

Table of contents

Volume 623

2021

◀ Previous issue Next issue ▶

**International Conference on Environment, Sustainability Issues, and Community Development 21
October 2020, Semarang, Indonesia**

Accepted papers received: 02 December 2020

Published online: 08 January 2021

Open all abstracts

Preface

OPEN ACCESS 011001

Preface

+ Open abstract  View article  PDF

OPEN ACCESS 011002

Peer review declaration

+ Open abstract  View article  PDF

Papers

OPEN ACCESS 012001

Analysis of land requirements of Temesi final disposal facility, Gianyar Regency with 3R waste management scenario

G A W Sudiarta and I W B Suyasa

+ Open abstract  View article  PDF

OPEN ACCESS 012002

The effect of chlorpyrifos exposure on carp fish at twin lakes of West Sumatra Indonesia

T Ihsan, T Edwin, D Paramita and N Frimeli

+ Open abstract  View article  PDF

OPEN ACCESS 012003

Conversion of municipal solid waste to refuse-derived fuel using biodrying

B Zaman, N Hardyanti, B P Samadikun, M S Restifani and P Purwono

+ Open abstract  View article  PDF

OPEN ACCESS 012004

The inverted U-shape relationship between education and environmental degradation: case of seven ASEAN Countries

A Setyadharna, P E Prasetyo and S Oktavilia

+ Open abstract  View article  PDF

OPEN ACCESS 012005
This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.

Prediction of land cover changes in Penajam Paser Utara Regency using cellular automata and markov model

R J Permatasari, A Damayanti, T L Indra and M Dimiyati

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012006

Simulation sediment transport in development location of a diesel power plant using Computational Fluid Dynamic (CFD) methods

E Yohana, T S Utomo, V S Sumardi, D A Laksono, K Rozi and K H Choi

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012007

Investigation of air pollution dispersion from kiln stacks based on seasonal using multi-model integration (WRF/CALPUFF)

A Pratama

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012008

Analysis of multimedia filter effectiveness to improve the quality of rainwater runoff in fulfilling urban raw water supply

A Oktaviani and N Suwartha

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012009

Novel helical or coiled flocculator for turbidity reduction in drinking water treatment: a performance study

G H Cahyana, P Suwandhi and T Mulyani

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012010

The effect of roof surface area on the quality and quantity of rainwater runoff in the rainwater harvesting system

K Faza and N Suwartha

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012011

Analysis of performance and testing of 1215 WP rooftop solar power plants with on-grid system household scale with the case study of Sambiroto Asri Housing Semarang City

J Windarta, Denis, J S Silaen and D A Satrio

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012012

Student responses in environmental education using information technology at the Purwodadi Botanical Garden

R V H Ginardi, R A Laksono, M Husni, K Ghozali and R R Hariadi

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012013

Personal characteristic, occupational, work environment and psychosocial stressor factors of musculoskeletal disorders (MSDs) complaints on bus driver: literature review

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012014

Metal industry waste desiccation behavior with the addition of bentonite as a landfill liner

B S Ramadan, L K Alfanti, E Sutrisno, M A Budihardjo, I W Wardhana and S Yumaroh

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012015

Utilization of moringa oleifera leaves for making hand sanitizers to prevent the spread of COVID-19 virus

F Arifan, R W Broto, E F Sapatra and A Pujiastuti

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012016

Electrocoagulation for drinking water treatment: a review

E T Al-Hanif and A Y Bagastyo

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012017

Biogas Production Comparison of Liquid Anaerobic Digestion (L-AD) Methods on Different Enzyme Addition

Syafrudin, W D Nugraha, A Kahirunnisa, B S Ramadan, M F Miftahadi and S Yumaroh

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012018

The effect of amylase and cellulase enzymes on biogas production from rice husk waste using solid-state anaerobic digestion (SS-AD) method

W D Nugraha, H Wafiroh, Syafrudin, Junaidi, M A Budihardjo and R P Safitri

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012019

Impacts of the Covid-19 pandemic on traditional oil mining at Wonocolo Village Kedewan Sub-District Bojonegoro Regency East Java

L A Rahmawati, N Afianti and T T Putranto

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012020

Metals (Fe, Zn, Mn) retention capacity of modified bentonite clay liner

M A Budihardjo, D I Gita, E Sutrisno, B S Ramadan, I W Wardhana and S Yumaroh

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012021

Technology and economic analysis of urban waste potential (case study of Jatibarang landfill)

M Saleh, E W Sinuraya, D Denis, P Gregorius and E Hardian

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012022

Bibliometric analysis of the study on exposure evaluation to aerosol nano or ultrafine particles in the breathing zone

R A Handika, M Hata and M Furuuchi

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012023

Life cycle assessment (LCA) of portland composite cement (PCC) 50 kg papercraft bag at PT. Semen Padang

T Panggabean, R Aziz and Y Dewilda

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012024

Construction of co-culture of microalgae with microorganisms for enhancing biomass production and wastewater treatment: a review

M Padri, N Boontian, C Piasai and M S Tamzil

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012025

Cultivation process of microalgae using wastewater for biodiesel production and wastewater treatment: a review

M Padri, N Boontian, C Piasai and T Phorndon

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012026

Spatial quality of shallow groundwater in DAS Cijurey Regency of Majalengka, West Java

T Mutiara, E Kusratmoko and K Marko

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012027

Region of springs utilization in Cicurug Village, Majalengka, Sub-District, Majalengka District, West Java

Y Amelia, E Kusratmoko and R Saraswati

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012028

The study on the linkage between pollution load and water quality index of the Cidurian river - a case study of Serang District segments

L Pemulasari, B Kurniawan and Y Maryani

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012029

Building a development strategy towards community-based tourism (CBT) in Thekelan Hamlet

A Rezagama, M A Budihardjo, B Zaman, E Yohana, B S Ramadan and R P Safitri

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012030

Do gender and age affect an individual's sense of coherence? an environmental psychology perspective of flood survivals in Indonesia

H Maulana, G Gumelar and G Irianda

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012031

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



Identification of flood vulnerable zones in Batu Ampar Village, Balikpapan City using Geographical Information System Methods

M M Harfadli and M Ulimaz

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012032

Impacts of zeolite activation temperature and grain size toward bioretention system efficiency in removing Pb and Zn pollutant in stormwater runoff

E Martama and N Suwartha

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012033

Correlation with dust exposure rice milling worker's lung function capacity in Sub-District Kerjo

I Suryadi, H H A Matin, S Suhardono, S Rinawati, S Rachmawati and L Kusumaningrum

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012034

Settlement infrastructure management for universal access in Ngantang District, Malang Regency, Indonesia

N Elya, I R D Ari, S Hariyani and B S Aji

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012035

Prediction of coal dust dispersion to total suspended particulate (TSP) concentration in ambient air quality, case study: *PLTU* Tanjung Jati B

S Kurniawan, H S Huboyo and B P Samadikun

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012036

Methane gas production from a mixture of cow manure, chicken manure, cabbage waste, and liquid tofu waste using the anaerobic digestion method

F Arifan, Abdullah and S Sumardiyono

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012037

Spatial distribution of rice productivity utilizes sentinel-2A and NDVI algorithm in Nagrak Sub-district, Sukabumi Regency

Y Rahmanida, I P A Shidiq, Rokhmatuloh and Supriatna

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012038

Remote sensing-based spatial distribution of rice crop production and varieties in Cidahu Sub-District, Sukabumi Regency

S Lestari, I P A Shidiq, Rokhmatuloh and Supriatna

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012039

Measurement of water availability: understanding the relationship between the physics of water and the level of community welfare at Bumiaji District, Batu City, Indonesia

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012040

Conversion of coal fly ash into advanced crystalline materials

M Kurniawati, N J Azhari, G T M Kadja, R R Mukti and S Notodarmojo

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012041

The existence of a shortcut as an urban space system to support physic and mental health

A R Harani, P Atmodiwirjo, Y A Yatmo and R Riskiyanto

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012042

Carbon emission report: a review based on environmental performance, company age and corporate governance

B Solikhah, I F S Wahyuningrum, A Yulianto, E Sarwono and A K Widiatami

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012043

Evaluation of community-based water supply system in Krembung, Sidoarjo

B D Marsono and P M Nirwisaya

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012044

Combining Analytical Hierarchy Process (AHP) and Geographical Information System (GIS) for mapping habitat threat of mentilin (*Cephalopachus bancanus*)

N Isnaini, H Marhaento and S A Subrata

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012045

Spatial distribution and characteristics of destructive activities in Tahura Gunung Menumbing, West Bangka

M R Pratama and H Marhaento

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012046

Evaluation of community-based drinking water supply in Manyar Sub-District, Gresik Regency

B D Marsono and K D Pitaloka

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012047

Filter performance evaluation of Karangpilang III drinking water treatment plant *PDAM* Surya Sembada Surabaya

B D Marsono and A Camellia

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012048

Persistence of carbaryl pesticide in environment using system dynamics model

A Sunaryani and K Y R Rosmahma

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012049

GIS-based multi-criteria analysis for nuclear power plant site selection in West Kalimantan

K Salsabila, R Saraswati, I P A Shidiq and H Susiati

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012050

Social conditions in wastewater processing to manage river water quality (study in Cirarab River, Tangerang District, Indonesia)

K Indriyani, H S Hasibuan and M Gozan

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012051

Environmental dimension of pandemic COVID-19: case studies of Indonesia

S P Hadi, M H Ibrahim, B Prabawani and R S Hamdani

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012052

Analysis of river water quality and pollution control strategies in the upper Citarum River

A F Ramadhiani and Suharyanto

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012053

Study of commercial water losses in *PDAM* Maja Tirta, Mojokerto City

B D Marsono and I R Jannah

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012054

Electrodeposition for rapid recovery of cobalt (II) in industrial wastewater

H Widiyanto, W E Kosimaningrum and Rahmayetty

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012055

Designing interpretation tracks for nature tourism in Tahura Gunung Menumbing, West Bangka

E E Krisma and H Marhaento

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012056

Potential and control method of bioaerosol emission at composting process in *TPST* Diponegoro University

H S Huboyo, M Hadiwidodo, B S Ramadan, R Dennyarto and F I Muhammad

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012057

Effect of smart environmental elements on occupancy rates of subsidy housing in North Balikpapan District

M Ulimaz and E D Syafitri

[+ Open abstract](#) [View article](#) [PDF](#)
This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



OPEN ACCESS

012058

Characteristics of the settlement brand index for improving environmental safety in Balikpapan

M Ulimaz, N A Jordan and D N Tufail

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012059

Escalating the small-sized community green spaces' role as the carbon storage in the coastal town

I N Aini, H S Hasibuan and Waryono

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012060

Significant energy use analysis and energy conservation on Diponegoro University

J Windarta, Denis, A F H Mukhammad, Y Hartadi, M K Aldianto and C Radityatama

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012061

Potential health risks of heavy metals pollution in the Downstream of Citarum River

S Shara, S S Moersidik and T E B Soesilo

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012062

Community perceptions analysis of waste management in the Upper Citarum Watershed measured from attitudes, awareness, responsibilities, and norms using the SEM method

A S U Mudjiardjo, S S Moersidik and L Darmajanti

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012063

The application and effectiveness of fly ash granule using tapioca flour and sugarcane molasses as granule agents for soil ameliorant and fertilizer

H Agusta, F N Nisya, R N Iman and S Agustina

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012064

Zinc contamination in surface water of the Umeda River, Japan

P Andarani, H Alimuddin, R Suzuki, K Yokota and T Inoue

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012065

Company financial performance, company characteristics, and environmental disclosure: evidence from Singapore

I F S Wahyuningrum, S Oktavilia, N Putri, B Solikhah, H Djajadikerta and E Tjahjaningsih

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012066

Underground river resources potential in Gunungkidul regency for drinking water

A Sarminingsih, A Rezagama, R S Wahyudi and S N N Munawafa'

[+ Open abstract](#) [View article](#) [PDF](#)

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



-
- OPEN ACCESS** 012067
Coastal settlement resilience to water-related disasters in Semarang City
S P Dewi, N S Ristianti and R Kurniati
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012068
Agroforestry potential in CDK IX's assisted areas of the Central Java Environment and Forestry Agency
B Prabawani, H Warsono, R S Dewi and N R Hapsari
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012069
Utilization of tofu wastewater and sugar industry by-products as a medium for the production of antifungal metabolites by *Paecylomyces Marquand* StrainTP4
D G S Andayani and D G T Andini
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012070
Synthesis and characterization of Fe₃O₄-Activated Carbon and its application to adsorb methylene blue
D S Dirgayanti, S Koesnarpadi and N Hindryawati
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012071
Analysis of government expenditure and environmental quality: an empirical study using provincial data levels in Indonesia
S Oktavilia, A Setyadharma, I F S Wahyuningrum and N Damayanti
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012072
Inventory of old buildings and land subsidence in Semarang Old Colonial City
R S Rukayah, A B Sardjono, M Abdullah and A M A Aziz
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012073
Measuring land subsidence of buildings in Semarang Chinatown
R S Rukayah, A B Sardjono, M Abdullah and R Yulichandra
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012074
OTTV recalculation of Suara Merdeka Tower: a recommendation design towards energy efficient building
P U Pramesti, M Ramandhika, M I Hasan and H Werdiningsih
[+ Open abstract](#) [View article](#) [PDF](#)
-
- OPEN ACCESS** 012075
The influence of building envelope design in energy efficiency: OTTV calculation of multi storey building
P U Pramesti, M Ramandhika, M I Hasan and H Werdiningsih
[+ Open abstract](#) [View article](#) [PDF](#)



OPEN ACCESS

012076

Challenge of integrated low-cost emission monitoring system into a digital information system

A M Simbolon, J A Fatkhurrahman, A Mariani, I R J Sari, Syafrudin and Sudarno

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012077

The economic potential of paper waste recycling activities on the informal sector in Grobogan District a case study: Purwodadi Sub-district

B P Samadikun, D A B Sinttia, A Rezagama, S Sumiyati, H S Huboyo, B S Ramadan, M Hadiwidodo and F Nabila

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012078

A spatial study of rubber plant health using sentinel 2-A imagery in Cibungur Plantation, Sukabumi, West Java

T R Putri and S Supriatna

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012079

Cost optimization of tannery wastewater treatment by electrocoagulation process with iron electrode under various DC voltage and electricity consumption

Muchlis, A A Sari, Widyarani, E Sutarlan, E B Nursanto and N Fasa

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012080

Effect of current strength on electrocoagulation using Al-Fe electrodes in COD and TSS removal of domestic wastewater

W Oktiawan, I B Priyambada, S Aji and F S Budi

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012081

Land cover change modeling to identify critical land in the Ciletuh Geopark tourism area, Palabuhanratu, Sukabumi Regency.

R A Putri and S Supriatna

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012082

Integration of upflow anaerobic sludge blanket and constructed wetlands for pharmaceutical wastewater treatment

H Vistanty and F Crisnaningtyas

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012083

Estuary zone based on sea level salinity in Ciletuh Bay, West Java

D M Tunjung, S Supriatna, I P Ash Shidiq and M D M Manessa

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012084

Spatial modeling for prediction agricultural land-use change in Jampang Kulon, Sukabumi Regency

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012085

A continuous mode reactor design for industrial textile wastewater treatment through catalytic ozonation

R Rame, R Yuliasni, N I Pratiwi, N I Handayani and N I Setianingsih

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012086

A catalytic ozonation reactor design for reuse large scale industrial wastewater: laundry

R Rame, A Purwanto, S Djayanti and Y Andriani

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012087

Mapping chlorophyll-a and Total Suspended Solid (TSS) distribution in the waters of Ciletuh Bay

I Annisa and S Supriatna

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012088

Analysis of risks and challenges to demographic bonuses in sustainable development programs through population policy transformation (case study in Central Java Province)

D U Setyoningrum, Y Warella and T Yuningsih

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012089

Performance stability of reactors in disseminating COD and ammonium in domestic wastewater contaminated with pharmaceutical residues

Sudarno, N Hardyanti and M F Sipayung

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012090

Carrying capacity of air quality analysis as part of air pollution control strategy in Kendal Industrial Estate, Kendal Regency, Central Java

N Hardyanti, H S Huboyo and S Prayoga

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012091

Low-income households sustainability based on ecological perspective at Villa Karang Sari Kebumen, Indonesia

W N Aini, S Sunarti and L Esariti

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012092

Relationship of quality management system standards to industrial property rights in Indonesia using Spearman Correlation Analysis Method

A Bakhtiar, H Suliantoro, R H Ningsi and K Pitipaldi

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012093

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.



Estimation of the potential of understorey and litter carbon on the shrub bush vegetation in Aceh Besar District

U Umar, S Sufardi, S Syafruddin, T Teti and M Munar

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012094

Open space function in plaza area in Central Java Great Mosque

A M Hamdani, A Suprapti and R S Rukayah

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012095

Numerical simulation of detailed airflow distribution in newly developed photosynthesis chamber

M Nuralisa, T Tokairin, K Takayama and T Inoue

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012096

Increasing environmental comfort using insect trap windows connected to DC high voltage source

A Syakur, H Afrisal, A Jatmika and Y H Saragi

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012097

Brief overview on corrosion behaviour of buried structure at Kariangau industrial complex

R A Tanjung, PP A W Yusariarta and M Wulandari

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012098

Comparison of leachate and mixed waste generated electricity in Compost Solid Phase Microbial Fuel Cells (CSMFCs)

G Samudro, Syafrudin, I W Wardhana and T Imai

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012099

Recent advances in the stabilization of expansive soils using waste materials: A review

J B Niyomukiza, S P R Wardani and B H Setiadji

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012100

Design of waste cooking oil collection center in Semarang City using maximal covering location problem: a finding from Semarang, Indonesia

S Hartini, D Puspitasari and A A Utami

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012101

Characteristics of *Kemiri Sunan (reutalis trisperma (blanco) airy shaw)* biodiesel processed by a one stage transesterification process

S Supriyadi, P Purwanto, H Hermawan, D D Anggoro, C Carsoni and A Mukhtar

[+ Open abstract](#) [View article](#) [PDF](#)

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our [Privacy and Cookies policy](#).

OPEN ACCESS



Prediction of spatial pollution load using the PLOAD Model

012102

A Rezagama, A Sarminingsih, S Sariffudin, H Hariyanto, C R A Daniswara and D G Febbyany

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012103

Indoor air pollution in Air-Conditioned bus and non-Air-Conditioned bus

I E Husna, Y E R Unzilattirrizqi D, Sarifuddin and A A Wijnurhayati

[+ Open abstract](#) [View article](#) [PDF](#)

JOURNAL LINKS

[Journal home](#)

[Journal scope](#)

[Information for organizers](#)

[Information for authors](#)

[Contact us](#)

[Reprint services from Curran Associates](#)



[< Back to results](#) | 1 of 1[Download](#) [Print](#) [Save to PDF](#) [Add to List](#) [Create bibliography](#)

IOP Conference Series: Earth and Environmental Science • [Open Access](#) • Volume 623, Issue 1 • 8 January 2021 • Article number 012080 • 2nd International Conference on Environment, Sustainability Issues, and Community Development, INCRID 2020 • Semarang, Virtual • 21 October 2020 • Code 166804

Document typeConference Paper • [Bronze Open Access](#)**Source type**

Conference Proceedings

ISSN

17551307

DOI

10.1088/1755-1315/623/1/012080

[View more](#)

Effect of current strength on electrocoagulation using Al-Fe electrodes in COD and TSS removal of domestic wastewater

[Oktiawan W.](#) ; [Priyambada I.B.](#); [Aji S.](#); [Budi F.S.](#)[Save all to author list](#)

^a Department of Environmental Engineering, Faculty of Engineering, Universitas Diponegoro, Semarang, 50275, Indonesia

3rd 96th percentile
Citations in Scopus4.48
FWCI 34
Views count [View all metrics](#) [Full text options](#) [Export](#) **Abstract**[Indexed keywords](#)[Sustainable Development Goals 2023](#)[SciVal Topics](#)[Metrics](#)[Funding details](#)**Abstract**

Domestic wastewater is wastewater from household activities such as kitchens, baths, laundry, and water closets. Domestic wastewater contains parameters that can cause environmental pollution, so it needs to be treated. One of the domestic waste treatment technologies is electrocoagulation.

Electrocoagulation is a continuous coagulation process using direct electric current through electrochemical events. The purpose of this study was to determine the effect of current on electrocoagulation using Al-Fe electrodes in reducing contaminant levels of domestic wastewater (COD and TSS). The electrode configuration used in this study was Al-Fe, with a variation of the current strength used was 1 A, 2 A, 3 A. The electrocoagulation process was carried out

Cited by 3 documents

Efficient removal of tannins from anaerobically-treated palm oil mill effluent using protein-tannin complexation in conjunction with electrocoagulation

Khongkliang, P. , Khemkhao, M. , Mahathanabodee, S. (2023) *Chemosphere*

Domestic wastewater in Indonesia: generation, characteristics and treatment

Widyarani , Wulan, D.R. , Hamidah, U. (2022) *Environmental Science and Pollution Research*

The Efficiency of Reducing COD and Turbidity of Tofu Wastewater using A Combination of Electrocoagulation and Ozone

Oktiawan, W. , Samadikun, B.P. , Ashari, A.S. (2022) *IOP Conference Series: Earth and Environmental Science*

[View all 3 citing documents](#)

Inform me when this document is cited in Scopus:

[Set citation alert >](#)**Related documents**

Find more related documents in Scopus based on:

[Authors](#) > [Keywords](#) >

Recent advances in the stabilization of expansive soils using waste materials: A review

J B Niyomukiza^{1,2*}, S P R Wardani¹, B H Setiadji¹

¹ Department of Civil Engineering, Faculty of Engineering, Universitas Diponegoro, Semarang, Central Java, Indonesia

² Department of Civil Engineering, Faculty of Engineering, Ndejje University, Kampala, Uganda

niyojayb1992@student.undip.ac.id

Abstract. The increasing population necessitates infrastructural development, and these civil engineering infrastructures are constructed on soils. Highways, buildings, bridges, railways, and dams need a strong foundation; however, some soils are not suitable for making a strong foundation. An example is expansive or reactive soils. Expansive soils are subjected to volumetric changes, thus the biggest challenge that geotechnical engineers encounter in the field. In an attempt to make these poor soils more appropriate for use in engineering projects, different stabilization techniques are used. However, well-established stabilizers like cement, lime, and bitumen are associated with environmental challenges. This has attracted the attention of the researchers to look for environmentally friendly and sustainable stabilizers. The current study provides a review of the recent trends in improving the geotechnical properties of expansive soils using waste materials, focusing on their efficacy, the optimum percentage, and research gaps. Wastes considered in this study include waste tires, sawdust, and sawdust ash, and fly ash. The review utilized research articles extracted from different databases, such as Science Direct, Google Scholar, Scopus, Web of Science, and Google. This work could give the geotechnical engineers and independent researchers insight into the recent soil stabilization trends that could lead to sustainable development.

1. Introduction

Various soils are used during the construction of civil engineering structures. However, some soils are suitable, while others are unsuitable for civil engineering purposes [1]. One example of unsuitable soils that cause severe damage to engineering structures' foundations includes expansive clay [2]. These soils experience massive volume changes due to their high affinity to water. Expansive soils have a record of swelling during the wet season and shrinking during the dry season, and the cause of these behaviors could be the presence of a mineral with an enlarging matrix [1], [3], [4]. In most parts of the world, soils with desirable properties are transported from quarries that are at times far from the construction project site. This raises the construction costs of the project in terms of excavation and transportation costs, and for that matter, there is a need for shifting to locally available stabilization materials.

The history of expansive subgrade soil stabilization can be traced way back to the 1950s, and since then, researchers continued looking for better and sustainable ways of soil stabilization [5]. Dubose [6] experimented using a compaction method to control heaving in clay soils. In 1958, Jones conducted laboratory studies on improving the geotechnical properties of reactive clay soils using hydrated lime



Numerical simulation of detailed airflow distribution in newly developed photosynthesis chamber

M Nurmalisa^{1*}, T Tokairin¹, K Takayama², T Inoue¹

¹ Architecture and Civil Engineering Department, Toyohashi University of Technology, 1-1 Hibarigaoka, Tempaku-cho, Toyohashi, Aichi 441-8580, Japan

² Electronics - Inspired Interdisciplinary Research Institute (EIIRIS), Toyohashi University of Technology, 1-1 Hibarigaoka, Tempaku-cho, Toyohashi, Aichi 441 – 8580, Japan

moliya.nurmalisa.rc@tut.jp

Abstract. Predictive numerical simulation of airflow uniformity in canopy plants could provide a suitable environment for plant growth. A numerical investigation of airflow in a photosynthesis chamber was conducted using the Computational Fluid Dynamics (CFD) model. This research-validated the numerical model with measurements performed in a bare bottom open chamber. The chamber has bottom openings with three exhaust fans on the roof. After model validation, airflow patterns and their uniformity were evaluated in different fan arrangements and doubled air volume rates. The obtained results showed that a more uniform airflow distribution was observed with increasing the fan's air volume rate (0.0187, 0.0172, and 0.0177 m³s⁻¹), particularly fan in the middle position and diagonally position inside the plant with coefficients of variation of 14.36%, 9.3% and 10%, respectively. Moreover, increasing the fan's air volume rate and moving the fan positions to the middle and diagonally can significantly help produce uniform air velocity distribution inside the plant.

1. Introduction

The response of net photosynthesis to air velocity has become vital in increasing and maintaining airflow uniformity in the plant canopy. Many researchers have conducted air velocity studies in the plant canopy to investigate its influence on plants. For example, Shibuya et al. (2006) experimentally clarified that upward and downward airflows enhanced the CO₂ exchange rate of the canopy and dry masses of the seedlings from 1.4–1.5 and 1.2–1.3 times, respectively, compared with a conventional horizontal airflow [1]. Okayama et al. (2008) reported (that fans set on both sides of the space and opposed fans not set coaxially) could provide more uniform airflow distribution than the conventional airflow pattern (fans set on one side of the room) [2]. It also enhanced the net photosynthetic rate more than that in the traditional airflow pattern with the same energy input. Furukawa (1975) showed that changing the air temperature did not significantly affect airflow rate efficiency on photosynthesis but increasing the light intensity enhanced it significantly [3].

Primary data on adequate air circulation to enhance plant growth in a closed plant culture system (chamber) were obtained by investigating the effects of the current airspeed ranging from 0.01–1.0 ms⁻¹. Researchers also found that the plant canopy's net photosynthetic rate doubled with increased air



Cultivation process of microalgae using wastewater for biodiesel production and wastewater treatment: a review

M Padri¹, N Boontian^{1*}, C Piasai¹, and T Phorndon¹

¹ School of Environmental Engineering, Suranaree University of Technology, 111, Maha Witthayalai Rd, Suranari, Mueang Nakhon Ratchasima District, Nakhon Ratchasima 30000, Thailand

n.boontian@sut.ac.th

Abstract. Combining microalgae cultivation with nutrient removal is a promising technique as it enables renewable energy generation with the additional potential removal of wastewater contaminants in a single process. Performance and total yield of this process are still below the standard for industrialization. Thus, optimization is needed to reach the feasibility and actualize the concept. Cultivation conditions and reactor design play essential roles in the application and feasibility of this process. Both aspects have been developed through the years to enable the industrial application of this concept. Cultivation conditions are usually categorized into trophic conditions in which each situation has its specific function and target of removal. These conditions, however, are also applied in various reactor systems. Closed photobioreactor and open pond are two central systems for the reactor. Two of the most applied reactor models in wastewater are reviewed here to create a broad picture of the algae cultivation process by emphasizing biomass production and considering different aspects.

1. Introduction

Microalgae culture is considered as the future generation of biofuel source with many additional advantages. Among the advantages, nutrient removal and carbon sequestration are on top of the priority list; hence, this technology's benefit in overcoming environmental issues is very favorable [1-3]. Lately, more significant scale applications with numerous technologies vary the possibility of applying many wastewater sources and characteristics.

The microalgae cultivation process with a specific bioreactor design shows essential roles in the application and feasibility of coupling biomass generation with a wastewater treatment system [4]. Among factors that determine the coupling feasibility, light penetration and agitation process are commonly mentioned in this system. Both of operational parameters are mostly affected by the design of the reactor in which the generation of algae biomass is conducted [5]. The agitation and light penetration are essential to ensure high biomass productivity and wastewater recovery [4,6]. Similarly, the *trophic* condition must count as the first consideration since algae can cope with many carbon and energy, including the one in the system of wastewater treatments [7].

Nonetheless, many wastewater applications as sources of nutrients for microalgal growth failed to reach high biomass yield. Some of the applications focused on the strains and co-cultivation microorganisms while the operational conditions were less considered. Failure to identify and construct



Simulation sediment transport in development location of a diesel power plant using Computational Fluid Dynamic (CFD) methods

E Yohana¹, T S Utomo¹, V S Sumardi¹, D A Laksono^{1*}, K Rozi¹, K H Choi²

¹Departemet of Mechanical Engineering, Faculty of Engineering, Universitas Diponegoro, Jl. Prof. Sudharto, SH., Tembalang-Semarang 50275, Central Java, Indonesia

²College of Engineering, Pukyong National University, 365 Sinseon-ro, Nam-gu, Busan 608-739, Korea

dimazaji199@gmail.com

Abstract. Research about Sediment Transport is important for the sustainability of coastal buildings. The infrastructure construction of the Halmahera Diesel Power Plant (PLTD) in the coastal area requires water supply as a cooling system. The supply of cooling water can be reduced because of erosion or sedimentation. This study uses CFD modelling of ANSYS FLUENT applications with variations in mass flow rates. The Eulerian-Lagrangian approach is used to predict the rate of erosion and accretion that occur around the place of Halmahera. Methods of Particle Size Distribution (PSD) numerical simulation is uniform. The simulation process results consist of particle mass, erosion, and accretion rate in the seabed. Variations in mass flow rates of 0.05 kg/s, 0.1 kg/s, 0.15 kg/s, 0.2 kg/s, 0.25 kg/s obtained the erosion rate respectively 5.425×10^{-7} mm/year, 1.085×10^{-6} mm/year, 1.626×10^{-6} mm/year, 2.170×10^{-6} mm/year, 2.712×10^{-6} mm/year. The result of the accretion rate obtained from the variation in mass flow rates is 301.43 mm/year, 602.87 mm/year, 904.30 mm/year, 1205.50 mm/year, 1507.77 mm/year. From this research. The result of simulation to be important to predict the rate of sediment transport for consideration in the development location of construction Halmahera PLTD.

1. Introduction

A natural process that often happens in the coastal area will have resulted in sediment transport. These conditions will result in accretion and erosion. Sedimentation or erosion across the coastline will have impacted the form of coastal buildings (ex: pier, jetty, wave breaker, groin, artificial sea wall, etc.). Halmahera East Ternate island is a specified location for Diesel Power Plant Construction (PLTD). The diesel power plant is usually used for fulfilling the electric in low capacity, new isolated place, village, and industrial needs. The diesel power plant needs a huge water consumption for its cooling system. The lack of water needs for cooling system because of sediment transport, will prevent diesel power plant to work properly [1]. The research uses the data from the temporal change of shoreline that needs expensive cost and longtime research so that simulation needed to be efficient processes [2].

Research about sediment transport conducted by Javaherci and Aliseda (2017) used Discrete Random Walk (DRW) method on simulation to obtain sediment transport rate which marine hydrokinetic turbine

