

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

**Technical Program Summary  
Day 1 – 12 November 2019**

<b>Tuesday, 12 November 2019</b>	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>	<b>Session 4</b>	<b>Session 5</b>	<b>Session 6</b>
13.00 - 14.40	Sustainable Energy System	Sustainable Energy System	Renewable Energy Resource	Sustainable Energy System	Renewable Energy Technology	Sustainable Energy System
	Chair : Dr. Dhany Arifianto, ST, M.Eng	Chair : Dr.-Ing. Doty Dewi Risanti	Chair : Dr. Imam Abadi, ST, MT	Chair : Totok Ruki Biyanto, ST, MT, PhD	Chair : Dr. Ir. Totok Soehartanto, DEA	Chair : Dr. rer. nat. Ir. Aulia M.T. Nasution, MSc
<b>14.40 - 15.10</b>	<b>Coffee Break</b>					
15.10 - 16.50	Renewable Energy Technology	Sustainable Energy System	Renewable Energy Resource	Sustainable Energy System	Renewable Energy Technology	Sustainable Energy System
	Chair : Dr. Ridho Hantoro, ST, MT	Chair : Ir. Harsono Hadi, MT, PhD	Chair : Dr. Suyanto, ST, MT	Chair : Dr. Katherin Indriawati, ST, MT	Chair : Ruri Agung Wahyuono, ST, MT	Chair : Agus Muhammad Hatta, ST, MSi, PhD



**AUN/SEED-Net**



**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

**Technical Program Summary  
Day 2 – 13 November 2019**

<b>Wednesday, 13 November 2019</b>	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>	<b>Session 4</b>	<b>Session 5</b>	<b>Session 6</b>
11.00 - 12.00	Sustainable Energy System	Renewable Energy Technology	Sustainable Energy System	Renewable Energy Technology	Renewable Energy Technology	Renewable Energy Resources
	Chair : Dr.-Ing. Doty Dewi Risanti	Chair : Ir. Harsono Hadi, MT, PhD	Chair : Dr. rer. nat. Ir. Aulia M.T. Nasution, MSc	Chair : Nur Laila Hamidah ST, MSc	Chair : Dr. Suyanto, ST, MT	Chair : Ruri Agung Wahyuono, ST, MT
<b>12.00 - 13.00</b>	<b>Lunch</b>					
13.10 - 14.40	Sustainable Energy System	Renewable Energy Technology	Sustainable Energy System	Renewable Energy Technology	Renewable Energy Technology	Renewable Energy Technology
	Chair : Dr. Ridho Hantoro, ST, MT	Chair : Dr. Dhany Arifianto, ST, M.Eng	Chair : Dr. Suyanto, ST, MT	Chair : Agus Muhammad Hatta, ST, MSi, PhD	Chair : Moh Kamalul Wafi ST. MSc,DIC	Chair : Dr. Ir. Totok Soehartanto, DEA
<b>14.40 - 15.10</b>	<b>Coffee Break</b>					
15.10 - 16.30	Sustainable Energy System	Renewable Energy Technology	Sustainable Energy System	Renewable Energy Technology	Renewable Energy Technology	Renewable Energy Technology
	Chair : Dr. Ridho Hantoro, ST, MT	Chair : Dr. Dhany Arifianto, ST, M.Eng	Chair : Dr. Ir. Totok Soehartanto, DEA	Chair : Dr. Katherin Indriawati, ST, MT	Chair : Moh Kamalul Wafi ST. MSc,DIC	Chair : Nur Laila Hamidah ST, MSc



**AUN/SEED-Net**



**12 November 2019**

**Parallel Session 1**

**Topic:** Business Models and Financing Schemes

**Chair:** Dr. Dhany Arifianto, ST, M.Eng

13.00-13.20	Title : Use of diesel mixed with ethanol and ethyl acetate for alternative fuel in a high-speed diesel engine Author : Mattana Santasnachok, Ekkachai Sutheerasak, Charoen Chinwanitcharoen, Wirogana Ruengphrathuengsuka
13.20-13.40	Title : Technical and Economic Analysis Of Municipal Solid Waste Potential For Waste to Energy Plant (Case Study: TPA Jati Barang Semarang) Author : Mohammad Saleh, Hadiyanto and Jaka Windarta
13.40-14.00	Title : Distribution of Inorganic Minerals in Coal Seams from Samarinda Area, Lower Kutai Basin, Indonesia Author : Chaw Thuzar Win, Sugeng Sapto Surjono and Donatus Hendra Amijaya
14.00-14.20	Title : Green Sukuk : Islamic Social Financing Scheme For Renewable Energy Issues Author : Aprilya Fitriani and Nur Hidayat
14.20-14.40	Title : Drilling System Techno-Economic Monitoring System Based Internet of Things (IoT) Author : Totok R. Biyanto, Matradji Matradji, Hendra Cordova, Henry Setiawan, Nirvana B. Yogaswara, Ray Hardyant, Rizky M. Simatupang and Hairul Huda
14.40-15.10	COFFE BREAK

**Parallel Session 1**

**Topic:** Energy Storage, Environmental Impact of Renewable Energy Implementation

**Chair:** Dr. Ridho Hantoro, ST, MT

15.10-15.30	Title : Rooftop Photovoltaic-Battery Systems to Mitigate Overvoltage and Under Voltage in a Residential Low Voltage Distribution System Author : Praphawadee Charoenwattana and Umarin Sangpanich
15.30-15.50	Title : Analysis of Voltage Unbalance and Energy Loss in Residential Low Voltage Distribution Systems with Rooftop Photovoltaic Systems Author : Rattanaprapa Charoenwattana and Umarin Sangpanich
15.50-16.10	Title : Planning and Design of a PV-Battery Microgrid System for Improving the 22 kV Radial Distribution System of the Sichang Island in Thailand Author : Yutthana Suyalue and Umarin Sangpanich
16.10-16.30	Title : Design Of Battery Charging System On Hybrid Solar Tracker - Electric Grid Based On Flower Pollination Optimized – Fuzzy Control Author : Kevin Gica Erwandha and Imam Abadi
16.30-16.50	Title : Involvement of local communities to renewable energy development in Vietnam – Case studies in rural and mountainous areas

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

	Author : Dang Thanh Tu, Nguyen Thi Hoang Lien, Nguyen Tuan Anh and Luu Duc Hai
16.50-17.10	Title : Stagnation and Solar Fraction Analysis on Solar Thermal Integration in Southeast Asia
	Author : Calvin Kong Leng Sing, Jeng Shiun Lim



**AUN/SEED-Net**



**12 November 2019**

**Parallel Session 2**

**Topic:** Business Models and Financing Schemes

**Chair:** Dr.-Ing. Doty Dewi Risanti

13.00-13.20	Title : Design of Techno-Economic Monitoring System Based On Internet of Things (IoT) for Distillation Column Author : Totok R. Biyanto, Matradji ., Hendra Cordova, Henry A. Setiawan, Rizky M. Simatupang, Nirvana B. Yogaswara and Ray Hardyant
13.20-13.40	Title : Internet of Things for Monitoring Techno-Economic Powerplant Boiler Operation Author : Totok R. Biyanto, Matradji ., Hendra Cordova, Henry A. Setiawan, Ray Hardyant, Nirvana B. Yogaswara and Rizky M. Simatupang
13.40-14.00	Title : The Evaluation Of Tax Allowance Policy For Wind Power Industry In Indonesia Author : Titi Muswati Putranti, Nurul Salsabila and Indriani
14.00-14.20	Title : Comparison of Implementation of Blended Biodiesel B20 between Indonesia and United States of America Author : Hermawan Febriansyah, Nibras Fitrah Yayienda and Suminto Suminto
14.20-14.40	Title : Readiness of Indonesia to Implement Blended Biodiesel B30 Author : Hermawan Febriansyah, Fajar Budi Utomo and Suminto Suminto
14.40-15.10	COFFE BREAK

**Parallel Session 2**

**Topic:** Life Cycle and Impact Assesment, Energy Efficiency in Industri-Road to Proper

**Chair:** Ir. Harsono Hadi, MT, PhD

15.10-15.30	Title : Effects of Addition of Free And Fix Drag Reducing Device On Blades to the Performance of Savonius Wind Turbine Author : Indra Herlamba Siregar, Moch Effendy and Akhmad Hafizh Ainur Rasyid
15.30-15.50	Title : Statistical analysis of air-conditioning and total load diversity in typical residential buildings Author : Naja Aqilah Hisham, Sheikh Ahmad Zaki Shaikh Salim, Aya Hagishima and Fitri Yakub
15.50-16.10	Title : Social and Economy Impact of Photovoltaic Power Plant Electrification for Inhabitant in Genting Island Indonesia Author : Dianing Novita Nurmala Putri and Andrie Satrya
16.10-16.30	Title : A study to develop a waste heat recovery tube used in the seawater distillation system Author : Khong Vu Quang, Vu Minh Dien, Nguyen Duy Tien
16.30-16.50	Title : Plantwide Control Concept for Turboexpander Cryogenic Gas Separation Control Design

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

	Author : Hendra Cordova, Jerri Susatio, Muhammad Andro Purnomo, Gideon Saputra Nainggolan, Mohammad Okky Mabruuri and Totok Ruki Biyanto
16.50-17.10	Title: Fabrication and electrochemical performance of an all-solid-state lithium battery using Ga-doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ solid electrolyte
	Author/s: Ruziel Larmae Gimpaya, Shari Ann Botin, Jan Carlo Palomares, Renz Marion Garcia, Rinlee Butch Cervera

**12 November 2019**

**Parallel Session 3**

**Topic:** Exploration of Renewable Energy Resource

**Chair:** Dr. Imam Abadi, ST, MT

13.00-13.20	Title : Characteristic Biofuel Microalgae Chlorella Sp as Renewable Energy Source Author : Anggra Fiveriati and Yeddid Yonatan
13.20-13.40	Title : Implementation of Hydrological Model and Climatological Data for Estimating the Hydropower and Solar Energy Potential in Patimban Area (The Deep-Sea Port) Author : Ruri Agung Wahyuono and Miga Magenika Julian
13.40-14.00	Title : Production of Fatty Acid Ethyl Esters from Crude Rice Bran Oil under Mild Reaction Conditions Assisted by High Shear Mixing Author : Siti Zullaikah, Miftahul Hadi Pratama, Nadiyah Annisa Fitri, Adi Tjipto Utomo and M Rachimoellah
14.00-14.20	Title : Preliminary Study on Microbial Desulfurization: Targeting for H <sub>2</sub> S Removal in Biogas by Bio-scrubber in Biogas Power Plant Author : Joni Prasetyo, Samuel Pati Senda, Dwi Husodo Prasetyo and Agustina Dyah Setyowati
14.20-14.40	Title : Review Geothermal Energy in Indonesia: Current Status, Potential, Barriers, and Future Policy Author : Danur Lambang Pristiandaru, Rudy Laksmo W. and Imam Supriyadi
14.40-15.10	COFFE BREAK

**Parallel Session 3**

**Topic:** Exploration of Renewable Energy Resource, Spatial Renewable Energy Mapping and Planning

**Chair:** Dr. Suyanto, ST, MT

15.10-15.30	Title : Problems and Integrating Procedure of Quadcopter with Anemometer for Collect Wind Velocity Data Author : Azamataufiq Budiprasojo
15.30-15.50	Title : Production of Bio-crude Oil from Microalgae Chlorella sp. Using Hydrothermal Liquefaction Process Author : Aldeniro Arief Bawono, Hisyam Adhisatrio, Laras Prasakti and Yano Surya Pradana
15.50-16.10	Title : Potential of New and Renewable Energy in Merauke Regency As the energy of the future Author : Hariyanto Hariyanto and Ruri Agung Wahyuono
16.10-16.30	Title : Sensitivity Anlysis of Angle, Length and Brim Height of The Diffuser for The Small Diffuser Augmented Wind Turbine Using The Numarical Investigation Author : Yu Yu Maw, Min Thaw Tun

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

16.30- 16.50	Title : Optimization Of Operating Condition Biopolymer Microbial Enhanced Oil Recovery Author : Matradji, Totok Biyanto, Hendra Cordova, Eka Prasajo, Siti Sofiya, Mestika Rahmah, Syamsur Rijal, Atika Diyanasari and Hairul Huda
16.50- 17.10	Title : Optimization of Design Shell and Tube Heat Exchanger in Coconut Milk Pasteurization Process Author : Hendra Cordova, Imam Faruq Abdillah and Totok Ruki Biyanto



**12 November 2019**

**Parallel Session 4**

**Topic:** Energy Efficiency in Industry-Road to Proper

**Chair:** Totok Ruki Biyanto, ST, MT, PhD

13.00-13.20	Title : Analysis of RAM (Reliability, Availability, Maintainability) Production of Electric Voltage from PV (Photovoltaic) 48V at PLTH Pandansimo Author : Fizanti Causia Agusti, Ali Musyafa' and Muhammad Khamim Asy'Ari
13.20-13.40	Title : Analysis of Optimum Waste Potential within Technology Processed for Waste to Energy (PLTSa) in DKI Jakarta-Indonesia Author : Syamsyarief Baqaruzi
13.40-14.00	Title : MANUFACTURING RISK IDENTIFICATION IN THE STEEL INDUSTRY Author : Dharu Dewi, Imam Bastori and Arief Tris Yuliyanto
14.00-14.20	Title : viaTourism-Based Productive Housing in the Area of Crocodile Skin Craftsmen Author : Yosi Valentina Simorangkir and Ruri Agung Wahyuono
14.20-14.40	Title : Plantwide Control: A New Design Procedure and Its Application at Liquefied Petroleum Gas Facility (LPGF) Plant Author : Toto Haksoro, Safira Firdaus Mujiyanti, Totok R. Biyanto and Siti Aulia Aisyah
14.40-15.10	COFFE BREAK

**Parallel Session 4**

**Topic:** Energy Efficiency in Industry-Road to Proper

**Chair:** Dr. Katherin Indriawati, ST, MT

15.10-15.30	Title : Plant Advanced Process Control to Minimize Disturbance in Gas Processing Plant Author : Safira Firdaus Mujiyanti and Totok Ruki Biyanto
15.30-15.50	Title : Algorithmic computation of boiler blowdown heat recovery Author : Pratik Marathe and Pruthwiraj Kothavale
15.50-16.10	Title : Implementation Of Fractal Flow Conditioner And Orifice Plate In Measuring Volumetric Flow Rate On Gas Metering Skid With Numeric Method Based On Computational Fluid Dynamics (CFD) Author : Dzhokar Ali Akbar, Gunawan Nugroho and Roekmono
16.10-16.30	Title : Techno Economy Optimization of Operating Condition of Depropanizer Column Advanced Process Control Author : Hendra Cordova, Filza Adha Adelina, Nanda Erzhiavica Tama, Intan Parliani Putri and Totok Ruki Biyanto
16.30-16.50	Title : Optimization Of Adsorption Pressure Swing Design As Carbon Capture In Case Study Of Pltu Paiton And Pltg Muara Tawar Author : Totok Ruki Biyanto, Gunawan Nugroho, Kevin Sanjoyo Gunawan, Muhammad Al Jawi and Sawal Sawal

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

16.50- 17.10	Title : Life Cycle Analysis Of Structural System Of Residential Housing Unit In Caloocan, Malabon, And Valenzuela City In The Philippines
	Author : Anna Marie P. Aquino, Kezia Kerrane N. Briones, Michelle A. Ikeda, Beatriz G. Magalong



**AUN/SEED-Net**



**12 November 2019**

**Parallel Session 5**

**Topic:** Renewable Energy Conversion Technology

**Chair:** Dr. Ir. Totok Soehartanto, DEA

13.00-13.20	Title : Evaluation Of Urban Area Flood Mitigation System By Monitoring Determination of Change Trends of Riverbed Sedimentation in Kali Surabaya Author : Muhammad Hafiizh Imaaduddin
13.20-13.40	Title : Graphene Oxide-Silk Fibroin Nanocomposite Membranes for Flexible Proton Conductive Material Author : Nur Laila Hamidah, Shintani Masataka, Aynul Sakinah Ahmad Fauzi, Mitsuru Sasaki, Armando T. Quitain and Tetsuya Kida
13.40-14.00	Title : Study on the Impact of Integrated PV Uncertainties Into an Optimal LVAC in a Rural Village Author : Vannak VAI, Long BUN
14.00-14.20	Title : Design Optimization of Kettle Reboiler Using Recent Stochastic Algorithms Author : Hendra Cordova, Matradji Matradji, Vivin Firdaus Aftami, Widya Lubis Vanessa, Al-Fajri Al-Fajri and Totok Ruki Biyanto
14.20-14.40	Title : Polyol Modification of PEDOT:PSS (Hole Transport Materials) Affects the Performance and Stability of CaTiO <sub>3</sub> Solar Cells and UV Photodetector Author : Lusi Ernawati and Ruri Agung Wahyuono
14.40-15.10	COFFE BREAK

**Parallel Session 5**

**Topic:** Renewable Energy Conversion Technology

**Chair:** Ruri Agung Wahyuono, ST, MT

15.10-15.30	Title : Techno-Economic Analysis of Anode Production in The Aluminum Smelter Author : Atika Safitri, Nugroho Adi Sasongko, Ghiyar Ragil Alfath, Immanuella Juan Safira and Wara Dyah Pita Rengga
15.30-15.50	Title: Development of a measurement and control system for a 700 kW biogas power generation plant based on Omron SYSMAC CJ2M Author/s:Arya Bhaskara Adiprabowo, Bambang Muharto and Hana Nabila Anindita
15.50-16.10	Title: Experimental Study of Hydrokinetic Power Generation System Integration – Straight Blade Cascaded (SBC) Vertical Axis Darrieus Turbine Author/s:Sarwono Sarwono, Ridho Hantoro, Fernando Panjaitan and Erna Septyaningrum
16.10-16.30	Title : Optimization of Operating Condition of CO <sub>2</sub> -Foam Flooding Enhanced Oil Recovery Case Study: Sandstone Layer in Sunda Strait Author : Totok Biyanto, Matradji -, Hendra Cordova, Atika Diyanasari, Eka Prasojo, Mestika Rahmah, Syamsur Rijal, Siti Sofiya and Hairul Huda
16.30-16.50	Title : Design of Energy Consumption Monitoring System IoT Based Author : Totok Soehartanto, Ronny Noriyati and Erma Suryani

**12 November 2019**

**Parallel Session 6**

**Topic :** Renewable Energy Integration, Smart Grid, and Energy Network; Energy Efficiency Technology; Renewable Energy Conversion Technology; Life cycle and impact assessment;

**Chair :** Dr. rer. nat. Ir. Aulia M.T. Nasution, MSc

13.00-13.20	Title : Implementation Of Fuzzy-Pi Control For Fixed Speed Of Horizontal Axis Wind Turbine Author : Alex Taufiqurrohman Zain, Ali Musyafa' and Muhammad Khamim Asy'Ari
13.20-13.40	Title: Comparison of Ground Resistance Value by Using Chopper, Aluminum, Iron Electrode on Sand, Mud and Clay Author/s: Paulus Manger and Ruri Agung Wahyuono
13.40-14.00	Title : Best Practice Policy : The Effectiveness Of Natural Gas Line Program In Lontong Neighborhood Surabaya Author : Fierda Nurany and Dewi Amartani
14.00-14.20	Title : Analysis Effect Furnace Chamber Shape On Mild Combustion Using Computational Fluid Dynamic Method Author : Klora Hanggiayi and Gunawan Nugroho
14.20-14.40	Title : The Policy Implementation Review of Waste to Energy Power Plant in Surabaya Pilot Project Author : Fierda Nurany, Ismail Ismail, Mohamad Ferdaus Noor Aulady and Nur Laila Hamidah
14.40-15.10	COFFE BREAK

**Parallel Session 6**

**Topic :** Renewable Energy Integration, Smart Grid, and Energy Network; Energy Efficiency Technology; Renewable Energy Conversion Technology; Life cycle and impact assessment;

**Chair :** Agus Muhammad Hatta, ST, MSi, PhD

15.10-15.30	Title : Utilization Of Chicken Eggshells As Catalyst In Biodiesel Synthesis From Waste Cooking Oil Author : Lizda Johar Mawarani, Thomas Andherson Sihombing and Doty Dewi Risanti
15.30-15.50	Title : The Effect of Mangosteen Varieties as Dyes and ZnO Nanostructures Mixture to DSSC Characteristics Author : Lizda Johar Mawarani, Ratna Puspitasari and Doty Dewi Risanti
15.50-16.10	Title : Reconfiguration Of Low Voltage Electricity Network In Andungbiru Micro Hydro Power Plant Author : Teguh Utomo and Edy Setiawan
16.10-16.30	Title : Impact of producer gas properties on premixed flameless combustion characteristics in a cyclone combustor

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

	Author : L. Chanphavong, Z.A. Zainal
16.30- 16.50	Title : CO <sub>2</sub> -Foam Flooding Enhanced Oil Recovery Operating Condition Optimization Case Study: Limestone in Sunda Strait Author : Hendra Cordova, Totok Biyanto, Matradji, Mestika Rahmah, Atika Dayanasari, Siti Sofiya, Eka Prasajo, Syamsur Rijal and Hairul Huda
16.50- 17.10	Title: Simulation of Solar Greenhouse Dryer in Vietnam Author/s: Tran Tan Viet, Duong Hoang Phi Yen, Le Thi Kim Phung, and Mai Thanh Phong

**13 November 2019**

<b>Parallel Session 1</b>	
<b>Topic:</b> Energy Efficiency Technology	
<b>Chair:</b> Dr.-Ing Doty Dewi Risanti, ST, MT	
11.00 - 11.20	Title: Characteristics of Woody Cutting Waste Briquette with Paper Waste Pulp as Binder Author/s: Qurrotin Ayunina Maulida Okta Arifianti, Azmi Alvian Gabriel, Syarif Hidayatulloh, Elita Fidiya Nugrahani, and Kuntum Khoiro Ummatin
11.20 - 11.40	Title: Mathematics Modeling And Performance Analysis Of The Heat Transfer On Vacuum Tube Collector Of Water Heater Application Author/s: Gunawan Nugroho and Lia Hamanda
11.40 - 12.00	Title: Optimization Photovoltaic's Parameters Using Particle Swarm Modified Firefly Algorithm (PSMFA) Author/s: Yesika Apsari and Imam Abadi
<b>12.00 - 13.00</b>	<b>Lunch</b>
<b>Parallel Session 1</b>	
<b>Topic:</b> Energy Efficiency Technology	
<b>Chair:</b> Dr. Ridho Hantoro, ST, MT	
13.00- 13.20	Title: Performance Study of Maximum Power Point Tracking (MPPT) Based on Type-2 Fuzzy Logic Controller on Active Dual Axis Solar Tracker Author/s: Imam Abadi, Qurrotul Uyuniyah and Dwi Nur Fitriyanah
13.20- 13.40	Title: Analysis of Oxy-Combustion and Carbon Capture Storage for Supercritical and Subcritical Coal Fired Power plant Author/s: Totok Ruki Biyanto, Hendra Cordova, Samuel Dian Permana Putra, Christopher Roberto, Titania Nur Bethiana and Ester Carolina
13.40- 14.00	Title: Geographic Information System Deposit Primary Carbon Of Mangrove Forest In Merauke District Author/s: Fransiskus Xaverius and Ruri Agung Wahyuono
14.00- 14.20	Title: Analysis of Thermal Management in Prismatic and Cylindrical Lithium Ion Batteries with Mass Flow Rate and Geometry of Cooling Plate Channel Variation for Cooling System Based on Computational Fluid Dynamics (CFD) Author/s: Nur Laila Hamidah, Laurien Merinda, Thalita Maysha Herninda, Ghina Kifayah Putri and Gunawan Nugroho
14.20- 14.40	Title: The Effect of Activated Carbon Addition on Woody Cutting Waste Briquette Combustion Quality Author/s: Qurrotin Ayunina Maulida Okta Arifianti, Ufafa Anggarini, Akbar Nafis, Elita Fidiya Nugrahani and Kuntum Khoiro Ummatin
<b>14.40- 15.10</b>	<b>Coffee Break</b>

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>Parallel Session 1</b>	
<b>Topic:</b> Energy Efficiency Technology	
<b>Chair:</b> Dr. Ridho Hantoro, ST, MT	
15.10- 15.30	Title: CO2 utilization as a catalyst in H2 production by electrolysis Author/s: Cecep E. Rustana, Humaira Ihda Rahmi and Deni Shidqi Khaerudini
15.30- 15.50	Title: Implementation of Flettner Rotor to Increase Energy Efficiency of Ship Propulsion Author/s: Akbar Rizqi Hartawan and Irfan Syarif Arief
15.50- 16.10	Title: Analysis and Evaluation of DC-DC Converter Variations Comparison Using MPPT Flower Pollination Algorithm (FPA) for Micro-grid Solar Panel Systems Author/s: Luthfansyah Mohammad and Suyanto



**AUN/SEED-Net**



**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

**13 November 2019**

<b>Parallel Session 2</b>	
<b>Topic:</b> Renewable Energy Integration, Smart Grid, and Energy Network	
<b>Chair:</b> Ir. Harsono Hadi, MT, PhD	
11.00 - 11.20	Title: Design Of Supervisory Control For Speed Control Of Wind Turbine Using Torque-Control Method Based On Buck Converter Author/s: Katherin Indriawati and Choirul Mufit
11.20 - 11.40	Title: Fuzzy Logic Controller Application for An Active Two-Axes Solar Tracking System Author/s: Imam Abadi, Chairul Imron, Nurika Brillianti and Muhammad Khamim Asy'Ari
11.40 - 12.00	Title: Optimization of Power Generation and Load Equipment Selection for Zero Energy House with Rooftop PV Integrated Author/s: Fahmy Miftahurrahman and Farizal
<b>12.00 - 13.00</b>	<b>Lunch</b>
<b>Parallel Session 2</b>	
<b>Topic:</b> Renewable Energy Integration, Smart Grid, and Energy Network	
<b>Chair:</b> Dr. Dhany Arifianto, ST, M.Eng	
13.00- 13.20	Title: The Performance of Rainfall Prediction above of Java Sea Level using Artificial Neural Network - Levenberg Author/s: Syamsul Arifin, Aulia Siti Aisjah, Kartika Tri W R and Erna Septyaningrum
13.20- 13.40	Title : The Wave Height Prediction in Java Sea using ANFIS and Supported by Android as User Interface Author : Syamsul Arifin, Aulia Siti Aisjah, Heru Susanto and Erna Septyaningrum
13.40- 14.00	Title: Temporary Performance Degradation of Photovoltaic Street Light in Kupang City, Nusa Tenggara Timur Province, Indonesia Author/s: Julius Tanesab, Rusman Sinaga, James Mauta, Adrianus Amheka and Edwin Hattu
14.00- 14.20	Title : Assessment and Optimization of Rooftop Hybrid PV/Wind Energy in Tropical Urban Area: Case Study in Jakarta and Surabaya, Indonesia Author/s : Ruri Agung Wahyuono, Miga Magenika Julian and Galih Bangga
14.20- 14.40	Title: The Identification of Microhydro Power Plants Potential in Irrigation Areas Based on Unmanned Air Vehicle (UAV) Image Processing Author/s: Masrur Alatas, Sri Budiastuti, Totok Gunawan and Prabang Setyono
<b>14.40- 15.10</b>	<b>Coffee Break</b>



"Empowering and Driving The Sustainable Future"

<b>Parallel Session 2</b>	
<b>Topic:</b> Renewable Energy Integration, Smart Grid, and Energy Network, Exploration of Renewable Energy Resource, Energy Efficiency Technology, Life Cycle Assessment	
<b>Chair:</b> Dr. Dhany Arifianto, ST, M.Eng	
15.10-15.30	Title: Effect Of EGR on Combustion and Emission Characteristics in Diesel-Bioethanol Dual-Fuel Engine Author/s: Y. H. Teoh and H.G. How
15.30-15.50	Title: An Assessment on the Nationwide Solid Waste-to-Energy Potential Model Development in the Philippines Author/s: Ronald Allan S. Co and Ruri Agung Wahyuono
15.50-16.10	Title: Development and Investigation of Performance Recovery Methods for Ethanol and Gasohol Fuels on Si Engine Driving A Portable Electric Generator in Rural Area Author/s: Han Lwin Soe, Mi Sandar Mon, Kyaw Myat Moe
16.10-16.30	Optimization of Operating Condition Biosurfactant Microbial Enhanced Oil Recovery Author/s: Hendra Cordova, Totok R. Biyanto, Matradji -, Syamsur Rijal, Eka W. Prasajo, Mestika A. Rahmah, Siti Sofiya, Atika Diyanasari and Hairul Huda
16.30-16.50	Shale Gas with CO2 Enhanced Gas Recovery and Carbon Sequestration Operation Condition Optimization Author/s: Totok Biyanto, Matradji, Hendra Cordova, Siti Sofiya, Eka Prasajo, Mestika Rahmah, Syamsur Rijal, Atika Diyanasari and Hairul Huda

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>13 November 2019</b>	
<b>Parallel Session 3</b>	
<b>Topic:</b> Life Cycle Assesment	
<b>Chair:</b> Dr. rer. nat. Ir. Aulia M.T. Nasution, MSc	
11.00 - 11.20	Title: Design of Solar PV Rooftop Model in Office Building as an Implementation Exercise and Evaluation on Energy Transition Program for Indonesia Author/s: Ahmad Agus Setiawan
11.20 - 11.40	Title: The Effect of Expanded Graphite on The Charging Time of Stearic Acid Phase Change Material in A Hot Water Tank Author/s: Khin Yu Sett, Pyae Phyoe Thant, Mi Sandar Mon
11.40 - 12.00	Title: Simplified Controller Design for Output Performance under Common Input Limitations with Generalized Integral Anti-windup for a Class of Processes Author/s: T. Benjanarasuth
<b>12.00 - 13.00</b>	<b>Lunch</b>
<b>Parallel Session 3</b>	
<b>Topic:</b> Life Cycle Assesment	
<b>Chair:</b> Dr. Suyanto, ST, MT	
13.00- 13.20	Title : Optimization of Hot Sulfur Soaking Water on Mechanical Properties and Physical Properties of Woven Bamboo Petung Strips (Dendrocalamus asper) Author/s : Rahab Bako and Ruri Agung Wahyuono
13.20- 13.40	Title: Cooling Efficiency underneath Solar Photovoltaic Panels Using Java Tea (Misai Kucing) Plants Author/s: M. Avazpour, S. U. Masuri, L. Kaniappan, M. E. Ya'acob
13.40- 14.00	Title: The use of Synthetic Pyrolysis Waste Plastic Diesel for Bangkok Diesel City Bus Author/s: Kanit Wattanavichien
14.00- 14.20	Title: Preliminary Study on Investigation of the Heat Stress Affecting the Labor Productivity, a Case Study: Garment Factory Phnom Penh Author/s: Kinnaleth VONGCHANH, Sarin CHAN
14.20- 14.40	Title : Optimization to Determine Maintenance Schedule of Process Equipment on Reactor Coolant System Author/s : Aminuddin Tejo Nugroho and Totok Ruki Biyanto
<b>14.40- 15.10</b>	<b>Coffee Break</b>

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>Parallel Session 3</b>	
<b>Topic:</b> Life Cycle Assesment	
<b>Chair:</b> Dr. Ir. Totok Soehartanto, DEA	
15.10- 15.30	Title: Electrodeposited Nickel-Iron Mixed Selenides For Energy Storage Application Author/s: Joseph R. Ortenero, Qiang Huang, Joey D. Ocon
15.30- 15.50	Title: Estimating The Solar Energy Potential Over Indonesia Region Using Daily Sunshine Duration Author/s: Yesi C Ulina
15.50- 16.10	Title: Life Cycle Assessment (LCA) Conventional Utilitization of Empty Fruit Bunch as Mulch In Plantation Areas Author/s: Dwi Rahayu, Budisantoso Wirjodirdjo and Wahyono Hadi



**AUN/SEED-Net**



**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>13 November 2019</b>	
<b>Parallel Session 4</b>	
<b>Topic:</b> Renewable Energy Integration, Smart Grid, and Energy Network	
<b>Chair:</b> Nur Laila Hamidah ST, MSc	
11.00 - 11.20	Title: Switching Weight Supervisory Neural Network For Non-Intrusive Load Monitoring (NILM) Author/s: Sigit Tri Atmaja and Abdul Halim
11.20 - 11.40	Title: Fault Tolerant Control (Ftc) Design On Regenerative Anti-Lock Braking System With Bldc For Electric Car Application With Faults On Actuator Author/s: Moh Kamalul Wafi, Katherin Indriawati and Bambang L Widjiantoro
11.40 - 12.00	Title: Design Of Fault Tolerant Control (Ftc) On Regenerative Anti-Lock Braking System With Bldc Motor Of Electric Car With Faults On Sensor Author/s: Moh Kamalul Wafi, Katherin Indriawati and Bambang Lelono Widjiantoro
<b>12.00 - 13.00</b>	<b>Lunch</b>
<b>Parallel Session 4</b>	
<b>Topic:</b> Renewable Energy Integration, Smart Grid, and Energy Network; Renewable Energy Conversion Technology	
<b>Chair:</b> Agus Muhammad Hatta, ST, MSi, PhD	
13.00- 13.20	Title: Decisio Support Sistem for Selecting House using Analythical Hierarchi Prosses Author/s: Reza Zubaedah and Ruri Agung Wahyuono
13.20- 13.40	Title : Design Passive Fault Tolerant Control (PFTC) for Speed Control of MS150 DC Motor System With Fault in Actuator and Sensor Author : Katherin Indriawati and Rahajeng Kurnianingtyas
13.40- 14.00	Title: Design Fuzzy-PSO Control for Hybrid Wave Energy Converter and Passive Solar Tracker Author/s: Muhammad Khamim Asy'Ari and Imam Abadi
14.00- 14.20	Title : Design Of Proportional Integral Control (PI) And Sliding Mode Control (Smc) On Anti-Lock Braking System (ABS) Author : Katherin Indriawati and Haryo Arif Wicaksono
14.20- 14.40	Title: Design of Adaptive Neuro-Fuzzy Inference Control Based One-Axis Solar Tracker on Battery Charging System Author/s: Imam Abadi, Tiara Oktavia Hardiana, Chairul Imron and Dwi Nur Fitriyanah
<b>14.40- 15.10</b>	<b>Coffee Break</b>

<b>Parallel Session 4</b>	
<b>Topic: Renewable Energy Conversion Technology</b>	
<b>Chair: Dr. Katherin Indriawati, ST, MT</b>	
15.10-15.30	Title: Tidal Wave Energy Large Scale Conversion Technology. Author/s: Md. Moniruzzaman
15.30-15.50	Title: Design and Implementation of Real-Time Monitoring System for Solar Power Plant in Surabaya Author/s: Ridho Hantoro, Erna Septyaningrum, Iwan Cony Setiadi, Mokhammad Fahmi Izdiharrudin, Pierre Damien Uwitije, Aryeshah Akbar and Naufal Hanif R.
15.50-16.10	Title: Performance Comparison of the Single Axis and Two-Axis Solar System Using ANFIS (Adaptive Neuro-Fuzzy Inference System) Controls Author/s: Imam Abadi, Choirul Imron, Ilham Amirul Akbar and Jauharotul Maknunah
16.10-16.30	Title: Simulation of Bottoming ORC for 20 MW Peaker Gas Turbine Author/s: I Made Astina, Anjar Pamungkas, Prihadi Setyo Darmanto

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>13 November 2019</b>	
<b>Parallel Session 5</b>	
<b>Topic:</b> Renewable Energy Conversion Technology	
<b>Chair:</b> Dr. Suyanto, ST, MT	
11.00 - 11.20	Title: Implementation of Image Sensor Based Solar Tracking System Using Particle Swarm Optimized Fuzzy Logic Controller (PSO-FLC) Author/s: Muhammad Jaza'Al Aufa and Imam Abadi
11.20 - 11.40	Title: Design Cascade Close Loop Control In Solar Tracker Based On PSO-Modified Fuzzy Algorithm Author/s: Nadia Aisyah and Imam Abadi
11.40 - 12.00	Title: Technical Analysis of the Application of Wind Turbine Technology in The Nganjuk, East Java Wind Farm Author/s: Kholid Fauzi, Ali Musyafa' and Muhammad Khamim Asy'Ari
<b>12.00 - 13.00</b>	<b>Lunch</b>
<b>Parallel Session 5</b>	
<b>Topic:</b> Renewable Energy Conversion Technology	
<b>Chair:</b> Moh Kamalul Wafi ST. MSc, DIC	
13.00- 13.20	Title: A New Pi-Equivalent Model of Wind Turbine Generating System for Load Flow Analysis Author/s: Rudy Gianto
13.20- 13.40	Title: CFD Simulation for Designing Mooring Bitts Position at Hull for Wave Energy Conversion (WEC) Author/s: Irfan Syarif Arief, I Ketut Aria Pria Utama, Ridho Hantoro and Juniarko Prananda
13.40- 14.00	Title: Design Of Horizontal Wind Rotor Turbine Blade With Geometry Variations And Number Of Blades Author/s: Harsono Hadi and Bagus Dharmawan Hadi
14.00- 14.20	Title: Enhancing Visible Light Absorption and Light Scattering in Dye-Sensitized Solar Cells through Addition of SiO <sub>2</sub> Microsheet Decorated with Au Nanoparticles Author/s: Devita Rachmat, Ra'Idah Syarifah, Intan Paramudita, Rahmat Hidayat, Rozalina Zakaria, Veinardi Suendo and Doty Dewi Risanti
14.20- 14.40	Title: Design of Control PI with MPPT for a Bidirectional Series Resonant DC – DC for Energy Solar Photovoltaic Applications Author/s: James Arredondo
<b>14.40- 15.10</b>	<b>Coffee Break</b>

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>Parallel Session 5</b>	
<b>Topic: Renewable Energy Conversion Technology</b>	
<b>Chair: Moh Kamalul Wafi ST. MSc,DIC</b>	
15.10-15.30	Title: Simulation, Stability of The H-bridge Low Power Dissipation for Photovoltaic Author/s: Vinsensius Letsoin and Ruri Agung Wahyuono
15.30-15.50	Title : Metamaterial Concentrator for Thermal Energy Harvester Author : Rapha Nikita Kaikatui and Ruri Agung Wahyuono
15.50-16.10	Title: Extraction and Optimization of Parameters in Photovoltaic Using Fuzzy-Ant Colony Optimization (ACO) Author/s: Ajeng Ayu Fatma Choirunisa and Imam Abadi
16.10-16.30	Title: Comparative study of efficiency and indoor air pollution of eleven cookstoves Author/s: Xayalak Vilaida, Sengratry Kythavone, Khamphone Nanthavong

**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

13 November 2019	
<b>Parallel Session 6</b>	
<b>Topic:</b> Exploration of Renewable Energy Resource	
<b>Chair:</b> Ruri Agung Wahyuono, ST, MT	
11.00 - 11.20	Title: The Study of Spray Ignition of Biodiesel, JP-5 and JP-8 fuels through Constant Volume Combustion Chamber Author/s: Akhmad Faruq Alhikami, Jia-En You, William Roberts and Wei-Cheng Wang
11.20 - 11.40	Title: Analysis of Affected Parameters to Hydrothermal Carbonization (HTC) Process Author/s: Ridho Hantoro, Erna Septyaningrum, Bachtiyar Budi Siswanto, Zakiyyatul Jibillah, Putri Lailatul Qodriyah and Mokhammad Fahmi Izdiharrudin
11.40 - 12.00	Title: Concept of electricity multiplication and generation Author/s: Shivam Kumar, Mansi Tyagi and Pradyumna Katara
<b>12.00 - 13.00</b>	<b>Lunch</b>
<b>Parallel Session 6</b>	
<b>Topic:</b> Renewable Energy Conversion Technology	
<b>Chair:</b> Dr. Ir. Totok Soehartanto, DEA	
13.00- 13.20	Title: Sea Water Distillation Using Solar Concentrator Author/s: Ibnu Kahfi Bachtiar
13.20- 13.40	Title: Prediction On Temperature Gradient Of Ambient Air Vaporizer With Respect To Wind Speed Author/s: Elok Anggrayni, Dhany Arifianto and Ihsan Aulia Rahman
13.40- 14.00	Title: Design Soft Sensor to Estimate Contain Product of NPK Fertilizer Author/s: Denni Firmansyah and Katherin Indriawati
14.00- 14.20	Title: Forecast of solar power: a key to optimal power management system for power network stability in Mauritius under uncertain weather conditions Author/s: Dhirajsing Rughoo
14.20- 14.40	Title: Design Mobile Single Axis Solar Tracker (MSAST) Based On Adaptive Neuro Fuzzy Control (ANFUC) Author/s: Zulfa A. Labiba and Imam Abadi
<b>14.40- 15.10</b>	<b>Coffee Break</b>



**INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGY RESEARCH AND  
CHALLENGE 2019**

**THE 12TH REGIONAL CONFERENCE  
ON ENERGY ENGINEERING**

"Empowering and Driving The Sustainable Future"

<b>Parallel Session 6</b>	
<b>Topic:</b> Renewable Energy Technology	
<b>Chair:</b> Nur Laila Hamidah ST, MSc	
15.10-15.30	Title: Performance Analysis Of Dual Axis Solar Tracker Based On Fuzzy Pid Controller In Street Light Author/s: Wahyu Zulfikar Putra and Imam Abadi
15.30-15.50	Title : Design and Simulation of Permanent Magnet Synchronous Generators for Small Scale Wind Power Plants Author : Amir Hamzah, Suwitno Suwitno, Joni Irfan, Iwan Kurniawan and Haji Gussyafri
15.50-16.10	Title: Control Design Based on Plantwide Control Concept for Joule-Thomson Valve Cryogenic Gas Separation Author/s: Hendra Cordova, Gideon Saputra Nainggolan, Muhammad Andro Purnomo, Mohammad Okky Mabruhi and Totok Ruki Biyanto



**AUN/SEED-Net**

