



INTERNATIONAL CONFERENCE ON OPERATIONS RESEARCH (ICOR)

4th

Policies and Optimal Decisions on Energy and Environment

Sam Ratulangi University, Manado, Indonesia
19 - 20 September 2019

GENERAL AGENDA & PARALLEL SESSION SCHEDULE



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GENERAL AGENDA
The 4th INTERNATIONAL CONFERENCE ON OPERATIONS RESEARCH
"Policies and Optimal Decisions on Energy and Environment"
MANADO, 19 SEPTEMBER 2019

TIME START (Indonesia Central Standard Time)	ACTIVITIES	VENUE	
07.30	Registration		
Opening Ceremony			
08.30	VIP Entry Procession	Auditorium	
	Welcoming and Theme Performance: Energy Dance		
	National Anthem: Indonesia Raya		
	Prayer		
09.00	Environment in Industrial Era 4.0		
	Introductory Speech by the President of IORA: Prof. Dr. Sudradjat Supian		
	Opening Speech: Rector of Sam Ratulangi University Prof. Dr. Ir. Ellen Joan Kumaat, M.Sc, DEA		
	Keynote Speech: Dirjen Konservasi Sumber Daya Alam dan Ekosistem, Kementerian Lingkungan Hidup dan Kehutanan		
09.55	Photo Session		
10.05	Line Dance		
10.15	Coffee Break / Poster Session / Exhibition		
10.30	Plenary Speeches: - Prof. Dr. Heike Waegele (Alexander Koenig - Leibniz Institute, Germany) - Dr. Prasad Kaparaju (Griffith University, Australia) - Prof. Dr. Seiya Negami (Yokohama National University, Japan) - Prof. Dr. Abdul Talib Bon, PhD (Universiti Tun Hussein Onn, Malaysia)		
	12.15	Lunch	Fakultas MIPA UNSRAT
	13.00	To Linow Lake	On the way
	14.15	Parallel Sessions	Linow Lake
17.30	Back to Manado	On the way	

Nr.	Authors	Title
10	Trina E. Tallei Johanis J. Pelealu Beivy J. Kolondam Lianda Lubis	A molecular phylogeny of <i>Taeniophyllum</i> THRJ inferred from DNA barcode regions
11	Henny V.G. Makal Max M. Ratulangi Denny S. Sualang	Exploration And Identification Trichoderma Spp. As A Biological Control Agents To Plant Pathogens And Starter Making Biological Fertilizers
12	Rumengan, I.F.M. Kubelaborbir, T.M.Malintoi A.H. Luntungan A. Rondonuwu	Ascidians associated with the symbiont Microbe, Prochloron didemni in Manado Bay, North Sulawesi, Indonesia
13	Elvy Like Ginting Gladys G. Poluan Veibe Warouw Stenly Wullur	Identification of Bacteria symbiont sponge strain of Bacillus sp. with Chitinase Degrading Activity
14	Rosita A.J. Lintang Deiske A. Sumilat Esry T. Opa	Antibacterial Activity of PvBa-RL8 Isolate, Bacterium Associated with Nudibranchia Phyllidia varicosa

CLASS : MAHAWU

Nr.	Authors	Title
1	Fitria Fresty Lungari Ishak Bawias	Technology Evaluation (Humanware) of the Fishing Industry in Tahuna Bay, Sangihe (Case Study: Outrigger Boat Fishermen)
2	Sanger G Rarung L.K Assa Y. Kaseger B.E.	Antioxidant Capacity And Alpha Glucosidase Inhibitory Activity Of Ethyl Acetic Extract Edible Marine Algae (<i>Halimena Durvillae</i>).
3	Joudy R.R. Sangari Grevo S. Gerung Unstain N. Rembet Ridwan Lasabuda	Socio-Ecological System (SES) of Small-Scale Crab Fisheries Cluster in South Minahasa Regency, North Sulawesi
4	Sanusi Gugule Chaleb Paul Maanari Feti Fatimah Djefri Tani	Synthesis and Characterization of Biodiesel from Virgin Coconut Oil (VCO)
5	A Armid R Shinjo Takwir A R Ruslan	Spatial Distribution and Pollution Assessment of Heavy Metals Pb, Cu, Ni, Fe and As in the Surface Seawater of Starring Bay, Indonesia
6	Feny Mentang S. Berhimon Henny A. Dien Kristhina P. Rahael Nurmeilita Taher Ayub U.I Meko Roike I. Montolalu	Effect Of Concentration Of Collagen Skin Fish Extraction As An Edible Coating On Sensory Properties Of Smoked Fish Nugget And Fish Stick.

Synthesis and Characterization of Biodiesel from Virgin Coconut Oil (VCO)

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INTRODUCTION

Coconut is one of the potential natural resources owned by Indonesia and North Sulawesi is one of the main coconut producer regions in Indonesia [1]. One of the results of processing from coconut fruit is virgin coconut oil (VCO) which is chemically composed of a mixture of several triglycerides so that it can be used as a raw material for biodiesel synthesis. Biodiesel is an alternative fuel to substitute diesel fuel, which is now known to be increasingly depleting [2]. Biodiesel has several advantages compared to diesel fuel, which can be obtained from natural materials that can be renewed, non-toxic and does not produce pollutants. One of methods to synthesize biodiesel is through a transesterification reaction [3,4,5]. Transesterification is a catalyzed reaction that converts triglycerides or tri-esters into mono-esters, namely methyl or ethyl ester with alcohol as reactant [6].

The performance of biodiesel on an engine depends highly on its physical-chemical properties which is similar to diesel fuel. These characteristics greatly affect engine performance such as the injection, ignition, combustion and emissions processes [7]. In Indonesia, the characteristics of biodiesel have been regulated by the National Standardization Agency namely in the Indonesian National Standard (SNI) 7182: 2015; whereas in the United States it is regulated by American Society for Testing and Materials (ASTM) D6751

This study aims to synthesize and test the characteristics of biodiesel from virgin coconut oil. Synthesis was carried out by reacting virgin coconut oil and ethanol with a KOH as a catalyst; while characterization is done by testing: numbers of acid, esters, iodine, peroxide; viscosity, density, flash points, cloud points and cetane numbers. Furthermore, identification of the main components of biodiesel was carried out spectroscopically.

RESULTS AND DISCUSSION

The making of VCO is done by the method of Gugule *et al.*, namely by a mixer technique and without heating [8]. A yield of 16.94% with a density of 0.92 g/mL and an acid number of 0.56 mg KOH/g was obtained. Before the transesterification is carried out, the acid number is tested first because the raw material for oil must have an acid number <1 mg KOH/g during the reaction [2]. Next, a transesterification reaction was carried out using the method that Gugule and Maanari had done [9]. Transesterification reaction is carried out with a molar ratio of VCO-



Certificate



is awarded to

FETI FATIMAH

as

PRESENTER

The 4th INTERNATIONAL CONFERENCE ON OPERATIONS RESEARCH 2019

Theme:

“Policies and Optimal Decisions on Energy and Environment”

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19-20 September 2019

President of IORA
Prof. Dr. H. Sudradjat Supian, M.Sc.

Dean of Faculty of Mathematics and Natural Sciences, Sam Ratulangi University
Prof. Dr. Benny Pinontoan, M.Sc.

Chairman of The Committee
Dr. Nelson Nainggolan, M.Si.

