



Physics of Semiconductor Devices & Renewable Energies Journal

2023

First Edition



Prof. Mebarka DAOUDI
Editor-in- chief

Contacts

www.psdrej.com

contact@psdrej.com

Tel. : +213657171428

417, LPDS laboratory, Exact Sciences faculty,
University of Bechar, Bechar, Algeria





Prof. Mebarka DAUDI
Editor-in-chief

Laboratory of Semiconductor
Devices Physics
Faculty of Exact Sciences
The University of Bechar



Contact



daoudi.mebarka@univ-bechar.dz



+213-657-171-428



417 Faculty of exact sciences,
University of Bechar, Bechar Algeria

May, 2023

The word of the editor-in-chief

It is with immense pleasure and deep anticipation that we launch the first edition of the Physics of Semiconductor Devices and Renewable Energies journal, with this inaugural issue by May 2023. On behalf of the PSDREJ Editorial broad team, I would like to extend a warm welcome to the readers of the journal. I take this opportunity to thank our authors, editors, and reviewers, who have all volunteered to contribute to the success of PSDRE. Our primary focus will continue to be the publication of high-quality research. PSDRE Journal focuses on semiconductor devices and solar energy. It includes the physics of charge carrier transport in matter, solar cells, and photovoltaic systems. Topics covered in the journal include, but are not limited to:

Physics and properties of semiconductors, photonic materials, P-N junctions and Hetero-junctions, Metal-semiconductor contacts, Optoelectronic devices, Solar energy, wind energy, biomass, hydro-energy, Geothermal energy, hybrid systems.

We have invited distinguished scholars as members of the editorial board, who will serve for three years, and who will add international reach, strength and coherence to manuscript review and editing processes. We expect that Editors-in-Chiefs, Associate Editors, and Editorial Board members will form a growing community of practice with constructive peer-to-peer interaction that will underpin the journal in the years to come.

Broad editors

■ Editor-in-chief

Prof. Mebarka DAUDI
University of Bechar, Algeria

■ Advisory Editor

Prof. Tse Nga (Tina) Ng
University of California San Diego, US

■ Co- Editors in chief

- Prof. Abderrahmane BELGHACHI
University of Bechar, Bechar- Algeria

- Prof. Syham KADRI
University of Bechar, Algeria

- Dr. Elhouaria BOORBABA
University of Bechar, Algeria

■ Associate Editor

- Prof. Karim Benyoucef MERAD
University of Tlemcen, Algeria

- Prof. Rabia Saïd
Bayero University in Kano, Nigeria

- Dr. Chibuisi C. OKORIEIMOH
Dublin University, Ireland

■ Editorial Managers

- Dr. Mohammed BENSAFI
University of Bechar, Algeria

- Prof. Souad DOULI
University of Bechar, Algeria

- Dr. Fatima Zohra BELHOUCINE
University of Bechar, Algeria

■ Proof Reading

- Dr. Souad GUESSAR
University of Bechar, Algeria

EDITORIAL BROAD

- Prof. Abdarrachid HELMAOUI (University of Bechar , Algeria)
- Dr. Abdelkarim TALHI (LSEE -University center of Tindouf, Algeria)
- Dr. Sabira NOUR (High Normal School Bechar, Algeria)
- Dr. Benameur AMIRI (High Normal School Bechar, Algeria)
- Dr. Abdelhak MERABTI (High Normal School Bechar, Algeria)
- Dr, Houcine AISSANI (High Normal School Bechar, Algeria)
- Dr. Khelifa HAMI (LSEE -University center of Tindouf, Algeria)
- Dr. Fayssal BOUFELGHA (URFA-CRTI, Algeria)
- Dr. Mohamed Amine HARTANI (Laboratory SDCS-L, Adrar, Algeria)
- Dr. Mohamed Haithem LAZREG (University of Tlemcen, Algeria)
- Dr. Naceur SELMANE(LMSEERGE - University of Laghouat, Algeria)
- Dr. Zahra MOKRANI (LTII - University of Bejaia, Algeria)
- Dr. Ahmed BEKHTI (CDER, Algeria)
- Dr. Rahima ZELLAGUI (Research Center in Industrial Technologies, Algeria)
- Dr. Fatima ELHAMRA (University of Laghouat, Algeria)
- Dr. Mama HAMLAT (University of Saida, Algeria)
- Dr. Halima BENATTOU (University of Sidi Bel Abbes, Algeria)

TABLE OF CONTENTS

The words of the editor-in-chief	01
Broad editors	02
Morphological Characterization of Sb-Doped SnO ₂ Thin Films Developed by Spray Pyrolysis Halima HABIEB, Nasr-Eddine HAMDADOU	04
Effect of Electronic Properties of Si _{1-x} Ge _x and SiC Semiconductors on the Electrical Behavior of MOS Transistors Mourad Hebali, Melouka Bellil, Hocine Abdelhak Azzeddine, Benaoumeurlbari, Menaouer Bennaoumand, Djilali Chalabi	00
Theoretical insights into the structural and optoelectronic properties of the ternary cesium tetrafluoridobromate semiconductor CsBrF ₄ Ishak Mebarkia, Aïssa Manallah	00
Enhancement of the magneto-electronic properties by GGA and TB-mBJ approaches for KMgO ₃ perovskite oxide Mama Hamlat, FrihaKhelfaoui, Kadda Amara	00
Determination of half metallicity behavior of quaternary heusler alloy CrCoScGa Ouafaa Sadouki, Friha Khelfaoui, Keltouma Boudia	00
Study of structural and electronic properties of AgCl and AgBr binaries NaimaTalem, Lakhdar Boumia, Sofiane Mihoub	00
Control of dual star induction generator based on multi-level inverter used in wind energy conversion system Mohamed Haithem Lazreg, Hamza Mesai-Ahmed, Abderrahim Bentaallah	00
Contribution to the study of the CoFeTiAsquaternaryHeusler material's structural ,electronic, and magnetic properties Fatima Sofrani, Keltouma Boudia, Friha Khelfaoui	00

First Principles Study of Europium doped Gallium Nitride in Wurzite Structure 00
Amiri Benameur, Touhami Nour El-Imane

Effect of Electronic Properties of Si_{1-x}Gex and SiC Semiconductors on the Electrical Behavior of MOS Transistors 00
Mourad Hebali, Melouka Bellil, Hocine Abdelhak Azzeddine, Benaoumeurlbari, Menaouer Bennaoumand, Djilali Chalabi

Investigation of the structural, Electronic and magnetic properties of Mn₂PdSn Heusler alloy under hydrostatic pressure. 00
Soumia Zeffane, Fethallah Dahmane, Mohamed Mokhtari

Study of structural, morphological and hydrophobic property of nanostructured cobalt-doped ZnO thin film 00
Zehira Belamri, Djamel Hamana

Study of thin films (ZnO)_{0.4}(CdO)_{0.6} composite properties 00
Halima Benatto, Nouredine Benramdane

Physics of Semiconductor Devices & Renewable Energies Journal



Prof. Mebarka DAOUDI
Editor-in-chief

Most impact projects conclude with a page
acknowledging the contributions of the people who
worked tirelessly on the projects mentioned within.

Thank you to all our donors
and volunteers.



contact@psdrej.com

www.psdrej.com

417 University of Bechar,
Bechar Algeria

+213-657-171-428



1st ICPSDREE 14th - 16th November 2022 Bechar - Algeria



INTERNATIONAL CONFERENCE ON PHYSICS OF SEMICONDUCTOR DEVICES, RENEWABLE ENERGIES AND ENVIRONMENT

Prof. Mebarka DAOUDI

Conference chair

Laboratory of Semiconductor Devices Physics

Faculty of Exact Sciences

University of Bechar



ICPSDREE 2022

BECHAR - ALGERIA

*See you
Forward!*

20
24

+213-657-171-428
www.taalokilmi.com
icpsdree@univ-bechar.dz

Prof. Mebarka DAOUDI
Conference chair