

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

Tjandra Setiadi
Faculty of Industrial
Technology, ITB,
Indonesia

Deddy Kurniadi
Faculty of Industrial
Technology, ITB, Indonesia

Suwarno
School of Electrical
Engineering and
Informatics, ITB,
Indonesia

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

Editorial Board

Aiqin Wang
Center for Eco-material
and Green Chemistry,
Lanzhou Institute of
Chemical Physics,
Chinese Academy of
Sciences, P.R. China

Dudy Darmawan Wijaya,
Faculty of Earth Science
and Technology, ITB,
Indonesia

Tobias Nilsson
GFZ German Research
Centre for
Geosciences,
Potsdam, Germany

M Akbar Rhamdhani
Department of
Mechanical and
Product Design
Engineering, Swinburne
University of Technology,
Australia

Satria Bijaksana,
Faculty Mining and
Petroleum Engineering,
ITB, Indonesia

Judha Purbolaksono
Faculty of Engineering,
Universiti Teknologi Brunei,
Brunei Darussalam

Mark van Loosdrecht
Faculty of Applied
Sciences, Delft
University of
Technology, The
Netherlands

Chien Ming Wang
School of Civil
Engineering, The
University of
Queensland, Australia

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

Indah Rachmatiah S.
Salami
Faculty of Civil and
Environmental
Engineering, ITB, Indonesia

Taufik
CalPoly, Department
of Electrical
Engineering, San Luis
Obispo, United States

Shuren Wang
School of Civil
Engineering, Henan
Polytechnic University,
China

Publication assistant: Dini Sofiani Permatasari & Yuliah Qotimah. Address: *ITB Journal Publisher*, LPPM ITB, Center for Research and Community Services (CRCS) Building 6th & 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. 60/E/KPT/2016 (Nov 2016 - Nov 2021)

Published by *ITB Journal Publisher*, The Institute for Research and Community Services, Institut Teknologi Bandung, in collaboration with Indonesian Engineering Association (Persatuan Insinyur Indonesia - PII).

Cover Design by Chandra Tresnadi.

Table of Contents

1. Environmental Economic Hydrothermal System Dispatch by Using a Novel Differential Evolution Kien Chi Le, Bach Hoang Dinh & Thang Trung Nguyen	1
2. Drilling Strategy for Thick Carbon Fiber Reinforced Polymer Composites (CFRP): A Preliminary Assessment Sharizal Ahmad Sobri, Robert Heinemann, David Whitehead & Norshah Afizi Shuaib	21
3. Comparative Evaluation of Medical Thermal Image Enhancement Techniques for Breast Cancer Detection Asnida Abdul Wahab, Maheza Ina Mohamad Salim, Jasmy Yunus & Muhammad Hanif Ramlee	40
4. Axial and Lateral Small Strain Measurement of Soils in Compression Test using Local Deformation Transducer Hasbullah Nawir, Dayu Apoji, Riska Ekawita & Khairurrijal Khairurrijal	53
5. Novel Design of a Vertical Axis Hydrokinetic Turbine –Straight-Blade Cascaded (VAHT–SBC): Experimental and Numerical Simulation Ridho Hantoro & Erna Septyaningrum	73
6. Synthesis of Structured Triglycerides Based on Canarium Oil for Food Application Johnner P. Sitompul, Tutus Gusdinar, Kusnandar Anggadiredja, Hamidah Rahman & Tursino	87
7. Isolation and Screening of Diesel Degrading Bacteria from Ship Dismantling Facility at Tanjungjati, Madura, Indonesia Harmin Sulistiyaning Titah, Herman Pratikno, Atiek Moesriati, Muhammad Fauzul Imron & Rizky Islami Putera	99
8. Healthcare Data Mining: Predicting Hospital Length of Stay of Dengue Patients Iwan Inrawan Wiratmadja, Rajesri Govindaraju & Siti Yaumi Salamah	110

9. A Note on the Use of the Second Vertical Derivative (SVD) of Gravity Data with Reference to Indonesian Cases
Prihadi Sumintadireja, Darharta Dahrin & Hendra Grandis 127