LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : *PROSIDING*

Judul karya ilmiah (paper) : Regional Model Development of Plastic Waste Monitoring: Basic Framework from Population and Public Market in Central Java Indonesia.
Jumlah Penulis : 7 orang
Status Pengusul : Penulis Pertama (**Maryono**, Kurnia Seruyaningtyas, All Denico Roynaldi, Cindi Martina Hastuti, Nandita Rahma, Sudarno dan Hadiyanto)
Identitas prosiding :
a. Judul Prosiding : The 1st International Conference on Environment, Sustainability Issues and Community Development (INCRID 2019)
b. ISBN/ISSN : e. 1755-1315 / p. 1755-1307
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f. Alamat repository PT/web : https://iopscience.iop.org/article/10.1088/1755-1315/448/1/012098
g. Terindeks di : Scopus

Kategori Publikasi Makalah (beri ✓ pada kategori yang tepat) : ☑ *Prosiding* Forum Ilmiah Internasional ☐ *Prosiding* Forum Ilmiah Nasional

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b.Ruang lingkup dan kedalaman pembahasan (30%)	9		8,5
c.Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8,5
d.Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	9		8,5
Total = (100%)	**30**		
Nilai Pengusul :			**28,5**

Catatan Penilaian paper oleh Reviewer :
a) Kesesuaian dan kelengkapan unsur artikel:
Artikel lengkap dan sesuai dengan tema konferensi, unsur artikel (abstract, introduction, literature, data and methods, result and discussion, conclusion) lengkap.
b) Ruang lingkup dan kedalaman pembahasan:
Ruang lingkup artikel sesuai dengan topik konferensi dan ada temuan kebaruan, abstrak detail, diskusi hasil dan pembahasan lengkap dan mendalam, kesimpulan detail dan jelas.
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Semarang, 23 November 2020
Reviewer 1,

Dr.Ars.Ir. Rina Kurniati, MT
NIP.196608221997022001
Departemen PWK, FT. UNDIP

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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal *Prosiding*		Nilai Akhir Yang Diperoleh
	Internasional Terindeks Scopus (30)	Nasional ( )	
a.Kelengkapan unsur isi paper (10%)	3		2,5
b.Ruang lingkup dan kedalaman pembahasan (30%)	9		8
c.Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8
d.Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	9		8
Total = (100%)	**30**		26,5
Nilai Pengusul :			

Catatan Penilaian paper oleh Reviewer :
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b) Ruang lingkup dan kedalaman pembahasan:
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c) Kecukupan dan kemutakhiran data/informasi dan metodologi
Data informasi cukup, metode mutakhir dan jelas, referensi cukup.
d) Kelengkapan unsur dan kualitas terbitan:
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Semarang, 29 Desember 2020
Reviewer 2,

Wido Prananing Tyas, ST., MDP., Ph.D
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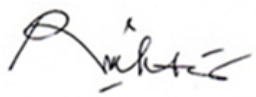
Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a.Kelengkapan unsur isi paper (10%)	3,0	2,5	2,75
b.Ruang lingkup dan kedalaman pembahasan (30%)	8,5	8,0	8,25
c.Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	8,5	8,0	8,25
d.Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	8,5	8,0	8,25
Total = (100%)	28,5	26,5	27,5

Semarang, 29 Desember 2020

Reviewer 1,



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Regional Model Development of Plastic Waste Monitoring: Basic Framework from Population and Public Market in Central Java-Indonesia

Maryono M.[a, b] ; Seruyaningtyas K.[b]; Roynaldi A.D.[b]; Hastuti C.M.[b]; Rahma N.N.[b]; Sudarno[b, c]; Hadiyanto[b, d]

Save all to author list

[a] Department of Urban and Regional Planning, Faculty of Engineering, Diponegoro University, Indonesia

[b] Center for Green Infrastructure Resilience and Development (C-Greinde), Master Program of Environmental Science, School of Postgraduate, Diponegoro University, Indonesia

[c] Department of Environmental Engineering, Faculty of Engineering, Diponegoro University, Indonesia

[d] Department of Chemical Engineering, Faculty of Engineering, Diponegoro University, Indonesia

Abstract

Recently, Intention to accelerate SGDs achievement and also mitigate climate change impact concerning to regional health, increasing significantly. One of the regional health issues for those is concerning to impcat of plastic waste. Event though plastic is one of the principal materials in the regional market and industry, but then plastic waste arise to be principal problem for regional

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PREFACE

The International Conference on Environment, Sustainability Issues, and Community Development 2019 (INCRID 2019) is the first international conference hosted by the Department of Environmental Engineering, Diponegoro University. INCRID 2019 was held at Santika Premiere Hotel, Semarang, Indonesia, from 23rd-24th October 2019. The program provides a unique platform for professionals, researchers, and academicians to share their experiences and explore the possible influence of sustainable living environment in the future. With the theme of "Discovering Innovations and Opportunities for Sustainable Living Environment", this forum will promote the close relationship between environment, sustainable development, and community development in order to achieve the desired goals to build the living environment.

Published papers in this proceeding has themed with various topics including Environment, Health, & Safety, Environmental Technology, Green Infrastructure, Energy Conservation and Efficiency, Urban Development and Resilient Community, and Sustainable Development. All of participants in this conference were come from various parts of the country, with background of either academia or industry.

The organizing committee is gratefully acknowledging for the support from various parties who contributed in successfulness of this event. We hope that INCRID 2019 will become a means of discussion that to improve and develop by promoting new ideas and strengthening networks among researchers. We believe that proceedings will serve the role of scientific reference and advancing knowledge in the future.

M. Arief Budihardjo, S.T., M.Eng.Sc., PhD.

Chief Organizer of INCRID 2019

Table of contents

Volume 448

2020

Previous issue Next issue

The 1st International Conference on Environment, Sustainability Issues and Community Development 23 - 24 October 2019, Central Java Province, Indonesia

Accepted papers received: 29 January 2020

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+ Open abstract View article PDF

OPEN ACCESS 012044

The Effect of Concentration of Personal Care Pollutant in Domestic Wastewater on the Efficiency Removal of COD and Ammonium in Batch Reactor

N Hardyanti, S Sudarno and A E Jayanti

+ Open abstract View article PDF

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Aluminium Recovery from Water Treatment Sludge as Coagulant by Acidification

D P Ruziqna, N Suwartha, S S Moersidik and S Adityosulindro

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OPEN ACCESS 012046

Assessment of the efficiency of the wastewater treatment plant: a case of Gacuriro Vision City

M J Nikuze, J B Niyomukiza, A Nshimiyimana and J P Kwizera

+ Open abstract View article PDF

OPEN ACCESS 012047

Removal of Physical Contaminants from Potable Water Distribution

A P Wicaksono, B Zaman and M A Budihardjo

+ Open abstract View article PDF

OPEN ACCESS 012048

Cerucuk Filter Modified (CFM) Design as Sediment Traps to Reduce Total Suspended Solids (TSS) Concentration in the Drainage Mine Reclamation Area: An Field Experiment

H U Surapati and A Mizwar

+ Open abstract View article PDF

OPEN ACCESS 012049

Potential Risk Analysis of Water Loss in Water Distribution Networks

K H Sambodja, B P Samadikun and S Syafrudin

+ Open abstract View article PDF

OPEN ACCESS 012050

Influence of Pharmaceutical Residue in Domestic Wastewater on the Removal Efficiency of COD and Ammonium in an Anaerobic Batch Reactor

S Sudarno, N Hardyanti and F A A Pradhita

+ Open abstract View article PDF

OPEN ACCESS 012051

Addition of Solid Recovered Fuel (SRF) to the Bio-drying Process and the Effects of Variation in Air Discharge on Temperature Parameters and Urban Waste Water Content

C Soriano, D P Ulta, D Pertiwi, A R Rizaldianto and A D Farhan

OPEN ACCESS 012081

Community Empowerment for Environmentally Sustainable Tourism based on Local Perspectives (Case Study of Anakoli Village, Nagekeo)

H L T Meo and R D Panda

+ Open abstract View article PDF

OPEN ACCESS 012088

The Application of Drying Technology Utilizes Integrated Energy Sources to Process Various Agricultural Products for the People of the Border Area in Talaud Islands Regency

J Mantiri, A A Maramis, R A Mege and J D Ticoh

+ Open abstract View article PDF

OPEN ACCESS 012089

Application of reproduction and production technology of goat livestock to improve living standards of the people of Dayow Village, Pinolosian Timur Subdistrict, Bolaang Mongondow Selatan Regency

R A Mege, A A Maramis, J Paus and J Mantiri

+ Open abstract View article PDF

OPEN ACCESS 012090

The Effectiveness of Strategy Adaptations on Tidal Flood in The Coastal Areas of Sayung, Demak, Central Java, Indonesia

I Rudiarto, H Rengganis, A Sarasadi and E Caesar

+ Open abstract View article PDF

OPEN ACCESS 012091

Integrated Biomaterials Engineering of Oil Palm Fibres and Microalgae for Bioenergy, Environmental Remediation, and Conversion into Value-Added-Products

M A Abdullah, A A A Bahamid, O M S Alshajrawi, M S Nazir and Z Tahir

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OPEN ACCESS 012092

Measuring Community Resilience to the Tsunami Disaster (Study of Sukarame Village, Carita District, Pandeglang Regency)

D A P Sari and T E B Soesilo

+ Open abstract View article PDF

OPEN ACCESS 012093

The Resilience of The Coastal Communities of Semarang City in The Face of Floods and Tides Due to The Effects of Climate Change

M Muktiali

+ Open abstract View article PDF

OPEN ACCESS 012094

Spatial Analysis of Driving Factors on Land Cover Change's Clusters in West Java Province

I S Ajie, A Deliar and R Virtriana

+ Open abstract View article PDF

OPEN ACCESS 012095

The Collective Action of Urban Communities in Disaster Risk Reduction: A Case Study in Yogyakarta City

P Yuanjaya and H Fajri

+ Open abstract View article PDF

OPEN ACCESS 012096

Motives and Dynamic of Community-Based Aquaponics for Urban Farming in Semarang

M Rahdriawan and R R Arriani

+ Open abstract View article PDF

OPEN ACCESS 012097

Valuation of Coastal Ecosystem Services: A Case of Tangerang Regency, Indonesia

F W Asrofani, H S Hasibuan and K Mizuno

+ Open abstract View article PDF

OPEN ACCESS 012098

Regional Model Development of Plastic Waste Monitoring: Basic Framework from Population and Public Market in Central Java-Indonesia

M Maryono, K Seruyaningtyas, A D Roynaldi, C M Hastuti, N N Rahma, Sudarno and Hadiyanto

+ Open abstract View article PDF

OPEN ACCESS 012099

Disaster Risk Perception and Household Disaster Preparedness: Lesson Learned from Tsunami in Banten

Z Akbar, R D Suryaratri, Y Tri, G Gumelar and M Ariyani

+ Open abstract View article PDF

Environmental Management and Pollution Prevention

OPEN ACCESS 012112

Knowledge of Local Communities Affected by the Development of Geothermal Energy

H Malau, H Fajri, P Yuanjaya, B Saputra and K D Maani

+ Open abstract View article PDF

OPEN ACCESS 012113

Sustainable Community Empowerment Through the Program of Self-Sufficient Village of Non-Rice Food in Raanan Baru

T M Palapa, A Yalindua and A A Maramis

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Analysis of Electricity Generation from Landfill Gas (Case Study: Manggar Landfill, Balikpapan)

C K Banaget[1], B Frick[2] and M N I L Saud[1]

[1]Environmental Engineering Study Program, Institut Teknologi Kalimantan, Balikpapan 76127, Indonesia
[2]Energy Engineering Department, Polytech Annecy-Chambery, Universite Savoie Mont Blanc, Annecy 74940, France

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Abstract. Despite of adverse impacts on the environment, landfill has big potency as renewable energy sources since it generates biogas from organic waste degradation process which can be used for power plant purposes. In 2017, the volume of waste disposed to Manggar Landfill was 128,000 tons, which mostly are organic waste (59.4%). Therefore, this study aims to estimate the amount of energy that can be generated from landfill as methane, by calculating biogas production in landfill based on waste generation, as well as composition using LandGem and Afvalzorg model. In 2017, Manggar landfill produced about 4×10^3Mg CH_4/year or about 5.31 to 6.44×10^6 m^3/year. The estimated methane then converted to electricity using gas engine and trigeneration methods. Using gas engine, methane from Manggar Landfill is predicted to produce electricity about 787 MWh/month. On the other hand, if trigeneration method applied (by keeping the same gas engine as before), it produces 41.8% of heat which convert to 29.3 kWh of cold. In conclusion, it will be beneficial if Manggar Landfill capture and treat methane for generating electricity since Manggar Landfill produces about 6.44×10^6 m^3/year which can be used for electricity purposes of around 10,000 people using gas engine.

1. Introduction

Landfilling is the most preferable method applied in developing countries, particularly in Indonesia, in handling its municipal solid waste. It is considered as cheap and convenient method since it is not restricted to advanced technology for treating and managing waste. Despite of its economics advantages, landfilling gives many adverse impacts on environment. The failure of landfilling methods may lead to many environmental contaminants due to leachate and which are soil pollution, ground water contamination and air pollution due to emission of greenhouse gases [1]. Therefore, waste management hierarchy put landfilling method as last option preferable due to its adverse effect to environment.

In Balikpapan, landfilling has been practiced many years ago, but proper landfilling area named Manggar landfill was opened in 2002. When opened in 2002, the volume of waste disposed to Manggar landfill was 69,000 tons and in 2017 it reached 128,000 tons. In a period of 15 years, the volume of waste has doubled. Urban waste that is directly piled up still contains a lot of organic waste at 59.4%. Followed by plastic waste, paper, and others, which have a composition respectively: 13.51%, 12.26%, and 10.62%. This high percentage of organic waste gives adverse impact from landfill gas produced by

Assessment of the efficiency of the wastewater treatment plant: a case of Gacuriro Vision City

M J Nikuze[1], J B Niyomukiza[2], A Nshimiyimana[3] and J P Kwizera[3]

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Abstract. Wastewater is the liquid waste generated after being used for different purposes. It has a great impact on the environment when discharged untreated or partially treated. The poor management of wastewater at Gacuriro wastewater plant leads to the discharge of subsequently untreated and partially treated wastes. Therefore, the research focused on the assessment of the efficiency of Gacuriro wastewater treatment plant. Samples of wastewater were collected at the inlet and outlet of the treatment plant for laboratory analysis. Parameters tested include pH, Temperature, Total Suspended Solids (TSS), Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Coliform (TC), Oil and Grease, and Total Phosphorus (TP). Inlet and outlet results are 112.5-364.5 mg/l, 60-190.2 mg/l for BOD; 447-820 mg/l, 46.6-300 mg/l for COD, 19-24 mg/l, 12-18 mg/l for TSS; 6.8-9.05 mg/l, 6.4-5.75 mg/l for TP, 2419.6-50000 counts/100 ml, 1730-30000 counts/100 ml for TC, and 1.012-1.079 mg/l ,0.75-0.923 mg/l for Oil and Grease. Their percentage reduction of efficiency were in the range of TSS (62.50-75%), COD (63.05-78.74%), BOD5 (69.97-83.70%), Oil and Grease (48.67-62.19%), TP (49.26-60.82%), TC (57.14-64.00%) while average inflow and outflow discharge are 2.5 l/s and 1.5 l/s, respectively. The effluent from the treatment plant needs improvement in disinfection systems to remove bacteria out of discharged effluent.

1. Introduction

Water is a valuable commodity, yet scarce in most countries and one of the challenges to engineers, hydrologists, technologists, and scientists is protecting the water resources [1]. World Health Organization (WHO) reported that 80% of illnesses and infections in the world are due to inadequate treatment of sewage, and more than 3.4 million people die annually because of pathogens living in the aquatic environment [2]. Wastewater is essentially the liquid waste conveyed after a variety of uses has fouled it. The water supplied to a given region or apartment has several chemical substances and microbial bacteria during its application such that the wastewater needs a polluting potential and becomes a health and environmental hazard. Communicable diseases of the intestinal tract such as cholera, typhoid, dysentery and water-borne diseases like infectious hepatitis are spread from uncontrolled disposal of wastewater, and therefore prevention of communicable diseases and protecting public health attracts the primary objective of sanitary wastewater disposal [2]. However, management and handling of wastewater have been one of the main challenges facing developing

Integrated Biomaterials Engineering of Oil Palm Fibres and Microalgae for Bioenergy, Environmental Remediation, and Conversion into Value-Added-Products

M A Abdullah[1], A A A Bahamid[1], O M S Alshajrawi[1], M S Nazir[2] and Z Tahir[3]

[1]Institute of Marine Biotechnology, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia
[2]Department of Chemistry, COMSATS University Islamabad, Lahore Campus, 54000, Punjab, Pakistan
[3]Department of Chemical Engineering, University of Gujrat, Gujrat, Pakistan

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Abstract. The 2030's core agenda for 17 Sustainable Development Goals aims to bring systems thinking and holistic solution to ensure that progress for People and Profit do not side-line planet as the major stakeholder. Discussion on the Economics issues should bring in the Environment and Socio-cultural diversity dimension as equal components. This may necessitate a complete revamp of human activities such that efforts to tackle famine and poverty and the emerging infectious diseases are not divorced from addressing the problems brought about by climate change and the destruction of eco-systems and habitat for wildlife. The focus of this review article is to highlight research and development in integrated biomaterials engineering of oil palm fibres and microalgae for sustainable bioenergy production, environmental remediation and conversion into value added-products *via* integrated palm oil milling processes and algal biorefinery. Eco-friendly extraction of cellulose and the development of composite materials for different applications will be highlighted. The use of microalgae for bioenergy, effluent remediation and the utilization of microalgal extracts in anticancer agent formulation will be discussed. This hopefully could bring forth insights towards collaboration among the policymakers, government agencies, industries and academics to tackle the immediate and pressing problems facing the world today.

1. Introduction

The increasing world population and the disastrous outcomes of global climate change necessitate a complete revamp of human activities to mitigate any potential calamity on the planet and its inhabitants. Global warming has been caused by greenhouse gas emissions, of which nearly 80% is from carbon dioxide, mainly from the energy sector, industries, transport, and wastes [1]. The impact on the environment from forest clearing, particulate matters in the air, heavy metal or plastic pollution have become a major concern especially on human health and on wildlife, and marine and aquatic eco-system.

CERTIFICATE
OF APPRECIATION

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October 23rd - 24th , 2019

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