



2023



Online ISSN: 2710-849X

Algerian Journal of Renewable Energy and Sustainable Development

AJRESD

Volume: 5
No: 2
June 2023

<https://ajresd.univ-adrar.edu.dz>
ajresd@univ-adrar.edu.dz

Postal address: LDDI Laboratory, University of Adrar
National road Number 06 -01000 ADRAR
ALGERIA





Algerian Journal of Renewable Energy and Sustainable Development



Algerian Journal of Renewable
Energy and Sustainable
Development
published by
Adrar University

ISSN: 2710-849X (Online) **Journal homepage** : <https://ajresd.univ-adrar.edu.dz/index.php>



Full Issue PDF Volume 05, Issue 02



Published online: 15 December 2023



[Submit your article to this journal](#)



[View Crossref data](#)

Full Terms & Conditions of access and use can be found at:

<https://ajresd.univ-adrar.edu.dz/index.php?journal=AJRES&page=Editorial-Policies>

Algerian Journal of Renewable Energy and Sustainable Development

Pr. Abdelkader Harrouz University of Adrar, Algeria, Editor-in-Chief

Vol. 05, No. 02 2023

Contents

page

-
1. Performance Assessment of Rooftop Standalone PV System in Arid Region.....94
[Layachi Zaghba, Messaouda Khennane, Amor Fezzani, Abdelhak bouchakour, Abdelhalim Borni](#)
 2. Transient Stability of Power in DFIG Wind Farm through Resilient with AFRR, IDA-PBC and PID Control.....104
[Tadjeddine Ali Abderrazak, Arbaoui Iliace, Bendelhoum Mohamed Sofiane, Bendjillali Ridha Ilyas, Hamiani Hichem](#)
 3. Facile Fabrication of MoS₂/ZnO Hetero-Epitaxial Growth on Cu₂O with Enhanced Photoelectrochemical Activity Through Thermal Oxidation Process.....118
[M. Abdurrahman, F.W Burari, O.W Olasoji](#)
 4. Adaptive Backstepping and PID Control Strategy with Genetic Algorithm for PMSG by a Grid-Connected Wind Turbine.....127
[Yousra Izgheche, Tahar Bahi](#)
 5. PHYSICAL properties of CuO Deposited by Ultrasonic Spray by Flow Rates 5ml/h and 10 ml/h for Application in Renewable Energy Method.....136
[Narimane Hassaine, Ahmed Fellah](#)
 6. Production of Biogas at Wastewater Treatment Plant in Algeria: Case Study From W. Tissemsilt.....144
[Fatma Zohra Ferradji, Nour El-imane Hamouche, Kamel Eddouaouda, Abdelmalek Badis](#)
 7. Optimizing Photovoltaic Array Performance Using a Hybrid PSO-ANN MPPT Algorithm.....150
[Dennai Mohammed Yassine, Tedjini Hamza](#)
 8. Numerical Modeling of Hydrogen Gas Bubble Dynamics in an Alkaline Water Electrolysis Process Using COMSOL Software.....159
[Djoubeir Debbah, Hakim Fatmi, Youcef Bellal, Islam Bougada, Salah Eddine Letrache, Yaaqoub Dib, Ali Derradji, Youssouf Bouffelgha, Bilel Bakiri](#)
 9. Comparative Simulation of Both PSO and GWO Algorithms Based MPPT Technique for PV Module under MATLAB/Simulink.....165
[Dalila Yessad, Souhila HadeF, Seloua Bouchekouf, Abdeldjoud Touahria, Hocine Guentri](#)
 10. New Hybrid MPPT Technique Using Honey Badger (HBA) and Coyote Optimizer (COA) for Partially Shaded PV systems.....175
[Salah Anis Krim, Fateh Krim, Hamza Afghoul](#)
 11. Flow and Heat Transfer Analysis in Solar Chimney Power Plant with Sloped Roof.....184
[Gaci Farid, Bensouici Moutmez](#)
 12. Optimal Level and Base Mother Wavelet Selection for Wavelet Analysis in Wind Turbine Health Monitoring.....191
[Chahinez Beldjaatit, Toufik Sebbagh, Samah Bouanik, Hocine Guentri](#)
 13. Wind Driven Optimization based Optimal Energy Management of Microgrid Impregnated with Renewable Energy Sources.....202
[Nabil Mezhoud, Ahmed Bahri, Bilel Ayachi](#)
 14. Towards Sustainable Energy: Numerical Assessment of Hydrogen Combustion in Turbulent Environments.....219
[Rouan Serik Habib, Ahmed Amine Larbi, Sara Zatir, Abdelkader Harrouz, Senouci Med, Bounif Abdelhamid](#)
 15. Fuzzy Logic Mppt Controller for a Standalone PV/Battery Hybrid Energy System.....227
[Ahmed Bahri, Nabil Mezhoud, Karima Benamrane, Bilel Ayachi, Thameur Abdelkrim, Mohcene Bechouat](#)

EDITORIAL BOARD

Honorary Editor-in-Chief

Prof. Ben amar Mohamed El amine

Rector: University of Adrar, Algeria

Prof. Messaoud HAMOUDA

Director: Laboratory (LDDI), University of Adrar, Algeria

Editor-in-Chief

Pr. Abdelkader HARROUZ

Department of Hydrocarbons and Renewable Energies

Faculty of Sciences and Technology

Laboratory of Sustainable Development and Computer Science (LDDI)

University of Adrar, Algeria Tel. mobile. +213664311537

E-mail: abd.harrouz@univ-adrar.edu.dz

Associate Editors

Dr. Korhan Kayisli

Department Electric Electronics Engineering. Nisantasi University, Turkey.

Dr. Belatrache Djamel

Laboratory of Sustainable Development and Computer Science (LDDI)

University Ahmed Draïa – Adrar, Algeria

Prof. Georges Descombes

Universités au Cnam, France

pr.georges.descombes@gmail.com

Dr. Arbaoui Iliace

Faculty of Sciences and Technology

University of Adrar, Algeria

International Editorial Board:

Membre	Email	Institution
Pr. HAMOUDA Messaoud	Mas.hamouda@univ- adrar.edu.dz	University of Adrar, Algeria
Pr. HARROUZ Omar	harrouz@free.fr	ISBAB, Bordeaux, France
Pr. Patrice wira	Patrice.wira@hal.fr	Université de Haute Alsace
Pr. V. R. Singh	vrsingh@ieee.org	National Physical Laboratory, India
Pr. Sanjeevikumar Padmanaban	san@et.aau.dk	Aalborg University, Denmark
Pr. Mustapha Hatti	mustapha.hatti@ieee.org	Tipaza (UDES)
Pr. BENATILLAH Ali	Ali.benatillah@univ-adrar.edu.dz	University of Adrar, Algeria
Pr Abdelfatah Nasri	nasriab1978@yahoo.fr	University Bechar
Pr. BOUROUIS Mahmoud	mahmoud.bourouis@urv.cat	Universitat Rovirai Virgili, Tarragona (URV)
Dr. BADOUD Abd Essalam	badoudabde@yahoo.fr	University of Ferhat Abbas Setif1, Algeria
Pr. BOSTANCI Erkan	ebostanci@ankara.edu.tr	Ankara University, Turkey
Dr. KORHAN Kyiacily	korhankayisli@gmail.com	Nisantasi University, Turkey
Dr. Ahmed Bouraiou	bouraiou.ahmed@urerms.dz	Renewable Energy Development Center
Dr. KALOUM Slimane	kalloum_sli@yahoo.fr	University of Adrar, Algeria
Dr. BOUBEKEUR Lahcen	boubekeurad@yahoo.com	University of Adrar, Algeria
Pr. Larbi Djilali	ldjilali@cinvestav.mx	Universidad Autonoma del Carmen, Mexico
Pr. GLAOUI Hachemi	mekka60@gmail.com	University BECHAR, Algeria
Pr. DEHINI Rachid	dehini_ra@yahoo.fr	University BECHAR, Algeria
Dr. Ahmed Saidi	ahmedsaidi@outlook.com	University BECHAR, Algeria
Dr. Hamad Alhajeri	hmhajeri@gmail.com	College of Technological Studies, Kuwait.
Dr. BECHARI Houcien	houcine.becheri@gmail.com	University BECHAR, Algeria
Dr. SLIMANI Med El-Amine	slimani_01@yahoo.fr	University Houari Boumediene "USTHB"
Pr. BAHY Tahar	tbahi@hotmail.fr	University ANNABA, Algeria
Pr. Ahmed HAMOU	ahmedhamou@yahoo.f	University Oran 1, Algeria
Dr. LASHAB Abderezak	abl@et.aau.dk	Aalborg University, Denmark
Pr. LAMAMRA Kheireddine	l_kheir@yahoo.fr	University of Oum El Bouaghi, Algeria
Pr. BOUROUIS Mahmoud	mahmoud.bourouis@urv.cat	Universitat Rovira i Virgili, Tarragona (URV)
Dr. Fateh Mebarek-Oudina	oudina2003@yahoo.fr	University of 20 août 1955-Skikda, Algeria
Dr. BENDOUMIA Rédha	r.bendoumia@yahoo.fr	Univ. Blida 1, Algeria
Dr. HEIRECHE Mohamed	heirechemohamed@yahoo.fr	Ecole Normale Supérieure d'Oran
Dr. Cherif Benoudjafer	benoudjafer@gmail.com	University BECHAR, Algeria
Dr. CHELLALI Réda	mohammed.chellali@kit.edu.dz	Institute of Technology (KIT), Germany
Dr. TADJ EDDIN Abderrazek	ataadj1@gmail.com	Ecole Nationale Polytechnique d'Oran
Dr. Poongodi M	dr.m.poongodi@gmail.com	Hamad Bin Khalifa University, Qatar
Dr. Arghya Chakravorty	arghya.chakravorty@vit.ac.in	Vellore Institute of Technology, India
Pr. HAMMOUTI Belkheir	hammoutib@gmail.com	Faculté des Sciences, U. Oujda, Morocco
Dr. DAHBI Abdeldjalil	Dahbi_j@yahoo.fr	URERMS Adrar, Algeria
Dr. Ahmed Boulal	boulal19@yahoo.fr	University of Adrar, Algeria

Editorial Policies

Focus and Scope

The coverage of AJRES D includes in all areas of Renewable Energy, Physics, Engineering, Electrical, Mechanical and other related fields:

- New Trends and Technologies for Renewable Energy
- Renewable Energy Sources as Wind power, Solar Energy, Biomass, Biofuel, Geothermal Energy, Energy Engineering
- Electrical (Power), Electronics, Applied Computing & Computer, Instrumentation & Control.
- Policies and strategies for Renewable Energy
- Production of Energy Using Clean Energy Sources
- Applications for Renewable Energy
- Novel Energy Conversion Studies
- Performance Analysis of Renewable Energy Systems
- Hybrid Systems.
- Renewable Energy Research and Applications for Industries
- Electrical Vehicles technology and Components
- Artificial Intelligence Studies in Renewable Energy Systems
- Computational Methods for renewable energy
- Machine Learning for Renewable Energy Applications
- energy generation, utilization, conversion, storage, transmission, conservation, management and sustainability
- Energy Savings
- Sustainable and Clean Energy

Peer Review Policy

The AJRES D journal is an international journal published by University of Adrar is licensed under CC BY-NC-ND 4.0 CC icon, Faculty of Sciences and Technology, Department of Hydrocarbons and Renewable Energies. The research article submitted to this online journal will be peer-reviewed.

The practice of peer review is to ensure that only original and good paper is published. It is an objective process at the heart of good scholarly publishing and is carried out by all reputable scientific journals. Our referees play a vital role in maintaining the high standards AJRES D and all manuscripts are peer reviewed following the procedure outlined below.

Section Policies:

Articles

Open
Submissions

Indexed

Peer Reviewed

Peer Review Process

The submitted papers are subject of a peer review process, the Editor-in-chief first evaluates all manuscripts. Manuscripts rejected at this stage are not original, have serious scientific defects, have poor English, or are outside the aims and scope of AJRES D journal. Those that meet the minimum criteria are normally passed on to at least three (03) experts for review.

AJRES D exercise a single blind reviewing, where the reviewers remain anonymous throughout this process. Reviewers are assigned to the paper according to their expertise.

Reviewers are invited to evaluate the manuscript for :

- originality
- methodologically
- Follows appropriate ethical guidelines
- Has clearly results and support the conclusions.

A final decision (accept or reject the manuscript) will be sent to the author along with any recommendations may include verbatim comments made by the reviewers. The reviewers advise the editor, who taking the final decision to accept or reject this paper.

Publication Frequency

This journal is published 2 times per year, in June and December.

Open Access Policy

Algerian Journal of Renewable Energy and Sustainable Development is an Open Access Journal. All articles can be downloaded free of charge for personal, educational and scientific purposes (Creative Commons license CC BY-NC-ND). This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

Publication Fee

This journal does not levy any charges to authors for submission, processing, or publication.

Archiving

AJRES D utilizes the LOCKSS system to create a distributed archiving system among participating libraries and permits those libraries to create permanent archives of the journal for purposes of preservation and restoration.

Publication Ethics

Algerian Journal of Renewable Energy and Sustainable Development (AJRES D) ISSN 2710- 849X is committed to supporting the highest standards of publication ethics. Authors who submit papers to AJRES D attest that:

- The submitted article is original.
- Not under consideration for publication.
- All Authors have been informed of the full content of the submitted article at the time of submission.
- The submitted article has not been previously published.
- The submitted article not under consideration for publication.
- Nothing in the article violates any right of privacy or infringes any intellectual property rights

Duties of Editors

- Publication Decisions.
- Peer review.
- Fair play.
- Confidentiality.
- Declaration of Competing Interests.
- Vigilance over the Published Record.

Duties of Reviewers

- Contribution to Editorial Decisions.
- Confidentiality.
- Alertness to Ethical Issues.
- Standards of Objectivity & Competing Interests.

Duties of Authors

- Reporting Standards.
- Data Access and Retention.
- Originality and Acknowledgement of Sources.
- Multiple, Redundant or Concurrent Publication.
- Confidentiality.
- Authorship of the Paper.
- Hazards and Human or Animal Subjects.
- Declaration of Competing Interests.
- Notification of Fundamental Errors.
- Image Integrity.
- Clinical Trial Transparency.

Duties of the Publisher

- Guardianship of the scholarly record.
- Safeguard editorial independence.
- Collaborate to set industry best practice.
- Provide editors with technical, procedural & legal support.
- Educate researchers on publishing ethics.

Originality and plagiarism

Algerian Journal of Renewable Energy and Sustainable Development (AJRSED) Editorial Board recognizes that plagiarism is not acceptable and therefore establishes the following policy stating specific actions (penalties) when plagiarism is identified in an article that is submitted for publication in AJRSED. Plagiarism is defined as “the unauthorized use or close imitation of the language and the representation of them as one's own original work”. In the academic world, plagiarism is a very serious offense that can result in punishments such as a suspension or expulsion.

All submitted papers will be checked on their similarity via plagiarism software.

Copyright:

The journal allows the author(s) to retain publishing rights without restrictions
The journal allows the author(s) to hold the copyright without restrictions

Online ISSN: 2710-849X

<https://ajresd.univ-adrar.edu.dz/>

From the Editor



Prof. Dr. Abdelkader Harrouz

Dear Colleagues,

On name of the editorial board of Algerian Journal of Renewable Energy and Sustainable Development (AJRES D), I would like to share our good news to publish the first issue Vol. 5 No 1 of AJRES D. My special thanks are for members of editorial board, editorial team, referees, authors and other technical staff. Please find the first issue of Algerian Journal of Renewable Energy and Sustainable Development at

<https://ajresd.univ-adrar.edu.dz>.

We invite you to review the Table of Contents by visiting our web site and review articles and items of interest. AJRES D will continue to publish high level scientific research papers in the field of Renewable Energy as an international peer reviewed scientific and academic journal of Ahmed Draia University.

Thank you for your interest in our journal,

Pr. Harrouz Abdelkader

University of Adrar, LDDI Laboratory, Algeria

abd.harrouz@univ-adrar.edu.dz

<https://ajresd.univ-adrar.edu.dz/index.php?journal=AJRES D&page=about>

Online ISSN: 2710-849X