

ISSN: 1656-1996
Vol 7, Issue 12
Dec. 2025

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@bryanhousepub.org

Official Website: www.bryanhousepub.org

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

Telephone: 0044-121-7813744

Journal of Research in Science and Engineering (JRSE)

ISSN 1656-1996

Volume 7, Issue 12 • December 2025

CONTENTS

1 **A Systematic Review of Tools and Techniques in Street Cleaning Machinery**
Edema Evance, Kenyi Lubajo

8 **Development of a Maintenance Management System for Primary Machinery to Enhance Productivity: A Case Study of Technology Development Workshops**
Samwel Auya, Erick Bor

15 **Application of UAV in 3D Real-Scene Surveying and Mapping of Jilin West Railway Station**
Yanqiu Shi, Lingwei Kong

20 **A Data Synthesis Framework for Few-Shot Biomedical Relation Extraction via Semantic Deconstruction and Re-synthesis**
Hai Zhu

25 **Determination and Comparative Analysis of Performance Parameters: Conventional vs. Common-Rail Injection Systems in Diesel Engines**
Kusdarwanto Sondhi, Eriyantouw Wahid, Ananya Hermansyah

31 **Enhanced Identification of Apple Leaf Diseases Through Optimized Machine Learning Algorithms**
April Manallo, Vivien Chua

35 **Design and Implementation of a University Chemical Management Platform Based on B/S Mode**
Haifeng Tang, Yonghua Ma, Yuling Li, Hanrui Xu

38 **Effect of Soluble Salt on Thermal Conductivity of Saline Soil**
Yunze Jin, Yan Xu

43 **Study on the Influencing Factors of the Shear Strength of Shallow Unsaturated Soda-saline Loessal Soil**
Shuai Li, Jinsheng Zhang, Danqi Wei, Zhuohong Jiang, Yan Xu

47 **Machine Learning Techniques for Crop Recommendation Systems Based on Productivity**
Anand Geo, Sangeeth Soby

53 **A Comparative Analysis of Computational Methods for Motif Refinement**
Anand Sunder

57 **Enhancing Kepler Optimization: An Improved Algorithm with Superior Search Capabilities**
Yi Huang, Lanyue Yang

64 **Application of High-Density Resistivity Method in the Detection of Coal Mine Goafs**
Ning Wang, Tianyu Wang, Zhan Liu, Xuefei Zhang

69 **A Study of Biomedical Instrumentation Equipment and Telemedicine Integration**
Robin Ghosh

CONTENTS

72 Patterns of Shear Stress Changes in Turfy Soil Modified by Biological Enzymes

Han Wang, Yan Lv

78 Evaluation of the Phytotoxic Potential of Two Aspergillus

Masuda Isaeva

82 Patterns of Shear Stress Changes in Turfy Soil Modified by Biological Enzymes

Han Wang, Yan Lv