

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

Suprijanto
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

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

Judha Purbolaksono
Faculty of Industrial
Technology Universitas
Pertamina, Indonesia

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

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

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

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

Tatacipta Dirgantara
Faculty of Mechanical
and Aerospace
Engineering, ITB, Indonesia

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

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

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. 30/E/KPT/2018 (Vol. 50 No.1, 2018 - Vol. 54 No.6, 2022)

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. Performance Evaluation of Homogeneous Charge Compression Ignition Combustion Engine – A Review Pradyumna Kodancha, Anand Pai, Chandrakant R Kini, Rajesh K Bayar	289
2. A Proposal of Seismic Index for Existing Buildings in Indonesia using Pushover Analysis Alex Kurniawandy & Shoji Nakazawa	310
3. Extreme Significant Wave Height of Western and Central Indonesian Seas and Its Correlation with ISO 19901-1:2015 Andojo Wurjanto, Julfikhsan Ahmad Mukhti, Hijir Della Wirasti & Yosinta Eka Widyanintias	331
4. Seismic Performance of RC Hollow Rectangular Bridge Piers Retrofitted by Concrete Jacketing Considering the Initial Load and Interface Slip Made Suarjana, Daniel Dixon Octora & Muhammad Riyansyah	343
5. Evaluation Evaluation of Bio-Corrosion on Carbon Steel by Bacillus Megaterium in Biodiesel and Diesel Oil Mixture Yustina Metanoia Pusparizkita, Wolfgang Schmahl, Tjandra Setiadi, Bork Ilseman, Mike Reich, Hary Devianto & Ardiyan Harimawan	370
6. Aging and Rheological Properties of Latex and Crumb Rubber Modified Bitumen Using Dynamic Shear Rheometer Abdulnaser M Al-Sabaei, Bayu Agus Mustofa, Muslich Hartadi Sutanto, Sri Sunarjono, Nura Bala	385
7. Comparison of Several Processing Methods in Preserving the Flavor Properties of Andaliman (<i>Zanthoxylum acanthopodium</i> DC.) Fruit Florensia Irena R. Napitupulu, Christofora Hanny Wijaya, Sulistiyani, Endang Prangdimurti, Clarissa Akyla, Lisa Amanda Yakhin & Susi Indriyani	399

8. Bisphenol A Removal by Graphene Oxide Applied in Different Processes
Eyüp Debik, Kubra Ulucan-Altuntas & Ahmed El Hadki 413
9. Adsorption of Ethylene using Cobalt Oxide-Loaded Pillared Clay
Pani Satwikanitya, Imam Prasetyo, Moh. Fahrurrozi & Teguh Ariyanto 424
10. Microplastics Abundance and Uptake by *Meretrix lyrata* (Hard Clam) in Mangrove Forest
Fauziah binti Shahul Hamid, Wang Jia & Rozainah Mohamad Zakaria 436