

Journal of Engineering and Technological Sciences

Journal of Engineering and Technological Sciences welcomes full research articles in the area of Engineering Sciences from the following subject areas: Aerospace Engineering, Biotechnology, Chemical Engineering, Civil Engineering, Electrical Engineering, Engineering Physics, Environmental Engineering, Industrial Engineering, Information Engineering, Mechanical Engineering, Materials Science and Engineering, Manufacturing Processes, Microelectronics, Mining Engineering, Petroleum Engineering, and other application of physical, biological, chemical and mathematical sciences in engineering. Authors are invited to submit articles that have not been published previously and are not under consideration elsewhere.

Starting from Vol. 35, No. 1, 2003, full articles published are available online at <http://journals.itb.ac.id/index.php/jets>, and indexed by Scopus, Web of Science (Emerging Source Citation Index)-Clarivate Analysis, Ei Compendex, Google Scholar, Index Copernicus, DOAJ, ASEAN Citation Index, The Elektronische Zeitschriftenbibliothek EZB by University Library of Regensburg, EBSCO Open Science Directory, Chemical Abstract Service (CAS), Zurich Open Repository and Archive Journal Database, Indonesian Publication Index (IPI) and Science and Technology Index (SINTA),.

Publication History

Currently known as:

Journal of Engineering and Technological Sciences

Formerly known as:

- ITB Journal of Engineering Science (2007 - 2012)
- Proceedings ITB on Engineering Science (2003 - 2006)
- Proceedings ITB (1961 - 2002)

Editorial board of Journal of Engineering and Technological Sciences

Chief Editor

Endra Gunawan
Faculty Mining and
Petroleum Engineering, ITB,
Indonesia

Masyhur Irsyam
Faculty of Civil and
Environmental Engineering,
ITB, Indonesia

M Akbar Rhamdhani
FPD Group, FSET, Swinburne
University of Technology,
Australia

Bayu Jayawardhana
FSE, University of Groningen,
Netherlands

Associate Editor

Afriyanti Sumboja
Faculty of Mechanical and
Aerospace Engineering, ITB,
Indonesia

Firman Bagja Juangsa
Faculty of Mechanical and
Aerospace Engineering, ITB,
Indonesia

Jeong-Guon Ih
Korea Advanced Institute of
Science and Technology,
South Korea

Walter Timo de Vries
SED, Technical University of
Munich, Germany

Khoiruddin
Faculty of Industrial
Technology, ITB, Indonesia

Yuniati
Faculty of Civil and
Environmental Engineering,
ITB, Indonesia

Mark van Loosdrecht
FAD, Delft University of
Technology, The Netherlands

Yusaku Ohta
Graduate School of Science,
Tohoku University, Japan

Editorial Board

Tjandra Setiadi
Faculty of Industrial
Technology, ITB, Indonesia

Heri Andreas,
Faculty of Earth Science and
Technology, ITB, Indonesia

Ramaraj Boopathy
Department of Biological
Sciences, Nicholls State
University, United States

Massoud Sofi
Departement of Infrastructure
Engineering, The University of
Melbourne, Australia

Suwarno
School of Electrical
Engineering and Informatics,
ITB, Indonesia

Rizki Armanto Mangkuto
Faculty of Industrial
Technology, ITB, Indonesia

Prakash Thamburaja
Universiti Kebangsaan
Malaysia, Malaysia

Publication assistant: Yuliah Qotimah. Address: *ITB Journal Secretariat*, LPPM ITB, Center for Research and Community Services (CRCS) Building 7th Floor, Jl. Ganesha No. 10 Bandung 40132, Indonesia, Tel. +62-22-86010080, Fax.: +62-22-86010051; e-mail: jets@lppm.itb.ac.id.

Distribution: Distributed to other universities and research institutions for exchange publications, and to regular subscribers. Subscription per issue: Rp 100.000,- (domestic) and \$50 (overseas). Order form for subscription should be sent to the editorial office.

Reg. No. 691-SIC-UPPGT-SIT-1963, Accreditation No. 225/E/KPT/2022 (Vol. 54 No.4, 2022 - Vol. 59 No.3, 2027)

Published by The Institute for Research and Community Services, Institut Teknologi Bandung.

Cover Design by Chandra Tresnadi.

Table of Contents

1. Urbanization and Consequent Carbon Footprints from Transportation and Construction Sector in Malaysia after Industrial Revolution 4.0 Muhammad Ali Musarat, Wesam Salah Alaloul, Hamna Bukhari, Saba Ayub & Thiong Samuel Ateny Thiong	439-449
2. Sustainable Stabilization of Clay Soil with Rice Husk Ash Shaimaa M. Abdulrahman, Ghayda Yaseen Al Kindi & Elaf Abd Al-Azal Ihsan	450-462
3. Trip Pattern Impact of Electric Vehicles in Optimized Power Production using Orca Algorithm Arif Nur Afandi, Shamsul Aizam Zulkifli, Petr Korba, Felix Rafael Segundo Sevilla, Anik Nur Handayani, Aripriharta Aripriharta, Aji Presetya Wibawa & Farrel Candra Winata Afandi	463-473
4. A Proposed Approach to Utilizing Esp32 Microcontroller for Data Acquisition Vy-Khang Tran, Bao-Toan Thai, Hai Pham, Van-Khan Nguyen & Van-Khanh Nguyen	474-488
5. Chemical Machining of Aluminum Alloy 2024: The Critical Roles of Temperature and Solution Concentration in Enhancing Corrosion Rate and Surface Texture Ahmed K. Muhammad, Tawfeeq W. Mohammed & Kadhim K. Resan	489-498
6. Influence of Bituminous Layer Modulus and Soil Layer Properties on the Modulus of Granular Layer Sivaprakash Gopal & Ajithkumar Padmarekha	499-509
7. Modelling of Sulfur Dioxide Removal by Seawater in a Flue Gas Desulfurization Absorber Kania Dewi, Anders Andreasen & Addina Shafiyya Ediansjah	510-520
8. Reliability-based Design Optimization (RBDO) Study Applied to the Thermal Management of a Multi-Led Chip Package Houda Elnouino, Omar Bendaou & Othmane Bendaou	521-534
9. Characteristics of Activated Carbon Panels in Reducing CO, NO ₂ , HC, Pb, and Noise Maria Roosa Srah Darmanijati, Pranoto, Ari Handono Ramelan & Inayati	535-544
10. Analysis of Liquid Smoke Grade Characteristics from Coconut Shells and Palm Kernel Shell Waste Through a Slow Pyrolysis Process Bazlina Dawami Afrah, M. Ihsan Riady, Panida Payomthip, Rizky Vasya Ramadhanty, Fadhilah Rizki & Muhammad Luthfi Alfayyadh	545-558