



JOURNAL OF RENEWABLE ENERGIES

Revue des Energies Renouvelables

Volume 27, Issue 2

December 2024

**Published by the
Renewable Energy Development Center**

(Centre de Développement des Energies Renouvelables)

BP. 62 Route de l'Observatoire Bouzaréah 16340, Algiers, Algeria

ISSN: 1112-2242

EISSN: 2716-8247

Legal Deposit 1177-98

Journal of Renewable Energies

Director of Publication

Nouredine Abdelbaki, Professor
Renewable Energy Development Center (CDER), Algiers, Algeria
n.abdelbaki@cder.dz

Editorial Team

Editor in chief:

Amar Hadj Arab, Director of Research
Renewable Energy Development Center
(CDER), Algiers, Algeria
a.hadjarab@cder.dz

Co-Editor in chief:

Ouahiba GUERRI, Director of Research
Renewable Energy Development Center
(CDER), Algiers, Algeria
o.guerri@cder.dz

Associate Editors:

Solar PV and Hybrid systems

Mohamed BENBOUZID, Professor
Electrical Engineering, University of Brest,
France
mohamed.benbouzid@univ-brest.fr

Notton Gilles, Professor
Université de Corse Pascal Paoli, France
notton@univ-corse.fr

Solar Thermal

Mahmoud Bourouis, Professor
Universitat Rovira i Virgili - Campus
Sescelades: Tarragona, Spain
mahmoud.bourouis@urv.cat

Wind Energy systems

Fateh Ferroudji, Director of Research,
URER MS, Renewable Energy Development
Center, (CDER), Algiers, Algeria
f.ferroudji@cder.dz

Bioenergy and Environment

Noureddine Yassaa, Professor
Commissariat aux Energies Renouvelables et à
l'Efficacité Energétique, Algiers, Algeria
n.yassaa@cerefe.gov.dz

Dr Majda Amina AZIZA, Director of Research
Renewable Energy Development Center
(CDER), Algiers, Algeria
m.aziza@cder.dz

Technical support:

Mohammed Debbache
Renewable Energy Development Center (CDER), Algiers, Algeria
m.debbache@cder.dz

Secretary:

Rafik Halalchi
Renewable Energy Development Center (CDER), Algiers, Algeria
s.revue@cder.dz

Table of Contents

Experimental Study on Enhancing Lead Oxide Photoelectrochemical Efficiency with Tin Substrate Modifications for Renewable Energy Systems <i>T. Dilmi, A. Dakhouché, H. Latelli and A. Saoudi</i>	137 - 150
Simulation of Doubly Fed Induction generator (DFIG) for Steady state analysis when connected to a wind farm for power system stability <i>N.E. Mbabit, D. Afungchui, J. Ebobenow, A. Helali and C. Tabod</i>	151 - 171
Quantifying Measurement Uncertainty in Photovoltaic Module Performance at Standard Test Conditions: A Machine-Based Approach <i>A. Chahtou, E. Kouadri Boudjelthia, N. Belhaouas, F. Mehareb and Z. Latreche</i>	173 - 189
Charge carrier mobility and the recombination processes within a bulk heterojunction organic solar cell exhibiting disordered hopping <i>T.A. Mbanga, D. Afungchui, J. Ebobenow, A. Helali and N.A. Arreyndip</i>	191 - 212
Applying the Generalized Pareto Principle to Predict Peak Temperatures in Northeast Algeria <i>A. Ziari, A. Medjerab and M.T. Camacho Olmedo</i>	213 - 227
Analysis of a simple vapor compression and ejector refrigeration systems working with eco-friendly refrigerants <i>H. Aissani, S. Zid and M. Bencharif</i>	229 - 242
IoT and AI for Real-time Water Monitoring and Leak Detection <i>L. Guezouli, L. Guezouli, M.B. Djeghaba and A. Bentahrou</i>	243 - 281
Evaluating the Performance of Parabolic Trough Solar Power Plants in Algerian Deserts: A Case Study of Andasol-1 <i>K. Ikhlef and S. Larbi</i>	283 - 295
Influences of ternary ethanol methanol gasoline mixtures on the performance of a spark ignition engine <i>H. Nsenga Mundisila, Y. Dilubenzi Watemuka and H. Mbuyi Katshiatsia</i>	297 - 317
Smart Integration of Renewable Energy into Transportation: Challenges, Innovations, and Future Research Directions <i>M. Azhar Sayeed and K. Manikandan</i>	319 - 337
Investigation on Syngas production from forest Biomass (Sapele, Sypo and Ayous) wood in the downdraft gasifier using Aspen plus and IC engine integration <i>D.D. Djimbi Makoundi and L. Zhang</i>	339 - 358
Long Short-Term Memory Approach to Predict Battery SOC <i>R. Firke and M.k. Gupta</i>	359 - 372
Brief Review of Current Research on Electrical Grids <i>A. Djoudi, S. Bacha, A. Rennane, S. Bellarbi and A. Hadj Arab</i>	373 - 404
Impact of weather variables on roof top green energy production in a multibuilding, multi-capacity ecosystem – A regression based study of 'SAI MITRA' <i>R. Prusty and N. Sivakumar</i>	405 - 429

Acknowledgments

The editor-in-chief thanks the editorial staff of the journal, the reviewers, and the administration of the CDER who contributed to the publication of this issue.