

2nd International Conference on Oleo and Petrochemical Engineering (ICOOPChE 2017)

IOP Conference Series: Materials Science and Engineering
Volume 345

Pekanbaru, Indonesia
29 - 30 November 2017

Editor:

Evelyn

ISBN: 978-1-5108-6161-9
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 345

2nd International Conference on Oleo and Petrochemical Engineering (ICOOPChE 2017)

29–30 November 2017, Pekanbaru-Riau, Indonesia

Accepted papers received: 23 March 2018

Published online: 12 April 2018

Preface

[2nd International Conference on Oleo and Petrochemical Engineering \(ICOOPChE 2017\)](#)

[Organizers](#)

[Peer review statement](#)

Papers

[Reactivity improvement of Ca\(OH\)₂ sorbent using diatomaceous earth \(DE\) from Aceh Province](#)

M Mariana, M Mahidin, F Mulana, T Agam and F Hafdiansyah.....1

[Synthesis of biodiesel using local natural zeolite as heterogeneous anion exchange catalyst](#)

R. Hartono, A Wijanarko and H Hermansyah.....8

[Enhanced photocatalytic hydrogen production from water-ethanol solution by Ruthenium doped La-NaTaO₃](#)

H Husin, P N Alam, M Zaki, Sofyana, Jakfar, Husaini and F Hasfita.....13

[Comparison of kinetic model for biogas production from corn cob](#)

L M Shitophyta and Maryudi.....20

[Synthesis and catalytic activity of Birnessite-Type Manganese Oxide synthesized by solvent-free method](#)

S S Siregar and A Awaluddin.....25

[Experimental study of Pb \(II\) solution sorption behavior onto Coffee Husk Bioactivated Carbon](#)

Z Fona and U Habibah.....34

[Effect of Lanthanum-Natural Zeolite, La/NZA catalyst on biodiesel production from crude palm oil](#)

A Setianingsih, Wisrayetti, Khairat and S Bahri.....40

[Removal of Methylene Blue from aqueous solution using spent bleaching earth](#)

E Saputra, R Saputra, M W Nugraha, R S Irianty and P S Utama.....50

[Effective utilizations of palm oil mill fly ash for synthetic amorphous silica and carbon zeolite composite synthesis](#)

P S Utama, E Saputra and Khairat.....54

[Crystal-growth kinetics of magnetite \(Fe₃O₄\) nanoparticles with Ostwald Ripening Model approach](#)

S P Utami, A Fadli, E O Sari and A S Addabsi.....61

[Application of Response Surface Methodology \(RSM\) for wastewater of hospital by using electrocoagulation](#)

Murdani, Jakfar, D Ekawati, R Nadira and Darmadi.....68

[Techno-economic assessment of Levulinic Acid Plant from *Sorghum Bicolor* in Indonesia](#)

M Gozan, B Ryan and Y Krisnandi.....75

[Resin purification from Dragons Blood by using sub critical solvent extraction method](#)

Saifuddin and Nahar.....89

[Diversifying bio-petro fuel sources for future energy sustainability and its challenges](#)

M R Othman, Z Helwani and I Idris.....96

[Thermal behaviour and microanalysis of coal subbituminus](#)

Heriyanti, W Prendika, R Ashyar and Sutrisno.....103

[Torrefaction of oil palm frond: The effect of process condition to calorific value and proximate analysis](#)

W Susanty, Z Helwani and Zulfansyah.....113

[Fabricaton of brick without burning process](#)

Zultiniar, A Fadli, S R Yenti, Drastinawati and M R A Thariq.....120

[Parametric study on the compressive strength geopolymers paving block](#)

Aman, A Awaluddin, A Ahmad and M Olivia.....125

[Synthesis of geopolymers from rice husk ash for biodiesel production of *Calophyllum inophyllum* seed oil](#)

E Saputra, M W Nugraha, Z Helwani, M Olivia and S Wang.....132

[Effect of process variables on the calorific value and compressive strength of the briquettes made from high moisture *Empty Fruit Bunches* \(EFB\)](#)

Z Helwani, W Fatra, L Arifin, M R Othman and Syapsan.....136

[Evaluation of the effect of roasting process on the energy transition and the crystalline structures of *Arabica*, *Robusta*, and *Liberica* coffee from Jambi Indonesia](#)

B M Perdana, R Manihuruk, R Ashyar, Heriyanti and Sutrisno.....145

[Extraction of citral oil from lemongrass \(*Cymbopogon Citratus*\) by steam-water distillation technique](#)

P N Alam, H Husin, T M Asnawi and Adisalamun.....156

[Influence of tannin content in *Terminalia catappa* leaves extracts resulted from maceration extraction on decreasing corrosion rate for mild steel in 1M H₂SO₄](#)

M Pramudita, Sukirno and M Nasikin.....162

[The application of vacuum redistillation of patchouli oil to improve patchouli alcohol compound](#)

T M Asnawi, P N Alam, H Husin and M Zaki.....168

[Properties enhancement of cassava starch based bioplastics with addition of graphene oxide](#)

A Amri, L Ekawati, S Herman, S R Yenti, Zultiniar, Y Aziz, S P Utami and Bahrudin.....178

[Conductive composites of tapioca based bioplastic and electrochemical-mechanical liquid exfoliation \(emle\) graphene](#)

A Amri, H Rahmana, S P Utami, R S Iriyanti, Z T Jiang and M M Rahman.....191

[Lauryl Amine as heavy metal collector of boiler ash from pulp and paper mill waste](#)

M P Sembiring, J Kaban, N Bangun and E Saputra.....201

[Biopolymers to improve physical properties and leaching characteristics of mortar and concrete: A review](#)

M Olivia, H Jingga, N Toni and G Wibisono.....211

[Computational fluid dynamic on the temperature simulation of air preheat effect combustion in propane turbulent flame](#)

Elwina, Yunardi and Yazid Bindar.....219

[Corrosion control of carbon steel using inhibitor of banana peel extract in acid diluted solutions](#)

Komalasari, S P Utami, M I Fermi, Y Aziz and R S Irianti.....228

[*Geloina coaxans* shell as calcium source on synthesis hydroxyapatite](#)

P H Yanti and A Kamiah.....236

[The effect of woven roving fiberglass total layers on resin infusion time in vacuum infusion](#)

A H Saputra and R H Ibrahim.....241

[Characterization nano crystalline cellulose from sugarcane baggase for reinforcement in polymer composites: Effect of formic acid concentrations](#)

N A S Aprilia, S Mulyati, P N Alam, Karmila and A C Ambarita.....246

[Effectiveness of inorganic membrane mixture of natural zeolite and portland white cement in purifying of peat water based on turbidity parameter](#)

Elfiana, A Fuadi and S Diana.....252

[Degradation of blending vulcanized natural rubber and nitril rubber \(NR/NBR\) by dimethyl ether through variation of elastomer ratio](#)

A H Saputra, S Juneva, T I Sari and A Cifriadi.....262

[Coating hydroxiapatite on stainless steel 316 L by using sago starch as binder with dip-coating method](#)

A Fadli, F Akbar, A Prabowo and P H Hidayah.....270

[Green technology as a strategy in managing the black spots in Siak Highway, Indonesia](#)

A Sandhyavitri, J Wira and A Martin.....278

[Performance of the electrical generator cell by the ferrous alloys of printed circuit board scrap and Iron Metal 1020](#)

Y Sahan, S Sudarsono, E Silviana, Chairul and Wisrayetti.....290

[Production of palm frond based wood plastic composite by using twin screw extruder](#)

M Russita and Bahrudin.....297

[Synthesis of hydroxyapatite nanoparticles from egg shells by sol-gel method](#)

Y Azis, M Adrian, C D Alfarisi, Khairat and R M Sri.....302

[Characteristic of betel nuts activated carbon and its application to Jumputan wastewater treatment](#)

L Cundari, K F Sari and L Anggraini.....308

[Immobilization of *Candida rugosa* lipase by adsorption-crosslinking onto corn husk](#)

A Nuraliyah, A Wijanarko and H Hermansyah.....316

[*Trichoderma Reesei* single cell protein production from rice straw pulp in solid state fermentation](#)

M Zaki and S D Said.....321

[Planning of Eka Hospital Pekanbaru wastewater recycling facility](#)

A Jecky, D Andrio and A Sasmita.....327

[Effect of direct electric current on contaminants removal from the peat water with continuous system](#)

I Amri, A Azis and Drastinawati.....334

[Perspectives of high power ultrasound in food preservation](#)

Evelyn and F V M Silva.....340

[Adsorption kinetics of ion of \$Pb^{2+}\$ using Tricalcium Phosphate particles](#)

A Fadli, S R Yenti, F Akbar, Maihendra and F Mawarni.....346

[Assesment of \$PM_{2.5}\$ emission from corn stover burning determining in chamber combustion](#)

Hafidawati, P Lestari and A Sofyan.....353

[Synthesis of biodegradable plastic from tapioca with N-Isopropylacrylamid and chitosan using glycerol as plasticizer](#)

Syaubari, S Safwani and M Riza.....360