

# The 5th International Conference on Industrial, Mechanical, Electrical, and Chemical Engineering 2019 (ICIMECE 2019)

Surakarta, Indonesia • 17–18 September 2019

**Editors** • Wahyudi Sutopo, Miftahul Anwar, Muhammad Hamka Ibrahim,  
Hari Maghfiroh, Chico Hermanu Brilianto Apribowo,  
Sutrisno Ibrahim and Muhammad Hisjam



# Preface: The 5th International Conference on Industrial, Mechanical Electrical, and Chemical Engineering 2019 (ICIMECE 2019)

Cite as: AIP Conference Proceedings **2217**, 010001 (2020); <https://doi.org/10.1063/12.0000222>  
Published Online: 14 April 2020



View Online



Export Citation

## ARTICLES YOU MAY BE INTERESTED IN

### [Risk estimation of construction activities of buildings](#)

AIP Conference Proceedings **2217**, 020001 (2020); <https://doi.org/10.1063/5.0004435>

### [Preface: The 4th International Conference on Industrial, Mechanical, Electrical, and Chemical Engineering](#)

AIP Conference Proceedings **2097**, 010001 (2019); <https://doi.org/10.1063/1.5098170>

### [Interface damage mechanics in fiber reinforced plastic composite - A review](#)

AIP Conference Proceedings **2217**, 020002 (2020); <https://doi.org/10.1063/5.0000808>

 Author Services

*Maximize your publication potential with*  
English language editing and  
translation services

LEARN MORE



## **Preface: The 5th International Conference on Industrial, Mechanical Electrical, and Chemical Engineering 2019 (ICIMECE 2019)**

On behalf Organizing Committee, it is my privilege to welcome you to The Fifth International Conference on Industrial, Mechanical, Electrical, and Chemical Engineering (5<sup>th</sup> ICIMECE 2019). The ICIMECE 2019 is organized by Faculty of Engineering – Universitas Sebelas Maret and supported by Universiti Teknologi Malaysia; Curtin University – Serawak; Indonesian Institute of Sciences (LIPI); National Standardization Agency of Indonesia (BSN); Agency for Cooperation of Higher Education of Industrial Engineering (BKSTI); Agency for Cooperation of Higher Education of Electrical Engineering (FORTE); Industrial Engineering and Operations Management Society International (IEOM Society International); National Centre for Sustainable Transportation Technology (NC STT); and USAID–SHERA (Sustainable Higher Education Research Alliances). The ICIMECE was formerly known as IMECE which was first held in November 2015.

This event will include the participation of renowned keynote speakers, workshop, oral presentations, and technical conferences related to the topics dealt with in the program. This year, the conference theme is “*Development and Commercialization of Green Technology*”. The ICIMECE 2019 conference is going to be a broad, widely provided opportunity for the different areas to exchange new ideas and experiences, as well as to establish business or research relations and to find global partners for future collaboration in the fields of engineering.

Speakers from Indonesia, Japan, USA, Malaysia, Myanmar, Brunei Darussalam, Iran, and Singapore submitted the articles to this conference with 214 standard oral presentations presented – which was selected from 306 papers with an acceptance rate of around 70 %. This year’s program features 8 keynote speakers including Prof. Ir. Dr.-Ing. Eko Supriyanto, UTM Malaysia; Prof. Dr. Nurul Taufiqu Rochman, M.Eng, Ph.D, LIPI Indonesia; Harry Kasuma (Kiwi) Aliwarga, UMG Myanmar; Prof. Minoru Sasaki, Gifu University Japan; Dr. Robert de Souza Ph.D., MSc, BSc Hons, NUS Singapore; Dr. Eng. Bentang Arief Budiman, Bandung Institut of Technology Indonesia; and Dr. Denni Kurniawan, University Technology Brunei - Brunei Darussalam. We also have 13 invited speakers in 5 parallel sessions for two days on September 17-18, 2019. It is expected to underline the issues on “*Development and Commercialization of Green Technology*”. All presenters are also invited to submit a full paper which will published in the American Institute of Physics (AIP) conference proceeding and will be processed to be indexed by SCOPUS. All paper publication had already peer-reviewed from independence reviewers and associated editorial team to ensure high quality of contributed material.

We would like to thank all those people who have worked hard in this period for the preparation and the success of this meeting, including all the contributors, the authors, the associate editors, the review committee, the program and steering committees, sponsors and all the members of the organization.

Finally, it is our great honor and pleasure to accept the responsibilities and challenges as a Conference General Chair. We hope that the conference will be a stimulating, informative, enjoyable and fulfilling experience for all who attend it.

Thank you very much.

### **Organizing Committee of ICIMECE 2019**

Dr. Wahyudi Sutopo, ST, M.Si

Dr. Miftahul Anwar, S.Si., M.Eng.

## Table of Contents

### THE 5TH INTERNATIONAL CONFERENCE ON INDUSTRIAL, MECHANICAL, ELECTRICAL, AND CHEMICAL ENGINEERING 2019 (ICIMECE 2019)

< PREV NEXT >



Conference date: 17–18 September 2019

Location: Surakarta, Indonesia

ISBN: 978-0-7354-1971-1

Editors: Wahyudi Sutopo, Miftahul Anwar, Muhammad Hamka Ibrahim, Hari Maghfiroh, Chico Hermanu Brilianto Apribowo, Sutrisno Ibrahim and Muhammad Hisjam

Volume number: 2217

Published: Apr 13, 2020

DISPLAY : 20 50 100 all

## PRELIMINARY



BROWSE VOLUMES

https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all

1/80

Full . April 2020

### Detection of forest fire used multi sensors system for peatland area in Riau Province

Evizal Abdul Kadir, Sri Listia Rosa and Rizdqi Akbar Ramadhan

AIP Conference Proceedings 2217, 020003 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000493> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Drilling of AISI 316L stainless steel: Effect of coolant condition on surface roughness and tool wear

Ahmad Zubair Sultan, Safian Sharif and Denni Kurniawan

AIP Conference Proceedings 2217, 020004 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000548> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Project risk management in Indonesia: A research overview

Budi Hartono

AIP Conference Proceedings 2217, 020005 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000621> [Open URL](#)



BROWSE VOLUMES

https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all

3/80

Full . April 2020

### Preface: The 5th International Conference on Industrial, Mechanical Electrical, and Chemical Engineering 2019 (ICIMECE 2019)

AIP Conference Proceedings 2217, 010001 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/12.0000222> [Open URL](#)



## PLENARY AND KEYNOTE PAPERS

Full . April 2020

### Risk estimation of construction activities of buildings

Alusine Barrie, Jafri Mohd Rohani and Norizah Redzuan

AIP Conference Proceedings 2217, 020001 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0004435> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Interface damage mechanics in fiber reinforced plastic composite – A review

Bentang Arief Budiman and Putri Nur Halimah

AIP Conference Proceedings 2217, 020002 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000808> [Open URL](#)



BROWSE VOLUMES

https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all

2/80

SHOW ABSTRACT



Full . April 2020

### Review on generation expansion planning optimization by considering government policy implementation impact

Sarjiya and Rizki Firmansyah Setya Budi

AIP Conference Proceedings 2217, 020006 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000734> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The bio-mimicry method in creative process of new product design inspired by nature solution

Ratna Purwaningsih, Purnawan Adi Wicaksono and Singgih Saptadi

AIP Conference Proceedings 2217, 020007 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000926> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Robot control systems using bio-potential signals

Minoru Sasaki, Kojiro Matsushita, Muhammad Ilhamdi Rusyidi, Pringgo Widyo Laksono, Joseph Muguro, Muhammad Syaiful Amri bin Suhaimi and Waweru Njeri

AIP Conference Proceedings 2217, 020008 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000926> [Open URL](#)



BROWSE VOLUMES

https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all

4/80

SHOW ABSTRACT



Full . April 2020

**Performance comparison of fleet management system using IoT node device based on MQTT and HTTP protocol**

Harry Kasuma Aliwarga, Alwy Herfian Satriatama and Bruno Fandi Adi Pratama

AIP Conference Proceedings 2217, 020009 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0003076> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Synthesis of hydroxyapatite from seashells via calcination at various temperature using microwave and furnace**

Seow Desmond, Denni Kurniawan and Fethma M. Nor

AIP Conference Proceedings 2217, 020010 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000902> [Open URL](#)

SHOW ABSTRACT

**CONTRIBUTED PAPERS**

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

5/80

**Simulation study on a torsional stiffness test apparatus for space tube frame chassis**

Rafii Alnursyah, Ubaidillah, Hashfi Hazimi, Hanna Nursya'bani and Nurul Muhatat

AIP Conference Proceedings 2217, 030001 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0003033> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Analysis curve of maximum power and torque turbine generated by vertical axis wind turbine based on number of blades**

Langlang Gumilar, Muhammad Afnan Habibi, Dwi Prihanto, Hendro Wicaksono, Jade Rosida Larasati and Achmad Gunawan

AIP Conference Proceedings 2217, 030002 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000709> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Optimization harmonic shunt passive filter using detuned reactor and capacitor bank to improvement power quality in hybrid power plant**

Langlang Gumilar, Denis Eka Cahyani, Arif Nur Afandi, Dezetty Monika and Stieven Netanel Rumokoy

AIP Conference Proceedings 2217, 030003 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000710> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

6/80

SHOW ABSTRACT



Full . April 2020

**Problem analysis of solar water pump installations in Indonesia**

Danar A. Susanto, Utari Ayuningtyas, Hermawan Febriansyah and Meilinda Ayundyahrini

AIP Conference Proceedings 2217, 030004 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000674> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Challenges for standardization: Hyperspectral technology to supports Indonesian food security**

Meilinda Ayundyahrini, Endi Hari Purwanto, Reza Lukiawan and Ajun Tri Setyoko

AIP Conference Proceedings 2217, 030005 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000726> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Bontang LNG plant operational strategy to manage ethane refrigerant inventory during low NGL extraction**

Rendra Prasetyo and Putri Cahyaning Prabandoro

AIP Conference Proceedings 2217, 030006 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000597> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

7/80

SHOW ABSTRACT



Full . April 2020

**Performance comparison in simulation of Mandelbrot set fractals using Numba**

Gilbert Gutabaga Hungilo, Gahizi Emmanuel and Pranowo

AIP Conference Proceedings 2217, 030007 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000636> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**An experimental study of a car maintenance workshop layout optimization**

Agung Premono, Matheus Victor and Himawan Hadi Sutrisno

AIP Conference Proceedings 2217, 030008 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000585> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Numba acceleration of image steganography using Mendelbrot set fractals**

Gahizi Emmanuel, Gilbert Gutabaga Hungilo and Pranowo

AIP Conference Proceedings 2217, 030009 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000597> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

8/80

SHOW ABSTRACT



Full . April 2020

### Clustering of the water characteristics of the Cirata reservoir using the k-means clustering method

Isma Masrofah and Bramantiyo Eko Putro

AIP Conference Proceedings 2217, 030010 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000672> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Production of $\text{LiNi}_{0.6}\text{Mn}_{0.2}\text{Co}_{0.2}\text{O}_2$ via fast oxalate precipitation for Li-ion

Arif Jumari, Khikmah Nur Rikhy Stulasti, Refarmita Nur Halimah, Agus Purwanto, Luthfiatul Azizah Aini and Rahmawati Mintarsih

AIP Conference Proceedings 2217, 030011 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000646> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Deep learning for recognition of Javanese batik patterns

Suci Adhita Mariani, Reswani and Albertus Joko Santoso

[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

9/80

AIP Conference Proceedings 2217, 030012 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000686> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Emotion recognition based on deep learning with auto-encoder

I. Made Nomo Wiranata, Pranowo and Albertus Joko Santoso

AIP Conference Proceedings 2217, 030013 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000679> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Classification of Indonesian coffee types with deep learning

Alfan Rivalto, Pranowo and Albertus Joko Santoso

AIP Conference Proceedings 2217, 030014 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000678> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Synthesis of Co/Ni - Hydroxyapatite by electrochemical method

[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

10/80

Adrian Nur, Anatta Budiman, Arif Jumari, Fauziatul Fajaroh, Nazriati, M. Novalianto Sangadji and Hanifah Ayu Pratiwi

AIP Conference Proceedings 2217, 030015 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000640> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Analysis of working posture on musculoskeletal disorders of vocational garment student's in garment assembly operations practice

Irham Aribowo, Bambang Suhardi and Eko Pujiyanto

AIP Conference Proceedings 2217, 030016 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000602> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Reprocessing through co-precipitation of NCA cathode scrap waste for cathode material of Li-ion battery

Arif Jumari, Enni Apriliyani, Soraya Ulfa Muzayanha, Agus Purwanto and Adrian Nur

AIP Conference Proceedings 2217, 030017 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000647> [Open URL](#)

SHOW ABSTRACT

[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

11/80

Full . April 2020

### An integrated inventory model for deteriorated and imperfect items considering carbon emissions and inflationary environment

Dewi Sri Utami, Wakhid Ahmad Jauhari and Cucuk Nur Rosyidi

AIP Conference Proceedings 2217, 030018 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000610> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The effects of carbon cap limitations on inventory and multimodal transportation

Thina Ardliana, I. Nyoman Pujawan and Nurhadi Siswanto

AIP Conference Proceedings 2217, 030019 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000697> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The sintering time of $\text{LiFePO}_4/\text{C}$ synthesis by the co-precipitation method

Adrian Nur, Agus Purwanto, Tika Paramitha, Muhammad Nizam, Luthfi Mufidatul Hasanah, Agnolla Emely Cupitasari and Della Intania Putri Nizi

AIP Conference Proceedings 2217, 030020 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000694> [Open URL](#)[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

12/80

SHOW ABSTRACT



Full . April 2020

### The effect UV-B mutation on biodiesel from microalgae *Botryococcus braunii* using esterification, transesterification and combination of esterification–transesterification

Anggia Putri Ramadhani, Muhammad Hafiz Prashantyo, Thea Prastiwi Soedarmodjo and Arief Widjaja

AIP Conference Proceedings 2217, 030021 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000554> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Mechanical properties of films from carboxy methyl glucomannan and carrageenan with glycerol as plasticizer

Fadilah, Ari Diana Susanti, Sperisa Distantina, Dea Putri Purnamasari and Jihan Fahrizal Ahmad

AIP Conference Proceedings 2217, 030022 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000842> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Synthesis of lithium nickel manganese cobalt as cathode

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

13/80

### coprecipitation method

Hendri Widiyandari, Riki Ardiansah, Anisa Surya Wijareni, Mohtar Yuniyanto and Agus Purwanto

AIP Conference Proceedings 2217, 030023 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000664> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Optimization model for determining economic production quantity and process mean by considering internal and external quality loss

Muhammad Habib Isna Nur Asnan, Cucuk Nur Rosyidi and Eko Pujiyanto

AIP Conference Proceedings 2217, 030024 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000717> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### A brief and rapid method of synthesizing LiFePO<sub>4</sub>/C for lithium ion battery

Atika Aulia Novita Sari, Diajeng Putri Suciutami, Luthfi Mufidatul Hasanah, Soraya Ulfa Muzayanha, Cornelius Satria Yudha, Tika Paramitha and Agus Purwanto

AIP Conference Proceedings 2217, 030025 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000494> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

14/80

Full . April 2020

### A framework of stand up motorized wheelchair as universal design product to help mobility of the motoric disabled people

B. Bambang Sulistiyawan, Susy Susmartini and Lobes Herdiman

AIP Conference Proceedings 2217, 030026 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001084> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Evaluation of injury risk manual pattern garment workshop in textile vocational school

Abdul Rohman Heryadi, Susy Susmartini and Lobes Herdiman

AIP Conference Proceedings 2217, 030027 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000675> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Design of mussel Peeler machine ergonomic

Unggul Prabowo, Agung Prakoso Wicaksono, Renanda Herlian and Yosua Heru Irawan

AIP Conference Proceedings 2217, 030028 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000622> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

15/80

Full . April 2020

### Kinetics of hydrothermal decomposition of glucose in ethanol-water solution

Bregas Siswahjono Tatag Sembodo, Dwi Ardiana Setyawardhani, Anisa Darma Brilliant and Kintan Marchika Putri

AIP Conference Proceedings 2217, 030029 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000724> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Relationship of basic principles in ISO 14001, ISO 50001, green building and zero emission building (ZEB)

Endi Hari Purwanto, Ajun Tri Setyoko and Auraga Dewantoro

AIP Conference Proceedings 2217, 030030 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000634> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Kesambi oil extraction using the solvent extraction method

Yunita Merlin Tamara, Wahyu Nur Hidayat, Asma Nur Azizah and Dwi Ardiana Setyawardhani

AIP Conference Proceedings 2217, 030031 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000661> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

16/80

SHOW ABSTRACT



Full . April 2020

**Development of food safety design for smes yogurt using HACCP**

Ellia Kristiningrum and Ike Permatasari

AIP Conference Proceedings 2217, 030032 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000627> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Bio-CSTR for biogas production from POME treatment – technology: Design and analysis**

Joni Prasetyo, Samuel Pati Senda, Winda Wulandari and Nabila Nabila Anindita

AIP Conference Proceedings 2217, 030033 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000783> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Preliminary research of surface electromyogram (sEMG) signal analysis for robotic arm control**

Pringgo Widyo Laksono, Minoru Sasaki, Kojiro Matsushita, Muhammad Syaiful Amri bin

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

17/80

AIP Conference Proceedings 2217, 030034 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000542> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Performance evaluation of the sensors accuration on river monitoring system based-on heterogeneous wireless sensor network**

Amin Suharjono, Roni Apriantoro, Muhammad Mukhlisin, Ariaji Prichi Gamayuda and Annissa Mahardika

AIP Conference Proceedings 2217, 030035 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000501> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Pricing for product-service system under dual-channel supply chain**

Erwin Widodo, Ismi Nur Adha Shabir and Bambang Syairudin

AIP Conference Proceedings 2217, 030036 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0003100> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

18/80

Full . April 2020

**Identifying factors for assessing regional readiness level to manage natural disaster in emergency response periods**

Naniek Utami Handayani, Diana Puspita Sari, M. Mujiya Ulkhaq, Adi Setyo Nugroho and Ajeng Hanifah

AIP Conference Proceedings 2217, 030037 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000904> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**A data envelopment analysis approach for assessing the efficiency of sub-sectors of creative industry: A case study of batik enterprises from Semarang, Indonesia**

Naniek Utami Handayani, Diana Puspita Sari, M. Mujiya Ulkhaq, Yusuf Widharto and Risa Candra Ayu Fitriani

AIP Conference Proceedings 2217, 030038 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000905> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Development of neck surface electromyography gaming control interface for application in tetraplegic patients' entertainment**

Joseph Kamau Muguro, Minoru Sasaki, Kojiro Matsushita, Waweru Njeri, Pringgo Widyo Laksono and Muhammad Syaiful Amri bin Suhaimi

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

19/80

AIP Conference Proceedings 2217, 030039 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000500> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Analysis of load flow and continuous power flow method in power system : A case study of 500 kV Java-Bali electrical power system**

Chico Hermanu Brillianto Apriowo, Oktavian Listiyanto and Muhammad Hamka Ibrahim

AIP Conference Proceedings 2217, 030040 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000821> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Power generation and transmission system analysis by using cooperative game theory (case study: Electricity in Kalimantan)**

Erwin Widodo and Wiwit Marta Pangesty Putri

AIP Conference Proceedings 2217, 030041 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001048> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

20/80



## Technical feasibility for technology commercialization of comformity assessment laboratory (study case: Manual wheelchair testing laboratory)

Devi Putri Rahmawati, Fakhrina Fahma, Wahyudi Sutopo and Risang Pamungkas Anurogo

AIP Conference Proceedings 2217, 030042 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000740> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Defining quality function deployment to improve the usability of prosthetic hand

Novie Susanto, Manik Mahachandra, Ratna Purwaningsih, Wiwik Budiawan and Ahmad Sahal Afhami

AIP Conference Proceedings 2217, 030043 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000984> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Repetitive task analysis in cutting tofu process using assessment of repetitive task tool (case study in Sari Murni SME)

Rahmaniyah Dwi Astuti, Anindya Ratna Lakhsita and Bambang Suhardi

AIP Conference Proceedings 2217, 030044 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000615> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

21/80

SHOW ABSTRACT



Full . April 2020

## Quality assessment of COC (Code of Conduct) by SERVQUAL method and IPA model

Widhiyaningrum and Novie Susanto

AIP Conference Proceedings 2217, 030045 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000769> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Utilization of bluetooth wireless for SOFC test rigs with android smartphone device

Darjat, Sulisty, Aris Triwiyatno, Sumardi and Hot Asi

AIP Conference Proceedings 2217, 030046 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000916> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Customer switching behaviour factors analysis in airline industry of low cost carrier and full service carrier

Aries Susanty, Nia Budi Puspitasari and Bariqi Rahadyan Putera

AIP Conference Proceedings 2217, 030047 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000504> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

22/80

SHOW ABSTRACT



Full . April 2020

## Modeling the best route and truck capacity for delivering ice cream product: Vehicle routing problem approach and estimating expected interruption cost approach

Heryanti Ika Puspitasari, Aries Susanty and Singgih Saptadi

AIP Conference Proceedings 2217, 030048 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000654> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Evaluate the performance and design of a low frequency vibration calibrator system

Fajar Budi Utomo, Bondan Dwisetyo, Chery Chaen Putri and Maharani Ratna Palupi

AIP Conference Proceedings 2217, 030049 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000673> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## A conceptual framework on the design of intelligent supply

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

23/80

Nunung Nurhasanah, Machfud, Djumali Manguwidjaja and Muhammad Romli

AIP Conference Proceedings 2217, 030050 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000742> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## The effect of pressure and temperature on biodiesel production using castor oil

Dandun Mahesa Prabowoputra, Agus Sartomo and Suyitno

AIP Conference Proceedings 2217, 030051 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000504> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Factorial design of the effect of reaction temperature and reaction time on biodiesel production

Agus Sartomo, Dandun Mahesa Prabowoputra and Suyitno

AIP Conference Proceedings 2217, 030052 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000505> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

24/80

## The preliminary study on functional food standardization to ensure the quality of green product: Innovation product case study

Ellia Kristiningrum, Danar Agus Susanto, Putty Anggraeni and Muhammad Haekal Habibie

AIP Conference Proceedings 2217, 030053 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000618> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Preliminary study of activated carbon as support catalyst for low cost methanol production from biomass syngas

Fusia Mirda Yanti, Asmi Rima Juwita, Novio Valentino, S. D. Sumbogo Murti, Astri Pertiwi, Nurdiah Rahmawati, Tyas Puspita Rini, Atti Sholihah, Joni Prasetyo, Hens Saputra, Shiori Iguchi and Reiji Noda

AIP Conference Proceedings 2217, 030054 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000869> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Ergonomic principles in traffic signs comprehension: A literature review

Farid Ishartomo, Bambang Suhardi and Jafri Mohd Rohani

AIP Conference Proceedings 2217, 030055 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000701> [Open URL](#)



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

25/80

Full . April 2020

## Implementation of life cycle assessment (ISO 14040) on SME fish nugget producer in Bandung

Ajun Tri Setyoko and Ellia Kristiningrum

AIP Conference Proceedings 2217, 030056 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000630> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Designing to improvements of posture and the working environment of employees

Abel Kristanto Widodo and Singgih Saptadi

AIP Conference Proceedings 2217, 030057 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000584> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Consumer perception analysis of electric car vehicle in Indonesia

Martha Widhi Dela Utami, Adella Tasya Haryanto and Wahyudi Sutopo

AIP Conference Proceedings 2217, 030058 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000541> [Open URL](#)



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

26/80

SHOW ABSTRACT



Full . April 2020

## Technology assessment of liquid waste in rubber factory using analytical hierarchy process and promethee methods

Aulia Ishak and Vina Akmaliah

AIP Conference Proceedings 2217, 030059 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000711> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Optimal energy control of DC motor using fuzzy logic controller to supervise PID control

Hari Maghfiroh, Ryoki Martfuadi and Muhammad Hamka Ibrahim

AIP Conference Proceedings 2217, 030060 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000617> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Life cycle energy and environmental impact assessment of CRIMSON sand casting on intake manifold production process

Salman Alfarisi and Wahyudi Sutopo

AIP Conference Proceedings 2217, 030061 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000617> [Open URL](#)



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

27/80

SHOW ABSTRACT



Full . April 2020

## Markov chain analysis to identify the market share prediction of new technology: A case study of electric conversion motorcycle in Surakarta, Indonesia

Maria Nindy Alif Jodinesa, Wahyudi Sutopo and Roni Zakaria

AIP Conference Proceedings 2217, 030062 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000817> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Analysis of motor power characterization and power efficiency on operation of electric car prototype

Ferdiansyah Ashil Farisi, Miftahul Anwar, M. Nizam, Jusuf Abimas Pratama, Sifa'us Wulaning Arsri, S. Kaleg, A. Hapid, Sukmaji. I. Cahyono and Kuncoro Diharjo

AIP Conference Proceedings 2217, 030063 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000979> [Open URL](#)

SHOW ABSTRACT



Full . April 2020



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

28/80

## Literature review of city logistics: Classification of studies and dominant factors in developing countries

Ary Arvianto, Bertha Maya Sopha, Anna Maria Sri Asih and Muhammad Ali Imron

AIP Conference Proceedings 2217, 030064 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000623> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Framework for developing electric wheelchair standards for people with disabilities

Syifa Luthfiana Ansan, Fakhri Fahma, Wahyudi Sutopo and Meilinda Ayundyahrini

AIP Conference Proceedings 2217, 030065 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000986> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Multi-response optimization of woven fabric tensile strength and breaking elongation using Taguchi method and grey relational analysis

Lintang Rainamaya Nursanti, Eko Pujianto and I. Wayan Suletra

AIP Conference Proceedings 2217, 030066 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000765> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

29/80

Full . April 2020

## Analysis of Indonesian tea competitiveness in the international market

Yessica Nugrahaningrum, Roni Zakaria and Fakhri Fahma

AIP Conference Proceedings 2217, 030067 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000810> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Analytical study of temperature effect on current and voltage of battery at charging and discharging condition on electric vehicle

S. W. Arsri, M. Anwar, F. A. Farisi, J. A. Pratama, I. Iftadi, S. Kaleg, A. Hapid, S. I. Cahyono and K. Diharjo

AIP Conference Proceedings 2217, 030068 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000779> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Extraction and characterization of nanocrystalline cellulose (NCC) from ramie fiber by sulphuric acid hydrolysis

R. Faiz Listyanda, Kusmono, Muhammad Waziz Willdan and Mochammad Noer Ilman

AIP Conference Proceedings 2217, 030069 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001068> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

30/80

SHOW ABSTRACT



Full . April 2020

## Qualitative comparative analysis (QCA): Multi-variables and small samples research approach (case study: Indonesia's Megaprojects)

Retno Wulan Damayanti, Budi Hartono and Andi Rahadiyan Wijaya

AIP Conference Proceedings 2217, 030070 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000768> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Savonius turbine performance with slotted blades

Catur Harsito, Dominicus Danardono Dwi Prija Tjahjana and Budi Kristiawan

AIP Conference Proceedings 2217, 030071 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000797> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## The impact of critical success factor of lean six sigma implementation towards the improvement of business performance on low-cost hotel industry: A literature review

Alima Shofia, Arfan Bakhtiar and Heru Prastawa

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

31/80

AIP Conference Proceedings 2217, 030072 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000707> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Design and simulation linear quadratic gaussian (LQG) for pan-tilt face tracking camera servos

Agus Ramelan, Joko Slamet Saputro, Chico Hermanu Brillianto Apribowo, Muhammad Hamka Ibrahim and Subuh Pramono

AIP Conference Proceedings 2217, 030073 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000614> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Design and development of real-time and portable water quality monitoring system for agriculture irrigation

Yuana Ayub Sunarya, Muhammad Hamka Ibrahim, Chico Hermanu Brillianto Apribowo, Subuh Pramono and Meiyanto Eko Sulisty

AIP Conference Proceedings 2217, 030074 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000802> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

32/80

Full . April 2020

**A consignment policy for a supplier-retailer inventory system**

Yuka Sato, Wakhid Ahmad Jauhari and Cucuk Nur Rosyidi

AIP Conference Proceedings 2217, 030075 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000787> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Role of rapid manufacturing technology in wearable customized assistive technology for modern industry**

Ilham Priadythama, Lobes Herdiman and Susy Susmartini

AIP Conference Proceedings 2217, 030076 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000747> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Application of quality function deployment for diversification of souvenirs of ATBM woven fabrics for foreign tourist needs (case study: Sragen Regency)**

Navy Salem, Eko Liquidanu, I. Wayan Suletra and Murman Budijanto

AIP Conference Proceedings 2217, 030077 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000746> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

33/80

Full . April 2020

**Sustainable economic production quantity model with rework and product return policy**

Ilham Nur Fadlil, Ratna Novitasari and Wakhid Ahmad Jauhari

AIP Conference Proceedings 2217, 030078 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000655> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Improvement of work processes and methods to achieve production targets using VA/NVA analysis, ECRS and line balancing**

Ilham Nur Fadlil and Cucuk Nur Rosyidi

AIP Conference Proceedings 2217, 030079 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000657> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Enhancement quality of sand casting manufacturing product using Taguchi method**

Salman Alfarisi and Wahyudi Sutopo

AIP Conference Proceedings 2217, 030080 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000497> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

34/80

Full . April 2020

**Integrated economic and environmental model for vendor-buyer inventory system with carbon cap and trade policy**

Euis Nurlathifah, Meidiana Farras Isnafitri and Wakhid Ahmad Jauhari

AIP Conference Proceedings 2217, 030081 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000661> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Implementation of the Halal assurance system for small and medium manufacturing industries at UNSQUA**

Fakhrina Fahma, Roni Zakaria and Chaidir Akbar

AIP Conference Proceedings 2217, 030082 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001064> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Learning from plastic waste village in Boyolali Indonesia: SME-based plastic recycling industries**

Farid Ishartomo, Sulistiono, Isna Nugraha, Aisyah Itsnaini Sholichah and Bambang Suhardi

AIP Conference Proceedings 2217, 030083 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000700> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

35/80

SHOW ABSTRACT



Full . April 2020

**Dye sensitized solar cell (DSSC) with immersion time variation of working electrode on the dye of C<sub>4</sub> plant chlorophyll of corn leaves (*Zea mays* L.)**

R. Anggraini, F. Nurosyid and T. Kusumaningsih

AIP Conference Proceedings 2217, 030084 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000600> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Design of electric guitar 8 strings with combination of smartphone devices as a virtual guitar effect using reverse engineering method**

Sulistiono, Bambang Suhardi and Susy Susmartini

AIP Conference Proceedings 2217, 030085 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000703> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Analysis and topology optimization structural design excavator bucket tooth using finite element method**

Sulistiono, Bambang Suhardi and Susy Susmartini

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

36/80



BROWSE VOLUMES

Sumar Hadi Suryo, Wijdan Muhammad Fawwaz, Yogi Adi Wijaya, Eko Wahyu Saputro and Harto

AIP Conference Proceedings 2217, 030086 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000531> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Measurement model of halal practice readiness among food manufacturing small medium enterprises

Ida Ciyanti, Anita Indrasari, Wahyudi Sutopo and Eko Liquiddanu

AIP Conference Proceedings 2217, 030087 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000669> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The effect of variation in the type of contact between cells electrodes and variation of dye on dye sensitized solar cell efficiency (DSSC)

R. Kusumawati, F. Nurosyid and A. Supriyanto

AIP Conference Proceedings 2217, 030088 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000601> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

Full . April 2020

### Application of quality function deployment (QFD) level 2 for the development of traditional textile motifs (case study: The design of the civil servant uniform in Sragen that produced in Sukoharjo)

Arga Seta Asmara Sakti, Eko Liquiddanu and I. Wayan Suletra

AIP Conference Proceedings 2217, 030089 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000846> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Green building potential of existing dormitory building based on energy efficiency and conservation

Rosi Marta Da Huba, Anis Rahmawati, Taufiq Lilo Adi Sucipto, Muhammad Kunta Biddinika and Arif Darmawan

AIP Conference Proceedings 2217, 030090 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000715> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Early warning of food security in East Java Indonesia using a system dynamics model

Vina Vahlevi Al Juned, Iwan Vanany, Diesta Iva Maftuhah and Granita Hajar

AIP Conference Proceedings 2217, 030091 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000860> [Open URL](#)



BROWSE VOLUMES

SHOW ABSTRACT



Full . April 2020

### Design of a telemedicine robot using behavior-based control architecture

Nanda Ferdana, Andi Adriansyah, Setiyo Budiyanto and Julpri Andika

AIP Conference Proceedings 2217, 030092 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000595> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Effect of water depth and water flow on the physics and mechanic properties of the underwater wet welded low carbon steel with post weld heat treatment

Syaukaty Yasinta, Triyono, Nurul Muhayat and Y. C. N. Saputro

AIP Conference Proceedings 2217, 030093 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000658> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Preliminary study of lithium nickel cobalt aluminum oxide synthesized by flame assisted spray pyrolysis

Tika Paramitha, Hendri Widiyandari, Agus Purwanto, Cornelius Satria Yudha, Adi Prasetya



BROWSE VOLUMES

AIP Conference Proceedings 2217, 030094 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000495> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Effect of electrospinning distance to fabricate ZnO nanofiber as photoanode of dye-sensitized solar cells

Zainal Arifin, Syamsul Hadi, Hanung Nugroho Jati, Singgih Dwi Prasetyo and Suyitno

AIP Conference Proceedings 2217, 030095 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000705> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The influence of electrospinning flow rate parameter on ZnO nanofiber as photoanode of dye-sensitized solar cell

Muhammad Zuhdi Khusaini, Hanung Nugroho Jati, Suyitno, Syamsul Hadi and Zainal Arifin

AIP Conference Proceedings 2217, 030096 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000702> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

Putri Nur Halimah, Bentang Arief Budiman and Poetro Lebdo Sambegoro

AIP Conference Proceedings 2217, 030097 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000689> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Assessment of tourism destination sustainability status using rap-tourism case of natural based tourism

Ratna Purwaningsih, Herdiana Nur Annisa, Aries Susanty and Dian Dita Puspitaningrum

AIP Conference Proceedings 2217, 030098 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000872> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Design and development of PC-based photovoltaic test and measurement device for photovoltaic quality inspection

Kharis Akbar Baharizky, Muhammad Hamka Ibrahim and Muhammad Nizam

AIP Conference Proceedings 2217, 030099 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000801> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

41/80

### Strategic planning in procurement of raw materials based on Kraljic's purchasing portofolio model

Selvina Kharisma Putri, Hery Suliantoro and Darminto Pujotomo

AIP Conference Proceedings 2217, 030100 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000785> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The economic benefits of the implementation of batik Indonesian National Standard (SNI) by ISO methodology - Economic benefit standard (EBS) approach

Phalitatyasetri, Fakhrina Fahma and Wahyudi Sutopo

AIP Conference Proceedings 2217, 030101 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000718> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Slotted blade effect on Savonius wind rotor performance

Agung Dwi Nugroho, Dominicus Danardono Dwi Prija Tjahjana and Budi Kristiawan

AIP Conference Proceedings 2217, 030102 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000891> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

42/80

Full . April 2020

### Public street lighting control and monitoring system using the internet of things

Andi Adriansyah, Setiyo Budiyo, Julpri Andika, Arif Romadlan and Nurdin Nurdin

AIP Conference Proceedings 2217, 030103 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000594> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Halal assurance system implementation and performance of food manufacturing SMEs: A causal approach

Anita Indrasari, Ida Giyanti, Wahyudi Sutopo and Eko Liquidanu

AIP Conference Proceedings 2217, 030104 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000668> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Inventory control of machine spare part using periodic review method : A case study in PT Sari Warna Asli Textile

Latifatul Luluah, Nurruddin Baidowi and Wakhid Ahmad Jauhari

AIP Conference Proceedings 2217, 030105 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000687> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

43/80

Full . April 2020

### An application of anticipatory FMEA for preventing failures in humanitarian response operation

Agung Sutrisno, Dwi Handayani, Wahyu Caesarendra, Indra Gunawan, Mufrida Meri and Widiawati Purba

AIP Conference Proceedings 2217, 030106 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000612> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Soil moisture clustering using the k-means clustering method in the UNS's agricultural laboratory at Jumantono

Yusuf Budi Kurniawan, Winarno and Wiranto

AIP Conference Proceedings 2217, 030107 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000861> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Future and challenge of 3D printed bone external fixator: Statics stress simulations of polycarbonate Taylor spatial frame ring

Ilham Priadythama, Lobesh Herdiman and Taufiq Rochman

AIP Conference Proceedings 2217, 030108 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000748> [Open URL](#)



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

44/80

SHOW ABSTRACT



Full . April 2020

**Creating motifs using silver electrolyte gel in electroplating technique**

Taufiq Immawan, Kurnia and Paryana Puspaputra

AIP Conference Proceedings 2217, 030109 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000764> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**People detection and tracking methods for intelligent surveillance system**

Wahyu Kurniawan, Sutrisno Ibrahim and Meiyanto Sulistyono

AIP Conference Proceedings 2217, 030110 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001022> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Fault tree and decision making trial and evaluation laboratory model for formulating risk mitigation strategies at water production process of PDAM Baubau**

Widya Spalanzani, Udisubakti Ciptomulyono, Mokhammad Suef, Asmuddin and Salwiah

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

45/80

AIP Conference Proceedings 2217, 030111 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000750> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Application of demand responsive bus priority traffic signal control at one-way system with contra flow bus lane under mixed traffic**

Budi Yulianto and Setiono

AIP Conference Proceedings 2217, 030112 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000625> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Analysis of risk factors nonproductive time on geothermal drilling in Indonesia**

Mokh Kandari, Catot Yulianto and Singgih Saptadi

AIP Conference Proceedings 2217, 030113 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000918> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

46/80

**Policy determination of inventory control of batik fabric using Q and P lost sale probabilistic model through montecarlo simulation approach as the system testing analysis**

M. Iqbal Sabit, Agus Mansur and Faizuddin Firdaus

AIP Conference Proceedings 2217, 030114 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0004281> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Performance analysis of MMSE based interference suppression in MU MIMO system**

Subuh Pramono, Budi Basuki Subagio, Eddy Triyono, Agus Ramelan, Chico Hermanu Brillianto Apribowo and Muhammad Hamka Ibrahim

AIP Conference Proceedings 2217, 030115 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000736> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Parallel injection molding machine scheduling by considering parameter process conservation**

R. B. Seno Wulung and Midarto Dwi Wibowo

AIP Conference Proceedings 2217, 030116 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000557> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

47/80

Full . April 2020

**Optimum pipe network of tofu and tempe wastewater distribution using multiple sources single sink network model**

I. Wayan Suletra, Yusuf Priyandari and Eko Liquiddanu

AIP Conference Proceedings 2217, 030117 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000770> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Workplace design selection framework to increase productivity by using virtual reality**

Benazir Imam Arif Muttaqin, Wahyu Andy Prastyabudi and Rizqa Amelia Zunaidi

AIP Conference Proceedings 2217, 030118 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000641> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**The urea release rate of bead gel based on kappa carrageenan, pectin, and glucomannan**

Sperisa Distantina, Scila Ardanari Santoso and Melia Citrawati

AIP Conference Proceedings 2217, 030119 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000712> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

48/80

SHOW ABSTRACT



Full . April 2020

**Biodiesel production from waste cooking oil by using zirconia catalyst**

Khoirun Nisa, Diah Ayu Almaas Salwa, Alfi Hasanah and Widayat

AIP Conference Proceedings 2217, 030120 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000912> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Effect of inlet blade geometry on performance propeller turbine for pipe inline instalation**

Hasan Bisri, D. D. D. Prija Tjahyana and Dwi Aries Himawanto

AIP Conference Proceedings 2217, 030121 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0004394> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Experimental study of the effect of blade angle on pico tubular bulb turbine performance in horizontal flow**

Akhmad Nurdin, Dwi Aries Himawanto and Syamsul Hadi

AIP Conference Proceedings 2217, 030122 (2020); <https://doi->[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

49/80

SHOW ABSTRACT



Full . April 2020

**Selecting the synthetic leather and outsole supplier for shoe production in small medium enterprise**

Suhartini and Hastawati Chrisna Suroso

AIP Conference Proceedings 2217, 030123 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000605> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Modbus HMI bluetooth for outseal PLC**

Djoko Untoro Suwarno

AIP Conference Proceedings 2217, 030124 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000583> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Development of simultaneous substrate mixer and cold atmospheric plasma treatment for mushroom cultivation**

N. Redzuan, M. R. Rabbi, L. Agun, N. Ahmad, K. Zakaria, R. M. Sirat, R. M. Saad and R. Yasak

[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

50/80

AIP Conference Proceedings 2217, 030125 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0003832> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Performance comparison of VPPM visible light communication demodulator using analog to digital converter and analog comparator sampling**

Muhammad Hamka Ibrahim, Miftahuddin Irfani, Annisa Hanifa and Subuh Pramono

AIP Conference Proceedings 2217, 030126 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000591> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Application of titanium doped g-C<sub>3</sub>N<sub>4</sub> for the degradation of toxic dyes in textiles wastewater**

Anatta Wahyu Budiman, Bregas S. T. Sembodo, Ahmad Alviansyah and Irma B. S. Putri

AIP Conference Proceedings 2217, 030127 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000663> [Open URL](#)

SHOW ABSTRACT

[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

51/80

**Wind powered centrifugal reaction pump for very low head water lifting**

Y. B. Lukiyanto, Budi Setyahandana and Rines

AIP Conference Proceedings 2217, 030128 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000708> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Placement multi flexible alternating current transmission system (FACTS) : Static var compensator (SVC) and static synchronous compensator (STATCOM) for improving voltage stability of 500 KV Java-Bali electrical power system**

Chico Hermanu Brillianto Apriowo, Meiyanto Eko Sulisty, Muhammad Hamka Ibrahim, Agus Ramelan, Subuh Pramono, Joko Slamet Saputro and Oktavian Listiyanto

AIP Conference Proceedings 2217, 030129 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000822> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Defect analysis of shoes production processes using statistical process control and failure mode effect analysis method**

Dimiyati, Afni Khadijah and Ellia Kristiningrum

AIP Conference Proceedings 2217, 030130 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000725> [Open URL](#)[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

52/80



SHOW ABSTRACT



Full . April 2020

**Design and development of PC-based smart programmable power supply for battery charging system**

Muhammad Hamka Ibrahim, Rizal Abdulrozaq Rosadi, Agus Ramelan and Chico Hermanu Brillianto Apribowo

AIP Conference Proceedings 2217, 030131 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000628> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**The design of automatic syringe shaker as the media supporting method of dissolved gas analysis (DGA) transformer oil**

Ratih Rachmatika, Augustinus Sujono and Chico Hermanu Brillianto Apribowo

AIP Conference Proceedings 2217, 030132 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000812> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Developing green manufacturing indicators for the decorative paint industry: A case study of Indonesia**

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

53/80

AIP Conference Proceedings 2217, 030133 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000831> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Parallel simulation of pattern formation in a reaction-diffusion system of FitzHugh-Nagumo using GPU CUDA**

Alfredo Gormantara and Pranowo

AIP Conference Proceedings 2217, 030134 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000667> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Effect of environment on the defects of welded aluminum AA 1100**

Rafael Simanjuntak, Nurul Muhayat, Aditya Rio Prabowo, Y. C. N. Saputro and Triyono

AIP Conference Proceedings 2217, 030135 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000811> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

54/80

**Sentiment analysis of Indonesian presidential election 2019 on the twitter with lexicon-based and support vector machine (SVM)**

Fredericus Dwi Nugraha Putra, Pranowo and Budiyanto Setyohadi

AIP Conference Proceedings 2217, 030136 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000631> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Design close-loop control of BLDC motor speed using PID method in solar power with matlab/simulink**

Chico Hermanu Brillianto Apribowo, Hari Maghfiroh and Arifian Tri Laksita

AIP Conference Proceedings 2217, 030137 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000824> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**The line segmentation algorithm of Indonesian electronic identity card (e-KTP) for data digitization**

Yasmine Afifah, Augustinus Sujono and Chico Hermanu Brillianto Apribowo

AIP Conference Proceedings 2217, 030138 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000670> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

55/80

Full . April 2020

**Big data & early alert (anomaly) detection in Paiton coal fired power plant**

Akbar Rachmad Virgiawan, Adhi Eko Apriyanto and Henry Pariaman

AIP Conference Proceedings 2217, 030139 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000809> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**A novel blind chessboard support system (BCSS) featuring magnetorheological elastomer sensor**

Ardiansyah Al Farouq, Dimas Adiputra, Ubaidillah Ubaidillah and Rumi Iqbal Doewes

AIP Conference Proceedings 2217, 030140 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000773> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Comparative study of electric vehicles in urban area in Indonesia**

Muhammad Nizam

AIP Conference Proceedings 2217, 030141 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000643> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

56/80

Full . April 2020

## Two and four blades windmill characteristics of traditional salt farmers from Demak Region

S. Dio Zevalukito, Y. B. Lukiyanto and Dimas P. Utomo

AIP Conference Proceedings 2217, 030142 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000741> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Routing and scheduling employee transportation using tabu search

Ari Pranata Purba, Nurhadi Siswanto and Ahmad Rusdiansyah

AIP Conference Proceedings 2217, 030143 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000766> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Studies of geothermal silica as rubbers compounds reinforcing filler

Muh. Wahyu Sya'bani, Yuli Suwarno, Mertza Fitra Agustian, Indra Perdana and Rochmadi

AIP Conference Proceedings 2217, 030144 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000730> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

57/80

Full . April 2020

## Optimal energy control of DC-drive conveyor using LQR method

Hari Maghfiroh, Muhammad Gunawan and Miftahul Anwar

AIP Conference Proceedings 2217, 030145 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000619> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Active power and reactive power control using fuzzy-PID compensator for grid-connected inverter

Bagus Fatkhurrozi and Hery Teguh Setiawan

AIP Conference Proceedings 2217, 030146 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000596> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Quality improvement of woods product using the quality function deployment (QFD) method at PT. X

Rosnani Ginting, Eka Periana Pane and Alfin Fauzi Malik

AIP Conference Proceedings 2217, 030147 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000737> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

58/80

Full . April 2020

## Framework of low cost IOT system to monitor coal mining wastewater quality

Abdi Suryadinata Telaga and Radix Rascalia

AIP Conference Proceedings 2217, 030148 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000713> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Plug-in hybrid electric vehicle mode selection strategy for full battery consumption and known road slope condition

Muhammad Hamka Ibrahim, Hari Maghfiroh, Muhammad Nizam and Chico Hermanu Brillianto Apribowo

AIP Conference Proceedings 2217, 030149 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000616> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## The influence of magnesium oxide and montmorillonite on the flame retardant and flexural strength of fiber glass-unsaturated polyester composites

Sahid Bayu Setiajit, Kuncoro Diharjo and Wijang Wisnu Raharjo

AIP Conference Proceedings 2217, 030150 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000723> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

59/80

SHOW ABSTRACT



Full . April 2020

## Investigation on multi-channel types of primary reformer catalyst using computational fluid dynamic (CFD)

Ari Diana Susanti and Yazid Bindar

AIP Conference Proceedings 2217, 030151 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000756> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## The need for national standard of x-band radar technology to detect rainfall and disaster mitigation

Ajun Tri Setyoko, Endi Hari Purwanto, Reza Lukiawan and Meilinda Ayundyahrini

AIP Conference Proceedings 2217, 030152 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000629> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

## Rollover performance analysis of electric bus superstructure frame with alternative material using finite element method

Djoeli Satrjo, Ojo Kurdi, Ismoyo Haryanto, Mohd Shukri Yob, Novi Riyantiarno and Iqbal Taufiqurrahman

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

60/80

AIP Conference Proceedings 2217, 030153 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000820> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### An agent based simulation model for retail price promotion strategies

Ninieť Indah Arvitrida and Adji Candra Kurniawan

AIP Conference Proceedings 2217, 030154 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000509> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Macro ergonomics approach to analyze the quality of public bike-sharing transportation services

Adithya Sudiarno and Shofa Aulia Aldhama

AIP Conference Proceedings 2217, 030155 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000848> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

61/80

### Feasibility of METSI UGM office as a workplace in natural lighting availability and its occupants' adaptive behavior

Arif Kusumawanto, Silfia Mona Aryani and Mega Setyowati

AIP Conference Proceedings 2217, 030156 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000666> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Battery management system design (BMS) for lithium ion batteries

Muhammad Nizam, Hari Maghfiroh, Rizal Abdulrozaq Rosadi and Kirana D. U. Kusumaputri

AIP Conference Proceedings 2217, 030157 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000649> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Integration of quality function deployment (QFD) and value engineering in improving the quality of product: A literature review

Aulia Ishak, Rosnani Ginting and Alfin Fauzi Malik

AIP Conference Proceedings 2217, 030158 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000735> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

62/80

Full . April 2020

### Product development and design with a combination of design for manufacturing or assembly and quality function deployment: A literature review

Rosnani Ginting, Aulia Ishak and Alfin Fauzi Malik

AIP Conference Proceedings 2217, 030159 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000739> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Construction design of multistage axial field BLDC motor

Fahrul, Rusdhianto Effendi Abdul Kadir and Mochammad Rameli

AIP Conference Proceedings 2217, 030160 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001015> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Camera distance effect for smart detection littering

Dedy Ariyanto, Yusuf Ari Bahtiar, Muhammad Taufik and Trie Handayani

AIP Conference Proceedings 2217, 030161 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001680> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

63/80

Full . April 2020

### Assessment of manufacturing readiness level in PT.ABC (case study: Technology on hospital bed products)

Fadli Syamsuddin, Yusuf Priyandari and Susanto Sudiro

AIP Conference Proceedings 2217, 030162 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000799> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### The prototypes of automated guided vehicle based on bluebotics autonomous navigation technology

Hoedi Prasetyo and Laras Prasetyo Adhi

AIP Conference Proceedings 2217, 030163 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000771> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Characterization and bioactivity test of secondary metabolite isolated from ethyl acetic fraction of *Petrosia alfiani* sponge from Barrang Lompo Island

Rahmayanti and Ahyar Ahmad

AIP Conference Proceedings 2217, 030164 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000909> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

64/80

Full . April 2020

**Experimental investigation of blades number of savonius water turbine on performance characteristic**

Dwiseno Wihadi and Stefan Mardikus

AIP Conference Proceedings 2217, 030165 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001063> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Design and aerodynamics analysis of rear wing formula student car using 3 dimension CFD (computational fluid dynamics)**

M. A. Dharmawan, D. D. P. Tjahjana, B. Kristiawan and S. I. Pertiwi

AIP Conference Proceedings 2217, 030166 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001049> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Android-based parking violation reporting application**

Budi Yulianto and Setiono

AIP Conference Proceedings 2217, 030167 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000826> [Open URL](#)

BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

65/80

SHOW ABSTRACT



Full . April 2020

**Measure the readiness of university testing laboratory (case study : Universitas Sebelas Maret)**

Anita Arya Rosanti, Roni Zakaria and Fakhri Fahma

AIP Conference Proceedings 2217, 030168 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000806> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Strengthening strategy for developing internal laboratory readiness to be a testing laboratory (study case : Sebelas Maret University)**

Kristy Permatasari, Fakhri Fahma and Roni Zakaria

AIP Conference Proceedings 2217, 030169 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000867> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Predictive maintenance model for centrifugal pumps under improper maintenance conditions**

Nazmee Hashim, Adnan Hassan and Mohd Foad Abdul Hamid



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

66/80

AIP Conference Proceedings 2217, 030170 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000876> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Numerical solution of Darcy-Brinkman-Forchheimer equation for forced-convective fluid flow through porous medium using DMLPG method**

Pranowo and Agung Tri Wijayanta

AIP Conference Proceedings 2217, 030171 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000586> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**The dynamic of the incineration waste-to-energy power plant policy in Indonesia**

Agusniar Rizkia Luthfia, Albertus Sentot Sudarwanto and Eka Nada Shofa Alkhajar

AIP Conference Proceedings 2217, 030172 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000592> [Open URL](#)

SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

67/80

**Current research on city logistics and possible adoption in developing countries**

Kuncoro Harto Widodo, Yandra Rahadian Perdana, Russell G. Thompson, Hengki Purwoto, Dwi Ardianta Kurniawan and Joewono Soemardjito

AIP Conference Proceedings 2217, 030173 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000774> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Synthesis of biodiesel from kapok (*Ceiba pentandra L.*) seed oil through ultrasound-enhanced transesterification reaction**

Ratna Dewi Kusumaningtyas, Muhammad Yasir Adhi Utomo, Pipit Risky Nurjanah and Dwi Widjanarko

AIP Conference Proceedings 2217, 030174 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000609> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**A scheme to increase Indonesian national standard certification in the batik SMEs (case study at XYZ SME)**

Kurnia Tri Atmojo, Fakhri Fahma and Wahyudi Sutopo

AIP Conference Proceedings 2217, 030175 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000749> [Open URL](#)


SHOW ABSTRACT



BROWSE VOLUMES

<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

68/80


 Full . April 2020

### Characteristics of successive droplets impacting hot aluminum surface around nucleate boiling regime

Arif Widayatama, Akmal Irfan Majid, Teguh Wibowo, Deendarlianto and Samsul Kamal

AIP Conference Proceedings 2217, 030176 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000603> [Open URL](#)

SHOW ABSTRACT



 Full . April 2020

### Analysis of the effect of magnesium addition on Al-Si alloy using stirr casting method on physical and mechanical properties

Teguh Triyono, Eko Surojo and Vicky Tri Utomo

AIP Conference Proceedings 2217, 030177 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0003037> [Open URL](#)

SHOW ABSTRACT


 Full . April 2020

### Synthesis of green diesel through hydrodeoxygenation reaction of used cooking oil over NiMo/Al<sub>2</sub>O<sub>3</sub> catalyst


S. D. Sumbogo Murti, Fusia Mirda Yanti, Atti Sholihah, Asmi Rima Juwita, Joni Prasetyo, Meyly Ekawati Thebora, Edwin Pramana and Hens Saputra

AIP Conference Proceedings 2217, 030178 (2020); <https://doi-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>


<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

69/80

SHOW ABSTRACT


 Full . April 2020

### A proposed policy of medication inventory system in pharmacy installation (case study in Semen Padang Hospital)

Asmuliardi Muluk, Jonrinaldi and Fadhita Maisa Asri

AIP Conference Proceedings 2217, 030179 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000714> [Open URL](#)

SHOW ABSTRACT


 Full . April 2020

### Reducing defect in furniture industry using a lean six sigma approach

Ermayana Megawati, Purnawan Adi Wicaksono and Denny Nurkertamanda

AIP Conference Proceedings 2217, 030180 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0004282> [Open URL](#)

SHOW ABSTRACT


 Full . April 2020

### Municipal solid waste logistics management: A study on reverse logistics


<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

70/80

AIP Conference Proceedings 2217, 030181 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000676> [Open URL](#)

SHOW ABSTRACT



 Full . April 2020

### Improvement of efficiency of dye-sensitized solar cells (DSSC) transparent by optimizing of anthocyanin dyes hybrid dyenamo yellow (DN-F01)

Nadiyah E.-H. Diyanahesa, A. Supriyanto and A. H. Ramelan

AIP Conference Proceedings 2217, 030182 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000868> [Open URL](#)

SHOW ABSTRACT


 Full . April 2020

### The influence of discharge current to temperature distribution of lithium ion cells

Sunarto Kaleg, Abdul Hapid, Miftahul Anwar, Feri Adriyanto, Hillga R. Radhita, Sukmaji I. Cahyono and Kuncoro Diharjo


AIP Conference Proceedings 2217, 030183 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000988> [Open URL](#)

SHOW ABSTRACT



<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

71/80


 Full . April 2020

### The effect of adding armrest and seat assist on chair for elderly prayer performance (sitting to standing)

Nani Cahya Ningrum, Nurhayatu Nufut Alimin, Prima Adhi Kusuma and Lu'lu' Purwaningrum

AIP Conference Proceedings 2217, 030184 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0003455> [Open URL](#)

SHOW ABSTRACT


 Full . April 2020

### Current-voltage monitoring of plasma arc discharge submerged in water for nanoparticles fabrication

Lia Anjarwati, Miftahul Anwar, Yan Mahardhika, Ramanda Fadhillah, Chico Hermanu Brillianto Apribowo, Teguh Endah Saraswati and Yuana Ayub

AIP Conference Proceedings 2217, 030185 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000978> [Open URL](#)

SHOW ABSTRACT


 Full . April 2020

### Mobile, fast response, and interactive measurement tool of psychological disorders under android based smartphone

W. A. Syafei, A. Ediaty, D. V. S. Kaloeti, J. Ariati, M. A. Virzawan, A. B. Prasetyo and S. Pramono

AIP Conference Proceedings 2217, 030186 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001089> [Open URL](#)


<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

72/80

SHOW ABSTRACT



Full . April 2020

**Analysis of chemical composition and microstructure in hexagonal bolt in aircraft Cessna Caravan 208B**

Indreswari Suroso and Muhammad Nur Rizqi

AIP Conference Proceedings 2217, 030187 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000514> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**A novel low PAPR preamble for very high throughput WLAN IEEE 802.11ac 80MHz system**

Wahyul A. Syafei, Achmad Hidayatno, Ajud A. Zahra and S. Pramono

AIP Conference Proceedings 2217, 030188 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000721> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Design variables reactive power compensator using magnetic energy recovery switch (MERS) for induction motor**

Chico Hermanu Brillianto Apribowo, Luthfy Mahkmudy and Oktavian Listiyanto

AIP Conference Proceedings 2217, 030189 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000829> [Open URL](#)[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

73/80

SHOW ABSTRACT



Full . April 2020

**Experimental method for improving efficiency on photovoltaic cell with using floating installation method**

Chico Hermanu Brillianto Apribowo, Abyan Habibie, Zainal Arifin and Feri Adriyanto

AIP Conference Proceedings 2217, 030190 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000827> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Design and economic analysis of floating PV-wind turbine plant for renewable energy supply in Indonesia**

Chico Hermanu Brillianto Apribowo, Muhammad Hamka Ibrahim and Muhammad Ramadhan Bagas Purnomo

AIP Conference Proceedings 2217, 030191 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000829> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Design and implementation of closed-loop controls for smart**[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

74/80

**boost converter**

Chico Hermanu Brillianto Apribowo, Muhammad Akmal and Miftahul Anwar

AIP Conference Proceedings 2217, 030192 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000830> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Optimization of 4G LTE (long term evolution) network coverage area in sub urban**

Subuh Pramono, Lia Alvionita, Mustofa Danang Ariyanto and Meiyanto Eko Sulistyio

AIP Conference Proceedings 2217, 030193 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000732> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Analysis and optimization of 4G long term evolution (LTE) network in urban area with carrier aggregation technique on 1800 MHz and 2100 MHz frequencies**

Subuh Pramono, Mustofa Danang Ariyanto, Lia Alvionita and Meiyanto Eko Sulistyio

AIP Conference Proceedings 2217, 030194 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000731> [Open URL](#)

SHOW ABSTRACT

[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

75/80

Full . April 2020

**Design of a hydroponic monitoring system with deep flow technique (DFT)**

Subuh Pramono, Arif Nuruddin and Muhammad Hamka Ibrahim

AIP Conference Proceedings 2217, 030195 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000733> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Movement flexibility of autistic children during individual therapy using ABA Lovaas table modification with foldable table top**

Dwi Candra Purnamasari, Sintha Sari Martaningtyas and Lulu Purwaningrum

AIP Conference Proceedings 2217, 030196 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0001953> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

**Maintenance strategy selection in a cement company: An integrated AHP-FAHP approach**

Masoud Rahiminezhad Galankashi, Fatemeh Khorramrouz, Mehran Esmailinezhad, Farimah Mokhtab Rafiei and Muhammad Hisjam

AIP Conference Proceedings 2217, 030197 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000519> [Open URL](#)[BROWSE VOLUMES](#)<https://aip-scitation-org.tudelft.idm.oclc.org/toc/apo/2217/1?size=all>

76/80

SHOW ABSTRACT



Full . April 2020

### Implementation of lean manufacturing in an electronic assembly company

Celine Koh Xian Lin, Syed Ahmad Helmi, Muhammad Hisjam and Ahad Ali

AIP Conference Proceedings 2217, 030198 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000971> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Ergonomic improvement in a manufacturing company

Tuan Ahmad Farhan Hakimi, Syed Ahmad Helmi, Muhammad Hisjam and Ahad Ali

AIP Conference Proceedings 2217, 030199 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000729> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Photodegradation of batik waste with graphitic carbon nitride using UV-BL

Bagas Cahyadi, Leony Inatsan Pertiwi, Queenta Perdania Putri and Anatta Wahyu Budiman

AIP Conference Proceedings 2217, 030200 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000665> [Open URL](#)

BROWSE VOLUMES

SHOW ABSTRACT



Full . April 2020

### An application of support vector machine to detect anomalies in time series data

Yoga S. Satriawan and Joko Slamet Saputro

AIP Conference Proceedings 2217, 030201 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000659> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Internet reactor laboratory application design on android client devices

Adi Abimanyu, Damasus Riko Prijono, Agus Arif and Muhtadan

AIP Conference Proceedings 2217, 030202 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000608> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Design and implementation of autonomous solar powered iot farm monitoring system using MQTT over cellular network

Muhammad Hamka Ibrahim, Chico Hermanu Brillianto Apribowo, Fahmi Ismail, Bima Damar Jati, Sony Adyatama, Attar Al Mufashal Rasyid and Bima Tri Prasetya



BROWSE VOLUMES

AIP Conference Proceedings 2217, 030203 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000800> [Open URL](#)

SHOW ABSTRACT



Full . April 2020

### Design and implementation biogas production by anaerobic digestion for sustainable energy development: A case study residential in Indonesia

Chico Hermanu Brillianto Apribowo, Muhammad Hamka Ibrahim and Adhitya Pitara Sanjaya

AIP Conference Proceedings 2217, 030204 (2020); <https://doi-org.tudelft.idm.oclc.org/10.1063/5.0000833> [Open URL](#)

SHOW ABSTRACT



#### Resources

AUTHOR

LIBRARIAN

ADVERTISER

#### General Information



BROWSE VOLUMES

ABOUT

CONTACT

HELP

PRIVACY POLICY

TERMS OF USE

FOLLOW AIP PUBLISHING:



Website © 2022 AIP Publishing LLC.

Article copyright remains as specified within the article.

Scitation



BROWSE VOLUMES

# Synthesis of biodiesel from kapok (*Ceiba pentandra L.*) seed oil through ultrasound-enhanced transesterification reaction

Cite as: AIP Conference Proceedings 2217, 030174 (2020); <https://doi.org/10.1063/5.0000609>  
Published Online: 14 April 2020

Ratna Dewi Kusumaningtyas, Muhammad Yasir Adhi Utomo, Pipit Risky Nurjanah, and Dwi Widjanarko



View Online



Export Citation

Lock-in Amplifiers  
up to 600 MHz





# Synthesis of Biodiesel from Kapok (*Ceiba pentandra L.*) Seed Oil through Ultrasound-Enhanced Transesterification Reaction

Ratna Dewi Kusumaningtyas<sup>1,a)</sup>, Muhammad Yasir Adhi Utomo<sup>1,b)</sup>,  
Pipit Risky Nurjanah<sup>1,c)</sup>, Dwi Widjanarko<sup>2,d)</sup>

<sup>1</sup>Chemical Engineering Department, Faculty of Engineering, Universitas Negeri Semarang, Sekaran Campus, Gunungpati, Semarang 50229 Indonesia

<sup>2</sup>Mechanical Engineering Department, Faculty of Engineering, Universitas Negeri Semarang, Sekaran Campus, Gunungpati, Semarang 50229 Indonesia

<sup>a)</sup>Corresponding author: ratnadewi.kusumaningtyas@mail.unnes.ac.id

<sup>b)</sup>yasir.utomo46@gmail.com

<sup>c)</sup>pipitriski23@gmail.com

<sup>d)</sup>dwi2\_oto@mail.unnes.ac.id

**Abstract.** Biodiesel is among the prospective renewable energy due to its superior properties as fuel such as environment friendly, non-toxic, biodegradable, resulting low pollutant emission, having high energy value and high cetane number, as well as can be readily applied in diesel machine. Biodiesel is also among the priority in the Indonesian national blue print on new and renewable energy development 2005-2025. Currently, Biodiesel is commonly produced through alkaline-catalyzed transesterification of vegetable oil which is conducted in conventional batch reactor. However, this process shows several drawbacks for instance the low reaction conversion. To overcome this challenge, process intensification of biodiesel production using ultrasound-enhanced transesterification process in batch reactor was employed in this work. The feedstock used for biodiesel synthesis in this work was kapok (*Ceiba pentandra L.*) seed oil. The oil contains gum and high free fatty acid (FFA) as much as 8.89%. Therefore, prior to the transesterification reaction, two steps of pretreatment processes i.e. degumming process for gum removal and esterification for reducing the FFA content until it reaches the value below 2%. The main transesterification reaction was then performed by using ultrasound enhanced batch reactor which was operated at the frequency of 20 Hz and temperature of 60°C in the presence of KOH catalyst. The reaction time was fixed 60 minutes. On the other hand, the molar ratio of methanol to oil was varied at 1:4, 1:5 and 1:6, and the catalyst concentration was studied at 0.5, 1, and 1.5% w cat/ w oil. It was found that highest yield was obtained at the reaction conducted using 0.5% catalyst and the molar ratio of 1.6 with the reaction conversion of 99.82%. This result was higher than the yield resulted by the conventional process performed at the similar condition which revealed the yield of 90%. Biodiesel produced using ultrasound-enhanced reactor fulfilled the SNI standard of properties in term of viscosity and density.

## INTRODUCTION

The application of biodiesel as alternative energy resources in diesel machine has gained an increasing interest recently. Biodiesel is a renewable energy derived from animal fats and vegetable oils which is biodegradable and environmentally beneficial [1]. Even biodiesel is considered prospective to be applied as a sustainable fuel for motorsport [2].

Biodiesel is commonly synthesized through the transesterification reaction of vegetable oils or animal fats in the presence of base catalyst. Various types of vegetable oils have been utilized as feedstocks of biodiesel at commercial scale, such as crude palm oil and soybean oil. However, the consumption of edible oils as fuel raw materials will cause the competition between the fuel and food demand. Therefore, the development of biodiesel production using

non-edible oils is preferred. Among the potential non-edible oil in Indonesia is kapok seed (*Ceiba pentandra L.*) oil. Kapok seed contains 25-40% oil and 71.95% unsaturated fatty acid [3]. The exceptionally high unsaturated fatty acid content causes the rancid smell of the vegetable oil and thus it is not suitable to be consumed as edible oil [4]. Therefore, utilization of kapok seed oil as biodiesel feedstock will provide added value to this Indonesian local vegetable oil.

Conventional process of transesterification of vegetable oil to produce biodiesel encounters a challenge since it is a reversible reaction which is usually slow and results in low biodiesel yield. Hence, process intensification is urgent to improve the process efficiency and to result in higher biodiesel yield. To overwhelm this limitation, a process intensification of biodiesel production using ultrasonic technology was developed in this work. Acoustic cavitation generated by the ultrasonic transducer can potentially accelerate the transesterification reactions [5].

An ultrasound enhanced batch reactor was utilized for producing biodiesel from kapok seed oil in this work. To date, the application of ultrasonic reactor for producing biodiesel from kapok seed oil has never been found in the literature. Thus, this work is expected to contribute on the providing added value to kapok seed oil as biodiesel feedstock through the application of ultrasonic reactor, which can generate high biodiesel yield in an efficient way. The effects of main parameters on the biodiesel yield and the biodiesel properties were investigated in this research.

## MATERIALS AND METHODS

### Materials

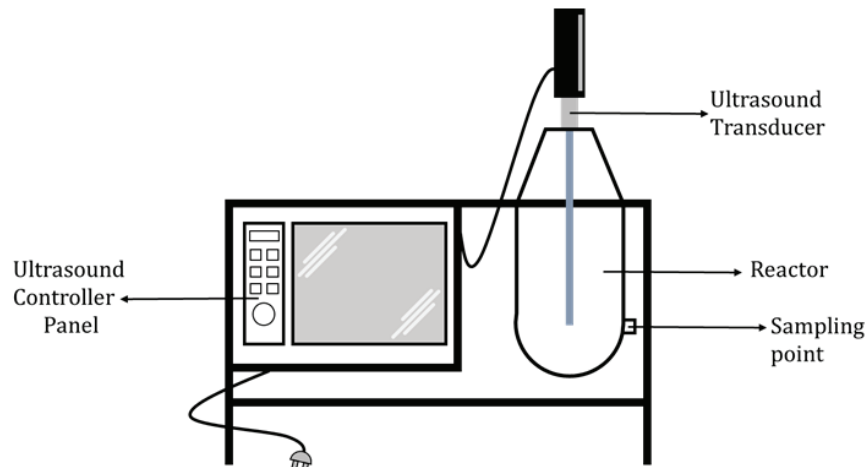
The feedstock used in this work was kapok seed oil which was obtained from Pati, Central Java, Indonesia and methanol (technical grade with the density of 0.792 g/mL). The other materials were phenolphthalein indicator, oxalic acid (p.a.), potassium hydroxide and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) which were from Merck (Darmstadt, Germany).

### Methods

Synthesis of biodiesel from kapok seed oil consisted of several steps, i.e.: feed-stocks characterization, degumming process, ultrasound-enhanced esterification reaction, ultrasound-enhanced transesterification reaction, purification and biodiesel characterization. Feedstock characterization included the analysis of acid number, saponification number, and free fatty acid (FFA) content of the kapok seed oil using titration standard method [6]. To reduce the gum content in kapok seed oil, degumming process was conducted. Initially the kapok seed oil was heated to 70°C and the phosphoric acid with the amount of 0.3% w/w oil was then added. The mixture was stirred using magnetic stirrer to ensure a good contact of the reactants. The degumming step formed two layers, in which gum was found on the bottom layer and could be separated using a separating funnel.

The degummed kapok seed oil then underwent esterification with methanol in the presence of sulfuric acid catalyst in an 8 L batch reactor equipped with ultrasonic apparatus (Biosonic 6000) to reduce the FFA content. The reactor scheme is presented in Figure 1. The esterification reaction was conducted at the temperature of 60°C with the molar ratio of oil to methanol of 1:12, the sulfuric acid catalyst concentration of 0.5% w/w oil, the stirring speed of 1000 rpm, and the ultrasound frequency of 28 kHz for 90 minutes.

When the FFA content has reached below 2%, the main alkaline-catalyzed transesterification was then performed using methanol in batch reactor equipped with ultrasonic apparatus (Biosonic 6000) at the temperature of 60°C, stirring speed of 1000 rpm and the ultrasound frequency of 28 kHz for 60 minutes. The volume of kapok seed oil used for each process was 2 L. The reaction was carried out in the presence of potassium methoxide catalyst. Potassium methoxide catalyst can simply be prepared by solving potassium hydroxide in methanol reactant [7]. In this work, the effects of the molar ratio of oil to methanol and potassium hydroxide (KOH) catalyst concentration were studied at 1:4, 1:5, 1:6 and 0.5%, 1%, 1.5%, respectively. Biodiesel product through transesterification reaction was then washed using aquadest to neutralize the remains of catalyst and remove the glycerol byproduct. Biodiesel product was also heated up to 100 °C to remove the leftover water and methanol. Having been purified, biodiesel was subsequently tested to determine its properties (density, viscosity and methyl ester content). The result was compared to that of the conventional batch process.



**FIGURE 1.** Ultrasound-Enhanced Batch Reactor for Biodiesel Production

## RESULT AND DISCUSSION

### Feedstock Characterization

Kapok seed oil is among the low-quality vegetable oil which has high content of FFA and gum. Hence, prior to the transesterification reaction, performing degumming and esterification processes are necessary as pretreatment of the feed-stock. Degumming process was carried out using phosphoric acid ( $H_3PO_4$ ) as degumming agent to reduce gum [8]. After the degumming, kapok seed oil had to undergo the acid-catalyzed esterification reaction to decrease its FFA content until it reached below 2%. It has been well known that the high FFA vegetable oil cannot go through the alkaline-catalyzed transesterification process since the excess FFA will react with the catalyst resulting in saponification side-reaction and lowering biodiesel yield [9, 10]. The esterification reaction was conducted using batch reactor equipped with the ultrasonic transducers. The pretreatment processes (degumming and esterification) could improve the properties of kapok seed oil as demonstrated in Table 1. It was depicted that after undergoing the pretreatment reactions, kapok seed oil has a lower density, viscosity, acid value, and FFA content. After the final pretreatment process of kapok seed oil, the FFA content decreased from 9.78% to 0.44%, which fulfilled the limitation of transesterification reaction. Fatty acid composition of kapok Seed Oil after pretreatment process is presented in Table 2.

**TABLE 1.** Comparison of Kapok Seed Oil Characteristics

Parameter	Crude Kapok Seed Oil	Kapok Seed Oil after Degumming	Kapok Seed Oil after Esterification
Density (g/mL)	0.942	0.941	0.87
Viscosity (cSt)	35.70	35.36	11.34
Acid Value (mg KOH/g)	19.60	17.82	0.88
FFA Content (%)	9.78	8.89	0.44

The molecular weight (MW) of kapok seed oil was determined by analyzing the fatty acid composition of kapok seed oil using Gas Chromatography-Mass Spectroscopy (GC-MS). The chromatogram of kapok seed oil is exhibited in Figure 2.

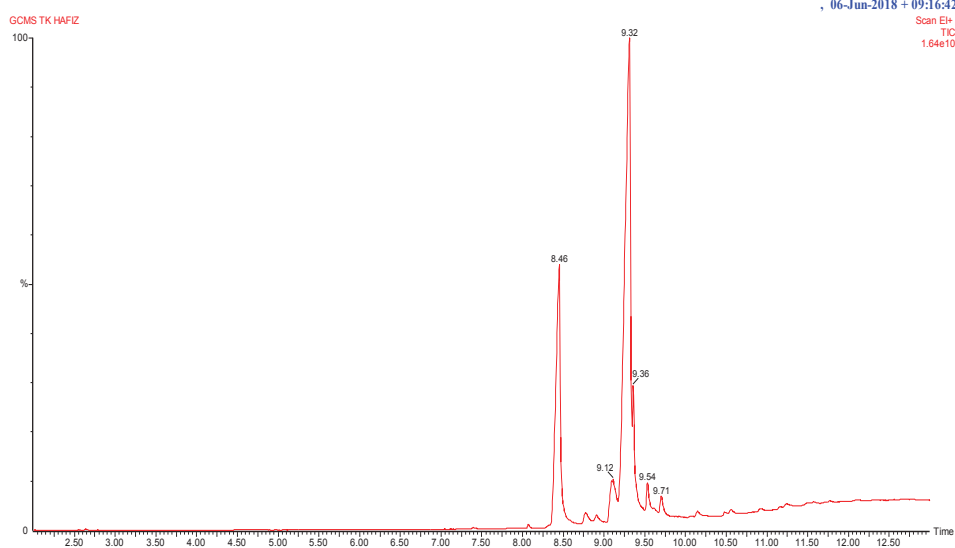


FIGURE 2. GC-MS Chromatogram of Kapok Seed Oil after Pretreatments (Degumming and Esterification)

**TABLE 2. Kapok Seed Oil after Pretreatments (Degumming and Esterification)**

Fatty Acid	Percentage (%)	Molecular Weight of Fatty Acid (g/mol)
Palmitic acid	29.728	256
Linoleic acid	3.678	280
Linoleic acid	57.842	280
Stearic acid	5.847	284
Linoleic acid	1.793	280
Octadecanoic acid	1.111	282

The molecular weight of vegetable oils can be estimated based on their fatty acid composition using the formula presented in Equation 1 [11].

$$MW_{VO} = (3 \times MW_{Avg\ of\ Fatty\ Acids} - 3 \times MW_H) + (3 \times MW_C + 5 \times MW_H) \quad (1)$$

$MW_{VO}$  is molecular weight of vegetable oil and  $MW_{Avg\ of\ Fatty\ Acids}$  is the average of the molecular weight of fatty acids which compose the vegetable oils.  $MW_{Avg\ of\ Fatty\ Acids}$  is obtained by multiplying the molecular weight of each fatty acid with its fraction.  $MW_H$  and  $MW_C$  are the molecular weights of hydrogen (1.00794 g/gmol) and carbon (12.0107 g/gmol), respectively. Based on the calculation using Eq. 1, it was found that the molecular weight of kapok seed oil was 857.4037. It is in line with the result reported by Kapilan et al. [12], stating that vegetable oils (triglyceride molecules) commonly have molecular weights between 800 and 900 g/gmol.

### Biodiesel Synthesis Using Ultrasound-Enhanced Batch Reactor

Having been pretreated, kapok seed oil feed-stock was then underwent transesterification reaction with methanol in the presence of potassium methoxide catalyst. The reaction was carried out in a batch reactor equipped with ultrasonic transducer (Biosonic 6000). During the reaction, small white bubbles appeared in the mixture which eventually spread throughout the mixture of kapok seed oil and methanol. This phenomenon is called cavitation. The high-power ultrasound produces ultrasonic cavitation, which is described as the formation, growth and collapse of bubbles regularly in the liquid exposed by ultrasound [13]. The collapse of the bubbles will cause a high local temperature and pressure, microstreaming, and shockwaves. This condition enhances the heat and mass transfer of the reactants. It will also increase the velocity gradient which generates shear stress. These facts can promote the mixing of reactants, the break of immiscible interfacial film, and enhance the mass and heat transfer in the system.

Ultrasound cavitation can create an intensive turbulence and liquid circulation at micro scale, and thus it enhances the mixing and reduce the mass transfer resistance especially in the heterogeneous system [14]. In reality, the reactants in the biodiesel production (vegetable oil and methanol) are not completely miscible. Therefore, an effective mass transfer will increase the overall reaction rate and results in higher product yield at the lower temperature and pressure.

Transesterification to produce biodiesel was conducted by reacting kapok seed oil with methanol in the presence of potassium methoxide catalyst at the temperature of 60°C and ultrasonic wave frequency of 28 kHz for 60 minutes. The effect of oil to methanol ratio was studied by varying it at 1:4, 1:5, and 1:6. On the other hand, the influence of catalyst concentration was investigated at the concentration of 0.5%, 1%, and 1.5% w catalyst/ w oil.

Transesterification will result in biodiesel as the main products, glycerol as by-product, as well as the remaining reactants and catalyst. To obtain a high purity biodiesel, purification step is necessary. Glycerol is a polar compound which can easily be separated from the biodiesel product, which is a non-polar compound, using decantation. The water is sometimes added to wash the leftover base catalyst. Meanwhile, the remaining methanol can be removed by heating biodiesel product at 100°C. The yield and properties of biodiesel were then tested.

### Effect of Molar Ratio of Methanol to Oil on the Biodiesel Yield

The effect of reactant molar ratio was investigated at the molar ratio of 1:4, 1:5, and 1:6. The reactions were carried at the fixed reaction temperature of 60°C, catalyst concentration of 0.5%, and ultrasonic frequency of 28 kHz for 60 minutes. The stoichiometric ratio of tryglycerides transesterification is 1:3. However, based on the GC-MS analysis, it was found that the best biodiesel yield was 99.82%, which was achieved at the molar ratio of oil to methanol of 1:6 (Figure 3). Molar ratio of the reactants provides significant influence to the biodiesel yield since transesterification reaction is a reversible reaction, in which the excess of the reactant will shift the equilibrium the the product formation [15].

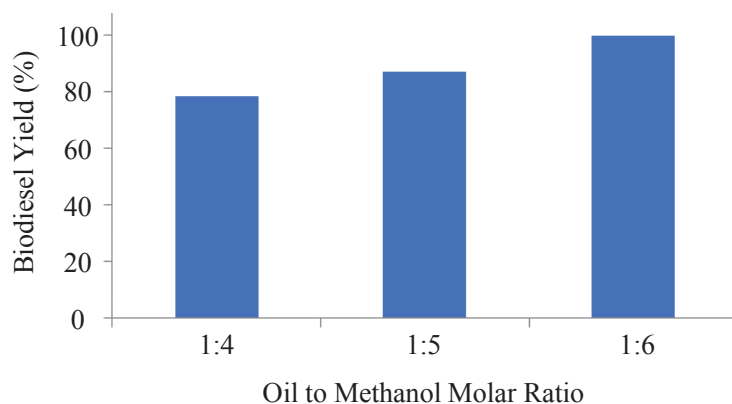
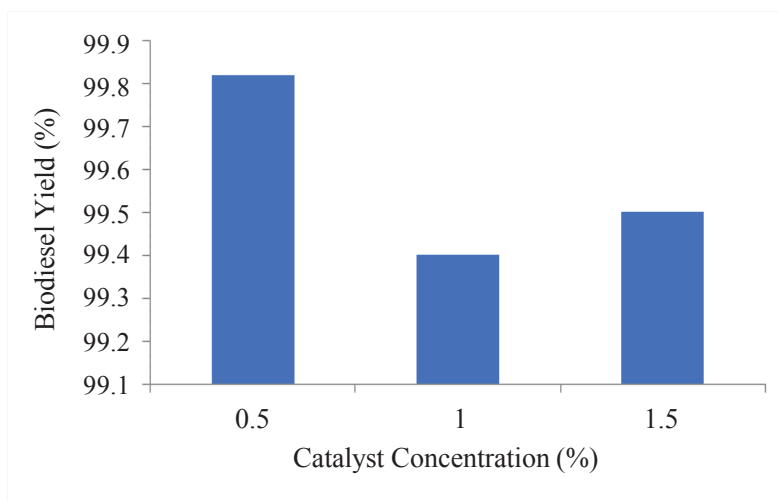


FIGURE 3. Effects of the Molar Ratio of Oil to Methanol to the Biodiesel Yield

### Effect of Catalyst Concentration on the Biodiesel Yield

The effect of catalyst concentration was evaluated at the concentration of 0.5%, 1%, and 1.5%. The reactions were carried at the certain reaction temperature of 60°C, oil to methanol molar ratio of 1:6, and ultrasonic frequency of 28 kHz for 60 minutes. Transesterification is a slow and reversible reaction. Hence, the addition of catalyst is important to increase the reaction rate and speed up the reaction [16]. A catalyst gives a different reaction route with lower activation energy. Hence, the addition of catalyst will make the higher number of succesfull collision to happen, allowing the reaction to occur. It will then improve the reaction rate. In this work, it was revealed that the best biodiesel yield was provided by the reaction employing catalyst concentration of 0.5% with the biodiesel yield of 99.82% (Figure 4).



**FIGURE 4.** Effects of the Molar Ratio of Oil to Methanol to the Biodiesel Yield

A considerable amount of catalyst is needed to increase the reaction rate, to reduce the reaction time, and to inhibit the reversible reaction. However, too excess catalyst addition is not effective since it will cause the difficulty in the separation of biodiesel product, methanol, and catalyst. It consequently rise the separation cost and reduce the biodiesel yield, as well [15]. The excessive base catalyst will also contribute to the formation of dimethyl ether due to the reaction of methanol and KOH. Therefore, among the experiments, the optimum biodiesel yield was 99.82%, obtained at the reaction condition of: oil to methanol molar ratio of 1:6, reaction temperature of 60°C, catalyst concentration of 0.5%, and ultrasonic frequency of 28 kHz for 60 minutes reaction time.

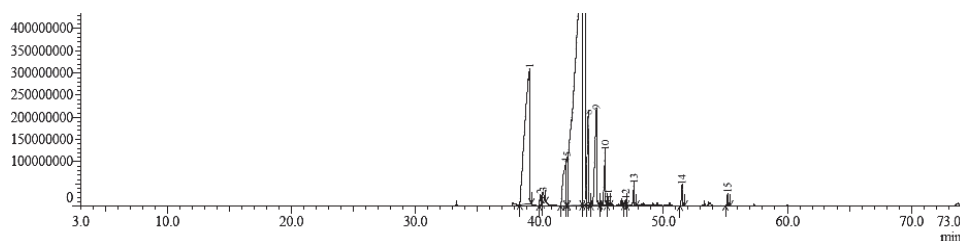
### Comparison of Biodiesel Yielded by Ultrasound Enhanced and Conventional Reactor

To examine the effectiveness of the biodiesel process intensification using ultrasonic technology, biodiesel produced using ultrasound assisted batch reactor was compared to that resulted by the conventional batch reactor at the identical reaction condition. The conventional process was accomplished at the oil to methanol molar ratio of 1:6, reaction temperature of 60°C, catalyst concentration of 0.5%, for 60 minutes reaction time. The summary is depicted in Table 3.

**TABLE 3.** Comparison between Biodiesel Yielded Using Conventional and Ultrasonic Reactors

Parameter	Conventional Reactor	Ultrasonic Reactor
Density (g/mL)	0.8667	0.8646
Viscosity (cSt)	4.95	4.38
Yield (%)	90.79	99.82

It was revealed that the ultrasound assisted batch reactor resulted in the higher yield of biodiesel (99.82) compared to that of the conventional process (90.79). This result was also superior compared to the transesterification of kapok seed oil conducted by Palupi and Siswani [17] which provided biodiesel yield of 89.26% for the reaction performed at 65°C for 60 minutes. Ultrasound cavitation contributes to the higher energy of the reactants molecules to overcome the activation energy, causing the higher reaction rate. In addition to giving a higher product yield, the application of ultrasonic technology for biodiesel production can also reduce the energy requirement since the cavitation of the ultrasonic wave will cause the thermal energy which increase the temperature from room temperature to the reaction temperature. Hence, the higher biodiesel yield can be achieved with the lower energy necessity. The chromatogram of biodiesel product resulted by the ultrasonic process at the optimum condition is presented in Figure 5 and the fatty acid composition is shown in Table 4.



**FIGURE 5.** GC-MS Chromatogram of Biodiesel Produced Using Ultrasonic Reactor at the Optimum Condition

**TABLE 4.** Fatty Acid Composition of Biodiesel Synthesized Using Ultrasonic Reactor

Peak#	R.Time	Area%	Name
1	39.218	18.15	Hexadecanoic acid, methyl ester (CAS)
2	40.089	0.39	9,12-Octadecadienoic acid (Z,Z)-, methyl ester (CAS)
3	40.318	0.45	9-Octadecenoic acid (Z)-, methyl ester (CAS)
4	42.11	3.45	9,12-Octadecadienoic acid (Z,Z)-, methyl ester (CAS)
5	42.234	1.76	Cyclopropaneoctanoic acid, methyl ester (CAS)
6	43.339	48.66	Cyclopropanebutyric acid, methyl ester (CAS)
7	43.599	15.3	13-Octadecenoic acid, methyl ester, (Z)- (CAS)
8	43.929	3.18	Octadecanoic acid, methyl ester (CAS)
9	44.598	5	9,12-Octadecadienoic acid (Z,Z)-, methyl ester (CAS)
10	45.305	1.96	Cyclopropaneoctanoic acid, 2-octyl-, methyl ester (CAS)
11	45.55	0.18	2,5-Furandione, 3-(dodecenyldihydro-
12	46.944	0.14	11-Eicosenoic acid, methyl ester (CAS)
13	47.622	0.59	Eicosanoic acid, methyl ester (CAS)
14	51.505	0.53	Docosanoic acid, methyl ester (CAS)
15	55.184	0.26	Tetracosanoic acid, methyl ester (CAS)

## Biodiesel Properties

To determine the quality of biodiesel produced using ultrasonic reactor, the properties of biodiesel was then assessed. Among the important properties are density, viscosity, and biodiesel purity. Density is among the parameter of the successfullnes of the transesterification reaction since it is correlated with the calor and power resulted by the diesel machine when biodiesel is applied in the machine. The lower the density of biodiesel will bring about the higher calor generated in the combustion[18]. The density of biodiesel produced at various oil to methanol molar ratio is demonstrated in Table 5. It was depicted that the higher amount of methanol used in the reaction, the density of the biodiesel was lower. It was due to the fact that some of the unreacted methanol was dissolved in the biodiesel product, lowering the density [3].

**TABLE 5.** Effects of Molar Ratio of Oil to Methanol on the Biodiesel Density.

No	Molar Ratio of Oil to Methanol	Density of Biodiesel (g/mL)
1	1:4	0.8687
2	1:5	0.8667
3	1:6	0.8646

The influence of catalyst concentration on the biodiesel density is shown in Table 6. It was discovered that the catalyst concentration did not significantly affect the density. The density of biodiesel for all the parameter variation has met the Indonesian standard (SNI 7182:2015) which obligate the biodiesel density of 850-890 kg/m<sup>3</sup> (0.850 – 0.890 g/mL).

**TABLE 6.** The Influence of Catalyst Concentration on the Biodiesel Density

No	Catalyst Concentration (%)	Density (g/mL)
1	0.5	0.8646
2	1	0.8646
3	1.5	0.8621

Another important parameter of the fuel combustion is viscosity. Vegetable oil cannot be readily applied as fuel in diesel machine because of its high viscosity. Vegetable oils are composed of complex structure and they usually have high molecular weight. The particularly high viscosity of vegetable oils will cause crucial problems in term of fuel pumping and poor atomization when they are directly applied in the diesel fuel [19]. Transesterification of vegetable oil could reduce the viscosity to meet the fuel property standard. The influence of molar ratio of oil to methanol and the catalyst concentration on the biodiesel from kapok seed oil viscosity were presented in Table 7 and 8, respectively.

**TABLE 7.** The Effects of Oil to Methanol Molar Ratio to the Biodiesel Viscosity

No	Molar Ratio of Oil to Methanol	Viscositas (cSt)
1	1:4	4.91
2	1:5	4.63
3	1:6	4.38

**TABLE 8.** The Effects of Catalyst Concentration on the Biodiesel Viscosity

No	Catalyst Concentration (%)	Viscosity (cSt)
1	0.5	4.38
2	1	4.66
3	1.5	4.62

Table 7 has shown that the higher amount of methanol used in the reaction, the lower viscosity of biodiesel will be resulted. It is due to the fact that the higher ratio of methanol to oil caused the higher quantity of unreacted methanol which was dissolved in the biodiesel product, reducing the viscosity. Table 8 indicates that the catalyst concentration of 0.5% shown the lowest value of viscosity. It is because of the fact that the 0.5% catalyst concentration resulted in the highest biodiesel yield. It means that the amount of triglyceride converted to methyl ester was higher than the other, resulting in the significant decrease of the viscosity. The standard value of biodiesel viscosity based on SNI 7182:2015 is 2.3 – 6.0 cSt. Hence, the viscosity of biodiesel synthesized in this work has satisfied the SNI.

## CONCLUSIONS

Based on the experimental result on the biodiesel synthesis from kapok seed oil using ultrasonic batch reactor, it can be concluded that biodiesel yield enhanced with the increase of reactants molar ratio. Furthermore, the addition of catalyst will improve the reaction rate. However, too excessive employment of catalyst will decrease the yield due to the separation problem and the formation of side-reactions. The optimum biodiesel yield was 99.82%, which was obtained at the reaction condition of: oil to methanol molar ratio of 1:6, reaction temperature of 60°C, catalyst concentration of 0.5%, and ultrasonic frequency of 28 kHz for 60 minutes reaction time. The properties of biodiesel product met the Indonesian standard (SNI) in term of density, viscosity and biodiesel purity. The yield obtained by using ultrasonic reactor (99.82%) was higher than the yield achieved by the conventional process at the identical reaction condition (90.79%).

## ACKNOWLEDGMENTS

The authors would like to express gratitude to the Universitas Negeri Semarang for the research funding and to Prof. Dr. Widayat (Universitas Diponegoro, Indonesia) for the scientific suggestion on this work.

## REFERENCES

1. R. D. Kusumaningtyas, R. Pristiyani, and H. Dewajani, *Int. J. Chemtech Res.* **9**, 627-634 (2016)
2. B. M. Wood, K. Kirwan, S. Maggs, J. Meredith, and S. R. Coles, *J. Clean Prod.* **93**, 167-173 (2015).
3. E. Astuti, *J. Rek. Pros.* **2**, 5-9, (2008).
4. N. P. Frederic, *J. Tek. Kim. Ind.* **2**, 262-266 (2013).
5. K. Shinde and S. Kaliaguine, *Chem. Eng.* **18**, 3-10 (2019).
6. H. Soetjipto, C.A. Riyanto, and T. Victoria, *IOP Conf. Ser. Mater. Sci. Eng.* **349**, 1-5 (2018).



7. F. A. Bastos, S. Khan, E. H. Simões, C. A. Teixeira, and M. Tubino, *J. Braz. Chem. Soc.* **24**, 1380-1384 (2013).
8. R. Hernando and I. W. Susila. *J. Tek. Mes.* **2**, 73-79 (2013).
9. R. D. Kusumaningtyas, P. Handayani, R. Rochmadi, S. Purwono, and A. Budiman, *Int. J. Renew. Energy Dev.* **3**, 75-81, (2014).
10. I. M. Atadashi, M. K. Aroua, A. R. A. Aziz, and N. M. N. Sulaiman, *J. Ind. Eng. Chem.* **9**, 1-40 (2010)
11. R. D. Kusumaningtyas, Ph.D. thesis, Universitas Gadjah Mada, Indonesia, 2014.
12. N. Kapilan, T. P. A. Babu, and R. P. Reddy, *Int. J. ChemTech Res.* **1**, 278-282 (2009).
13. W. W. S. Ho, H. K. Ng., S. Gan, and W. L. Chan, *Energy Sci. Eng.* **3**, 257-269 (2014).
14. P. B. Subhedar and P. R. Gogate, *Ultrason. Sonochem.* **29**, 67-75 (2016).
15. J. Vakros, *Catalyst* **8**, 1-14 (2018).
16. W. Widayat, T. Darmawan, R. A. Rosyid, and H. Hadiyanto, *IOP Conf. Ser. J. Phys. Conf. Ser.* **877**, 1-8 (2017)
17. A. T. Palupi, and E. D. Siswani, E.D., *J. Kim. Das.* **5**, 1-9 (2016)
18. I. Azis, *J. Val.* **1**, 19-23 (2011)
19. S. Madiwalea, and V. Bhojwani, *Proc. Technol.* **25**, 963 – 973 (2016).

# Terindeks Scopus SJR 0.177 (2020)

## 1. SCOPUS

Source Details : Scopus.com

Coverage Years : from 1973 to 1978, from 1983 to 1984, 1993, from 2000 to 2001, from 2003 to Present



### Source details

Feedback >

#### AIP Conference Proceedings

Scopus coverage years: from 1973 to 1978, from 1983 to 1984, 1993, from 2000 to 2001, from 2003 to Present

ISSN: 0094-243X E-ISSN: 1551-7616

Subject area: [Physics and Astronomy: General Physics and Astronomy](#)

Source type: Conference Proceeding

[View all documents >](#)

[Get document short](#)

[Save to source list](#)

CiteScore 2020  
**0.7**

SJR 2020  
**0.177**

SNIP 2020  
**0.314**

[CiteScore](#) [CiteScore rank & trend](#) [Scopus content coverage](#)

#### Improved CiteScore methodology

CiteScore 2020 counts the citations received in 2017-2020 to articles, reviews, conference papers, book chapters and data papers published in 2017-2020, and divides this by the number of publications published in 2017-2020. [Learn more >](#)

CiteScore 2020

$$0.7 = \frac{33,397 \text{ Citations } 2017 - 2020}{46,758 \text{ Documents } 2017 - 2020}$$

Calculated on 05 May, 2021

CiteScoreTracker 2021

$$0.7 = \frac{25,521 \text{ Citations to date}}{38,648 \text{ Documents to date}}$$

Last updated on 04 August, 2021 • Updated monthly

#### CiteScore rank 2020

Category	Rank	Percentile
Physics and Astronomy	#192/233	17th
General Physics and Astronomy		

# Scimago Journal and Country Rank


**SJR** Scimago Journal & Country Rank

Home Journal Rankings Country Rankings Viz Tools Help About Us

Ads by Google

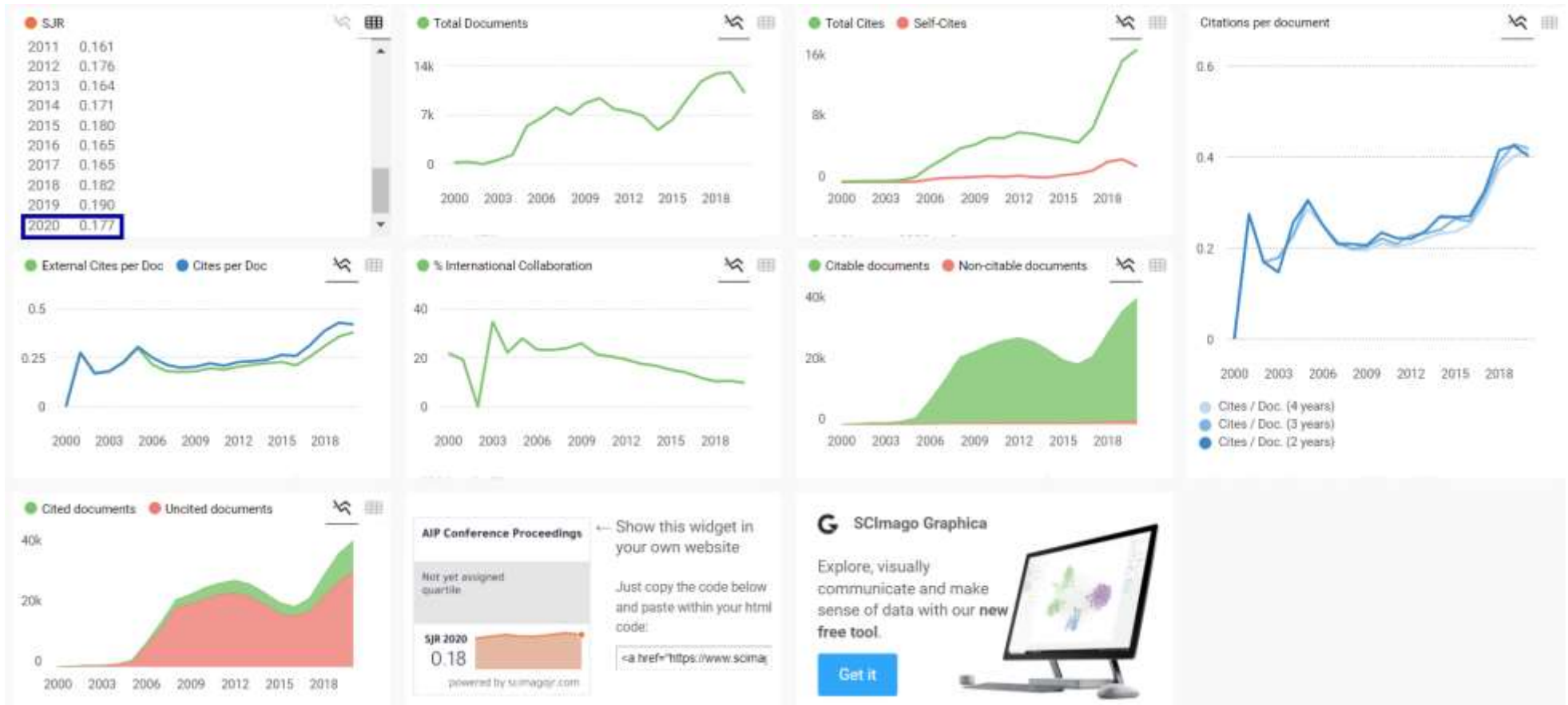
Stop seeing this ad Why this ad?

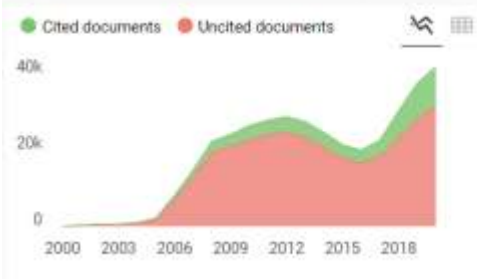
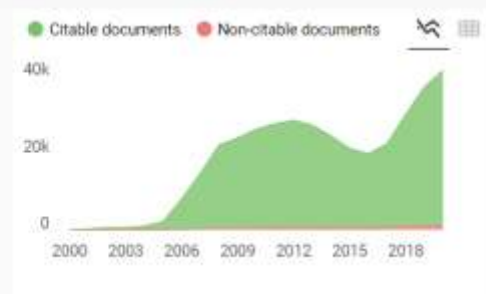
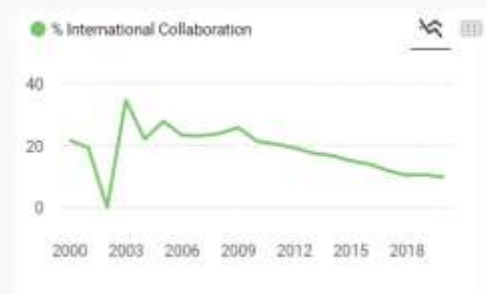
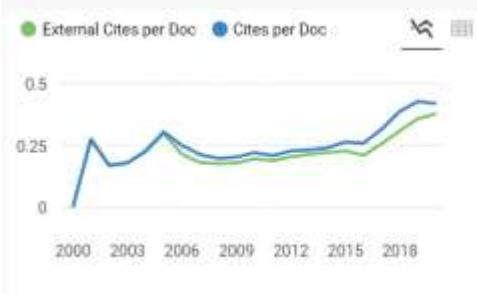
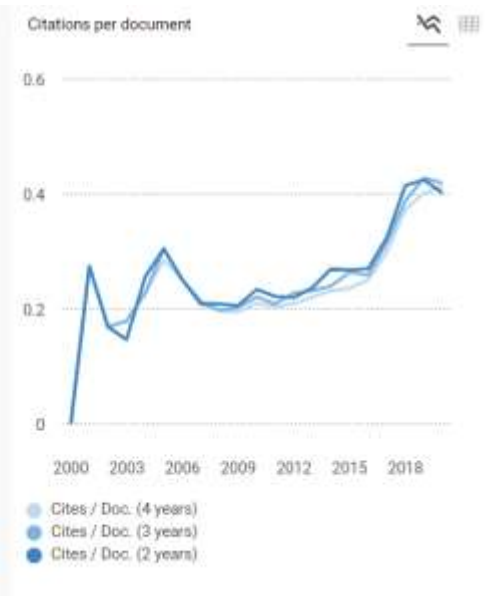
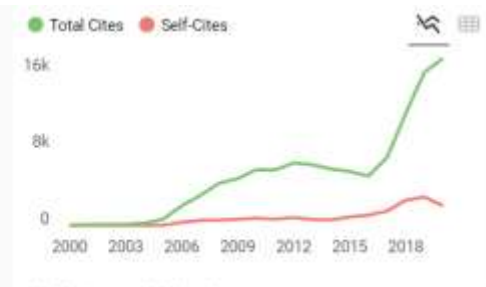
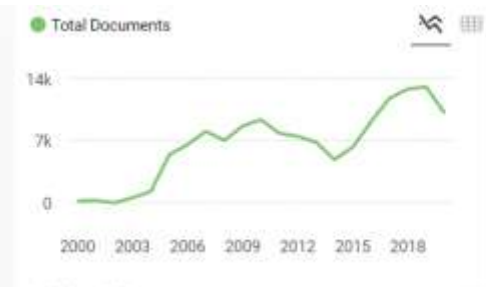
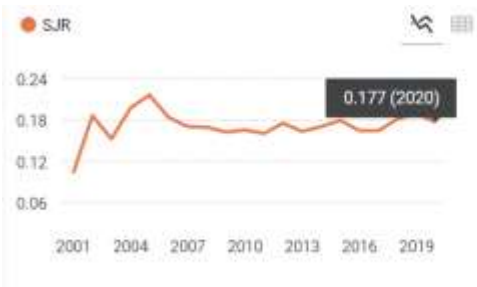
## AIP Conference Proceedings

<b>COUNTRY</b> United States 	<b>SUBJECT AREA AND CATEGORY</b> Physics and Astronomy └ Physics and Astronomy (miscellaneous)	<b>PUBLISHER</b> American Institute of Physics	<b>H-INDEX</b> <b>75</b>
<b>PUBLICATION TYPE</b> Conferences and Proceedings	<b>ISSN</b> 0094243X, 15517616	<b>COVERAGE</b> 1974-1978, 1983-1984, 1993, 2000-2001, 2003-2020	<b>INFORMATION</b> <a href="#">Homepage</a> <a href="#">How to publish i</a>

## SJR Information

**SJR = 0.177 (2020)**





**AIP Conference Proceedings** ← Show this widget in your own website

Not yet assigned quartile

SJR 2020  
**0.18**

powered by scimagojr.com

Just copy the code below and paste within your html code:

```
<a href="https://www.scima
```

**SCImago Graphica**

Explore, visually communicate and make sense of data with our new free tool.

[Get it](#)

# CERTIFICATE OF APPRECIATION

This Certificate is awarded to

*Ratna Dewi Kusumaningtyas*  
Presenter

ID Paper : CE-264

The 5th International Conference on Industrial, Mechanical, Electrical,  
and Chemical Engineering (ICIMECE 2019)

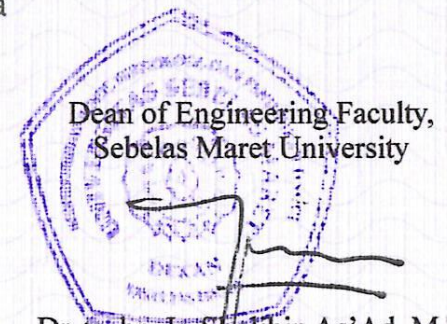
The Alana Hotel & Convention Center Solo, Indonesia  
September 17 - 18, 2019

icimece  
Conference Chair



Dr. Wahyudi Sutopo, S.T., M.Si.  
NIP. 197706252003121001

Organized by



Dr. techn. Ir. Sholihin As'Ad, M.T.  
NIP. 196710011997021001