : 30 - 13 : 00

Closing ceremony

13 : 00 - 14 : 00

Lunch

14 : 00 - 15 : 00

Scientific visit to URAER

