

VOLUME 4

NUMBER 5

OCTOBER 2025

ISSN 2709-4006

Journal of Progress in

ENGINEERING AND PHYSICAL SCIENCE

JOURNAL OF PROGRESS IN ENGINEERING AND PHYSICAL SCIENCE

PIONEER ACADEMIC PUBLISHING LIMITED

UNIT NO. A222, 3F, HANG FUNG INDUSTRIAL BUILDING

PHASE 2, NO. 2 G HOK YUEN STREET

HUNGHOM, KOWLOON, HONG KONG, CHINA

PHONE: 00852-34604012



PIONEER ACADEMIC PUBLISHING LIMITED



PIONEER
ACADEMIC PUBLISHING LIMITED

Editorial Board

Dr. Dalvinder Singh Grewal	Desh Bhagat University	Dr. Jagadeesha B	St Joseph Engineering College
Dr. Ann Nkeiruka Kanu	National Root Crops Research Institute Umudike	Dr. Adeboye Nureni Olawale	Osun state University, Osogbo
Dr. Aziz ur Rehman	Institute of Chemistry, The Islamia University of Bahawalpur, Pakistan	Dr. Nikhil Rath	Swami Vivekanand Subharti University, Meerut, Uttar Pradesh
Prof. P K Dash	Department of Aeronautical Engineering, NMIT, Bangalore, India	MD. Ph.D. Mihaela-Adela Vintan	‘Iuliu Hatieganu’ University of Medicine and Pharmacy, Romania
Dr. Rabindra N. Das	Department of Statistics, The University of Burdwan, Golapbag, Rajbati	Dr. Amou Komi Apélété	Materials and Energetics, Head of the Department of Physics, University of Lomé
Prof. Mansour Mahmoud	Mathematics Department, Faculty of Science, King AbdulAziz University, Jeddah, P. Box 21589, Saudi Arabia	Prof. Zakir Aliyev	Institute of Soil Science and Agrochemistry of the National Academy of Sciences of Azerbaijan
Prof. Keshk M. A. S. Sherif	Mathematics Department, Faculty of Science, King AbdulAziz University, Jeddah, P. Box 21589, Saudi Arabia	Dr. M. Pandiyan	Agricultural College and Research Institute, Vazhavachanur, 606 753, Thiruvannamalai
Prof. Vladimir V. Rumyantsev	Theoretical Physics and Nanotechnology Department at Donetsk National University	Ph.D. Aashish Roy	Department of Chemistry and Materials Science, S.S.Tegnoor PU & Degree College, Kalaburagi 585105, Karnataka, India
Ph.D. Awadhesh Kumar Yadav	MTech-Production Engineering, Lecturer in Department of Mechanical Engineering Government Polytechnic Gorakhpur	Dr. Angus Onwudiwe Ike	Department of Crop Science, Faculty of Agriculture, University of Agriculture and Environmental Sciences, Umuagwo Imo State, Nigeria
Dr. Anirban Sur	Mechanical Engineering Department, Symbiosis Institute of Technology, Symbiosis International (Deemed University), Pune, Maharashtra, India	Dr. Sanjeev Patwa	Dept. of Computer Application, College of Engineering and Technology; Mody University of Science and Technology, Lakshmangarh, Dist
Sepiribo Lucky Braide	Rivers State University, Port Harcourt	Adrian Sfarti	UC Berkeley, Computer Science Dept
Mohammad Hassan Kamyab Matthew, Chukwuma Michael	University of Kashan Department of Mathematics and Statistics, University of Delta, Agbor	John T Mendy Mehdi Darbandi	University of The Gambia Eastern Mediterranean University
Ciortea Elisabeta Mihaela	University of Alba Iulia, Romania	Hassan Al-Haj Ibrahim	Al-Baath University, Homs, Syria
Lianly Rompis	Universitas Katolik De La Salle Manado, Indonesia	Jian Peng	Kunming University of Science and Technology
Mangesh Dilip Ratolikar	Indian Institute of Technology Hyderabad	Shengsheng L	School of Economics, Anhui University
Faweya O.	Department of Statistics, University of Ibadan, Oyo State, Nigeria	Ayua Tyoyima John	Department of Physical and Natural Sciences, University of The Gambia
Mohammadreza Torkjazi	Department of Systems Engineering and Operations Research, George Mason University	Godfred Safo-Adu	Department of Environmental Science, Faculty of Science Education, University of Education, Winneba

Aims and Scope

Journal of Progress in Engineering and Physical Science (ISSN 2709-4006) is an international, double-blind peer-reviewed scientific journal. The journal publishes original scientific articles, review articles, scientific critique, scientific interviews, book reviews, and chronicles. *Journal of Progress in Engineering and Physical Science* aims to introduce research progress of applied science and achievements of engineering development to the world community by demonstrating the significance of research investigations and demonstrations. Accepted manuscript to *Journal of Progress in Engineering and Physical Science* will be published bimonthly.

The main subject areas include, without being limited to the following:

- Marine Sciences
 - Physics
 - Mechanical Engineering
 - Astronomy
 - Biology
- Metallurgical Engineering
 - Mathematics
 - Geology
 - Computer Science and Technology
 - Chemistry

Submissions

We are seeking submissions for the forthcoming issues. Authors should submit manuscripts written in professional English. Manuscripts with 3,000-10,000 words in length are preferred. All manuscripts should be prepared in OpenOffice, Microsoft Word, or RTF document file format. Focus issue manuscript should be submitted at: <https://www.pioneerpublisher.com/jpeps>, or sent to: office@pioneerpublisher.com.

Copyright

Journal of Progress in Engineering and Physical Science (ISSN 2709-4006) is published under a Creative Commons (CC BY) license. All articles published by Pioneer Academic Publishing Limited are published in full open access, meaning unlimited use and reuse of articles, in addition to giving credit to the authors. Readers shall have the right to copy and distribute articles in this journal in any form in any medium, and may also modify, convert or create on the basis of articles. In sharing and using articles in this journal, the user must indicate the author and source, and mark the changes made in articles. Copyright © Pioneer Academic Publishing Limited. All Rights Reserved.