

P-ISSN 2301-8097 VOL. 12 NO. 2, OCTOBER 2023 E-ISSN 2540-9352

Characterization of Voltage Generation Obtained from Water Droplets on a Taro Leaf (Colocasia esculenta L) Surface

Ena Marlina, Akhmad Faruq Alhikami, Metty Trisna Negara, Sekar Rahima Sahwahita, Mochammad Basjir

Page 47-54

The Condition of Electricity Oversupply in Indonesia

Appin Purisky Redaputri

Page 55-64

Fracturing Fluid Optimization in Limestone Formation Using Guar Gum Crosslinked Fluid
Bon Swadesi, Ahmad Azhar Ilyas, Maria Theresia Kristiati, Dewi Asmorowati, Ahmad Sobri, Sukma Bayu, Malvin
Larasyad Azwar

Page 65-75

Bentonite-Based Drilling Boyolali Mud Fabrication with Additive Carboxymethyl Cellulose, Na2CO3 and KOH

> Adi Ilcham, Muhammad Reza Adittyanto, Khairul Asrori, Wakhid Umar Page 76-84

Comparative Study of Economic Evaluation of PSC Cost Recovery and PSC Gross Split Scheme for Expiry Block, Case Study Field A in Sumatera

Prayang Sunny Yulia, Adji Nadzif Sidqi, Syamsul Irham, Mustamina Maulani, Puri Wijayanti Page 85-95











pISSN: 2301-8097 eISSN: 2540-9352

# Journal of Earth Energy Engineering



Accredited by Directorate General of Strengthening for Research and Development, Ministry of Research, Technology, and Higher Education of Republic Indonesia No: 10/E/KPT/2019

VOL. 12 NO. 2, OCTOBER 2023

### **PUBLISHER**

Universitas Islam Riau (UIR) Press

#### **EDITOR IN CHIEF**

Farizal Hakiki (Taiwan)

### **ASSOCIATE EDITOR**

Muslim Abdurrahman (Indonesia) Ryanda Enggar Anugrah Ardhi (South Korea) Adi Novriansyah (Indonesia) Nguyen Xuan Huy (Vietnam)

#### **EDITORIAL BOARDS**

Asep Kurnia Permadi (Indonesia) Agus Astra Pramana (Indonesia)

Taufan Marhaendrajana (Indonesia) Muhammad Taufiq Fathaddin (Indonesia)

Sonny Irawan (Indonesia) Yuichi Sugai (Japan)

Zulkifli Abdul Majid (Malaysia) Goh Thian Lai (Malaysia)

Suranto (Indonesia) Falan Srisuriyachai (Thailand) Medhat (Med) Kamal (USA) Syahrir Ridha (Malaysia)

Madi Abdullah Naser (Libya)

Agus Arsad (Malaysia)

Wisup Bae (South Korea)

Randy Agra Pratama (Canada)

Hussein Hoteit (Kingdom of Saudi Arabia)

Riezqa Andika (Indonesia)

Hyundon Shin (South Korea)

#### **TECHNICAL EDITOR**

Fiki Hidayat Tomi Erfando

## **SCOPE OF JOURNAL**

This journal aims to promote excellence in the fields of earth science and energy. The journal welcomes contribution in such areas of current analysis particularly in fossil energy exploration, extraction, and processing. The priority areas include enhanced oil recovery, reservoir engineering, formation

pISSN: 2301-8097 eISSN: 2540-9352

## Journal of Earth Energy Engineering



Accredited by Directorate General of Strengthening for Research and Development, Ministry of Research, Technology, and Higher Education of Republic Indonesia No: 10/E/KPT/2019

evaluation, production technique, drilling and drilling fluids, petroleum geology, and petroleum economics. This journal also publishes original works, from fundamental principles to practical applications in the field of energy utilization, energy conservation, and sustainable energy.

This journal accepts articles on any earth and energy-related subjects and any research methodology that meet the standards established for publication in the journal. The primary criterion for publication in Journal of Earth Energy Engineering is the significance of the contribution an article makes to the literature in earth and energy research area, i.e., the significance of the contribution and on the rigor of analysis and presentation of the paper. The acceptance decision is made based upon an independent review process that provides critically constructive and prompt evaluations of submitted manuscripts.

## ABOUT THE JOURNAL

Journal of Earth Energy Engineering (pISSN 2301-8097, eISSN 2540-9352) is the leading primary research journal in the fields of earth science and energy with a particular focus on fossil energy exploration, extraction, and processing. Journal of Earth Energy Engineering is published by Universitas Islam Riau (UIR) Press, three times a year, every March, July, and November. From its launch in 2012 to the present day, Journal of Earth Energy Engineering publishes papers on every aspect of fossil energy-based, from the start of the extraction process in drilling and completion technology, reservoir studies, and new method of recovery to the various production technique (see Focus and scope). Our authors and readers reflect a broad interdisciplinary group of scientists who study fossil energy exploration, extraction, and processing.

All research articles published in Journal of Earth Energy Engineering are subject to rigorous double-blind peer review, and editorial decisions are made by a team of expert researchers in the field, supported by an International Editorial Board. Journal of Earth Energy Engineering is indexed in Directory of Open Access Journal (DOAJ), Google Scholar, Science and Technology Index (SINTA S3), Indonesian Publication Index (IPI), and BASE, and has been ACCREDITED by Ministry of Research, Technology, and Higher Education of the Republic of Indonesia, No.10/E/KPT/2019, April 4, 2019 as 3rd Rank, SINTA S3.

### EDITORIAL OFFICE OF JOURNAL OF EARTH ENERGY ENGINEERING

"A" Building Faculty of Engineering, Universitas Islam Riau. Jalan Kaharuddin Nasution No. 113 Pekanbaru, Riau 28284, Indonesia Email: jeee@journal.uir.ac.id

Website: https://journal.uir.ac.id/index.php/jeee

# Journal of Earth Energy Engineering



Accredited by Directorate General of Strengthening for Research and Development, Ministry of Research, Technology, and Higher Education of Republic Indonesia No: 10/E/KPT/2019

## LIST OF CONTENT

Characterization of Voltage Generation Obtained from Water Droplets on a Tar Leaf (Colocasia esculenta L) Surface	47
Ena Marlina, Akhmad Faruq Alhikami, Metty Trisna Negara, Sekar Rahima Sahwahita,	
Mochammad Basjir	
The Condition of Electricity Oversupply in Indonesia	55
Appin Purisky Redaputri	
Fracturing Fluid Optimization in Limestone Formation Using Guar Gum	65
Crosslinked Fluid	
Boni Swadesi, Ahmad Azhar Ilyas, Maria Theresia Kristiati, Dewi Asmorowati, Ahmad	
Sobri, Sukma Bayu, Malvin Larasyad Azwar	
Bentonite-Based Drilling Boyolali Mud Fabrication with Additive Carboxymethyl	76
Cellulose, Na2CO3 and KOH	
Adi Ilcham, Muhammad Reza Adittyanto, Khairul Asrori, Wakhid Umar	
Comparative Study of Economic Evaluation of PSC Cost Recovery and PSC Gross	85
Split Scheme for Expiry Block, Case Study Field A in Sumatera	
Prayang Sunny Yulia, Adji Nadzif Sidqi, Syamsul Irham, Mustamina Maulani, Puri	
Wijayanti	