

ISSN: 1656-1996  
Vol 8, Issue 4  
Apr. 2026

# Journal of Research in Science and Engineering

Journal of Research in Science and Engineering (JRSE)

ISSN: 1656-1996

**Bryan House Publishing Limited**  
contact@bryanhouspub.org  
www.bryanhouspub.org  
Telephone:  
0044-121-7813744



**BRYAN HOUSE PUBLISHING LIMITED**  
Multidisciplinary Academic Journal Publisher



# **Journal of Research in Science and Engineering (JRSE)**

**ISSN 1656-1996**

**Editor-in-Chief**

Dr Taylor M. Matt, University of Macquarie, Sydney, Australia

**Editorial Board Members**

Dr. Markus Haag, Department of Management and Business Systems, University of Bedfordshire, United Kingdom

Professor Nathan N. Elekwa, University of Nigeria, Nsuka, Nigeria

Dr. Vin vng, Department of computer, University of Bedfordshire, United Kingdom

Dr. Stephen Mackson, Department of Management and Business Information Systems, University of Bedfordshire, UK

Dr. Make Smart, Faculty of Mathematics and Natural Science, University of Augsburg, Germany

Dr. Matthew Peters, Department of computer Science, University of Western Sydney, Australia

Deepankar Choudhury, Associate Professor, Department of Civil Engineering, Indian Institute of Technology (IIT) Bombay, Powai, Mumbai, India

## **Copyright**

*Journal of Research in Science and Engineering (JRSE)* is licensed under a Creative Commons-Non-Commercial 4.0 International Copyright (CC BY-NC4.0). 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 © Bryan House Publishing Limited. All Rights Reserved.

# Journal of Research in Science and Engineering (JRSE)

ISSN 1656-1996

## Aims and Scope

Introduce the new peer-reviewed, open access journal entitled *Journal of Research in Science and Engineering (JRSE)* is an international open access journal publication by Bryan House Publishing Limited.

All manuscripts must be prepared in English and are subject to a rigorous and fair peer-review process. The journal publishes original papers including but not limited to the following fields:

- Aerospace Engineering and Technology
- Architectural Engineering and Technology
- Artificial Intelligence Technology
- Automatic Speech Recognition Technology
- Bioprocess Engineering
- Chemical Technology
- Civil Engineering
- Composites Engineering
- Control Engineering
- Data Engineering
- Ecological Science and Technology
- Electrical and Computer Engineering
- Engineering Education
- Engineering Geology
- Engineering Physics
- Environmental Sciences
- Food Science and Engineering
- Genetic Engineering and Biotechnology
- Green Energy Engineering and Technology
- Hydraulic Engineering
- Industrial Technology
- Information Technology
- Manufacturing Engineering and Technology
- Materials Science and Engineering
- Medical and Biomedical Engineering
- Micro-System Technology
- Military Technology and Equipment
- Nano-System Technology
- Naval Engineering
- Nuclear Science and Technology
- Opto-Mechatronics
- Particle Physics
- Petroleum Engineering
- Pharmaceutical Engineering
- Polymer Engineering
- Reservoir Engineering
- Security Engineering
- Structural Engineering

We are also interested in: 1) Short Reports - 2-5 page papers where an author can present either preliminary data or an idea with theoretical background but has not yet completed the research needed for a complete paper; 2) Book Reviews - Comments and critiques.

### **Bryan House Publishing Limited.**

E-Mail: [contact@bryanhouspub.org](mailto:contact@bryanhouspub.org)

Official Website: [www.bryanhouspub.org](http://www.bryanhouspub.org)

Address: Flat 4, Huntingdon House Faulkers Farm Drive Edington,  
Birmingham West Midlands, United Kingdom, B23 7XF.

Telephone: 0044-121-7813744

## **CONTENTS**

- 1      Strengthening Key Management Systems with Dedicated Hardware Security Modules (HSMs)**  
Bhushan Jayeshkumar Patel
- 4      Development and Evaluation of a Digital Barangay Management System**  
Mullangi Sridhar Osman
- 8      Modular Artificial Bird Nest Interactive Installation: A Practice in Urban Interactive Landscape**  
Xinyuan Bian, Bo Duan, Di Wu, Zhiguang Jia, Mingyu Jin
- 12     Carbon Nanotube-Based Microwave Absorbing Materials: Research Progress on Mechanisms, Composite Systems, and Structural Design**  
Xiaolin Fu, Yimeng Zhen, Anyao Jin, Honghui Jiang, Xianzi Qin, Jing Yuan
- 22     SPORT-SPHERE: A Review of AI-Driven Personalized Sports Updates for Multi-Discipline Enthusiasts**  
Reddy Chaudhari, Basha Pathak
- 29     Analysis of Zero-Gravity Unloading Positions for 2-DOF Space Manipulators**  
Mingtao Liu, Qi Zhang, Gang Chen, Jiaxuan Bai
- 32     Enabling PeopleSoft De-Customization via Cloud Migration to Improve Student Outcomes**  
Pinjari Kuppusamy
- 35     Optimizing Supervised Classification Algorithms for Noisy, Real-World Data**  
Deepthi Kallahakalu, Vijay Dev
- 43     Net-Zero Carbon Communities: A Systematic Bibliometric Review of Research Trends, Structural Gaps, and Future Directions**  
Jia Xin Chai, Ru Guo
- 55     Frost Defrosting Control System for Air-Source Heat Pump Based on Nighttime Adaptive Image Gray-Scale Recognition**  
Haifeng Tang
- 59     Characteristic Analysis of the Gravity Unloading Device for the Satellite Simulation Experiment**  
Mingtao Liu, Jiaxuan Bai, Gang Chen, Qi Zhang
- 63     A Quark-Based Investigation of Isotopic Structures and Properties**  
Kantharaju Tagarev, Srinidhi Nedko
- 70     Exploring Natural Plant Products as a Source for Novel Antibiotics**  
Srinidhi Sai Golakia
- 74     Dynamic Routing in Software-Defined Networks Using Multi-Agent Deep Deterministic Policy Gradient**  
Ohm Patel, Abdul Baes