

# **2019 IEEE International Conference on Innovative Research and Development (ICIRD 2019)**

**Jakarta, Indonesia  
28 – 30 June 2019**



**IEEE Catalog Number: CFP19P33-POD  
ISBN: 978-1-7281-2826-9**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

|                         |                   |
|-------------------------|-------------------|
| IEEE Catalog Number:    | CFP19P33-POD      |
| ISBN (Print-On-Demand): | 978-1-7281-2826-9 |
| ISBN (Online):          | 978-1-7281-2825-2 |

**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  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# Table of Contents

## 2019 ICIRD UI, Jakarta

| PG # | Paper Title   | Paper ID |
|------|---|----------|
| N/A  | Synthesis of Cu-doped TiO <sub>2</sub> -SiO <sub>2</sub> Nanocomposite and Its Antibacterial Activity                               | 1        |
| N/A  | Technical and Economical Feasibility Utilization of Exhaust Gas from Oil Wells Venting System in Y Offshore Platform                | 10       |
| 1    | Semi Portable Biogas Power Plant using Engine Generator Set for Disaster Area   | 11       |
| 7    | Modeling Vertical Roller Mill Raw Meal Residue by Implementing Neural Network   | 15       |
| N/A  | Literature Review Related Causal Factor Risk of Delay at Construction Project: Meta-Analysis  | 16       |
| 13   | Strategy of National Fiber Optic Backbone Network Utilization Enhancement in Rural Area of Indonesia                                | 18       |
| N/A  | Cost Overrun Risk Factors in Jakarta MRT Project Phase 1: What Does Literature Tell Us?   | 20       |
| 21   | Internet of Things Platform to Monitoring & Controlling Project Remotely: A Qualitative Analysis                                    | 23       |
| N/A  | Some Aspects of Plasma-Driven Catalysis in Triglyceride Conversion Technology into Diesel Engine Fuel Using Cold Plasma DBD Reactor | 24       |
| 26   | Control of Electronic Devices Using Neural Network Based Sundanese Speech Recognition   | 25       |
| 32   | Modeling and Designing Direct Inverse Control Using Back-propagation Neural Network for Skid Steering Boat Model                    | 26       |
| 37   | On Developing a Network Scheduling Simulator: IR-TASA Visualization   | 27       |
| N/A  | Effect of Hardness Natural Rubber to KNF 700 Performance  | 29       |
| N/A  | Performance Evaluation Of NILM Data Pre-Processing For Naive Bayes Classifier   | 31       |
| 42   | Efficient Power and Routing in UAV Communication Networks   | 32       |
| 48   | Improving Loss of Load Probability through Biomass Power Plant Integration : A Case Study in Tanjung Balai Karimun                  | 33       |
| 53   | Microgrid Design for Sebira Island in Kepulauan Seribu with Technical and Economic Analysis   | 36       |
| N/A  | An Analytical Hierarchy Process Assessment of The Environmental Management System on Higher Education Institution in Indonesia      | 38       |
| N/A  | Scheduling The Arrival of Raw Material Suppliers Using Truck Turnaround Time Method in FMCG Company                                 | 39       |
| 57   | Measuring Quality of Service (QoS) and Quality of Experience (QoE) on 5G Technology: A Review                                       | 40       |
| 63   | Economical Analysis Optimization of East Sumba Microgrids   | 41       |
| 67   | An S-bend based Optical Directional Coupler Using GaN Semiconductor   | 42       |
| 71   | Design of Single Input Multiple Output Full Bridges DC-DC Converters For Personal Computer Power Supply                             | 43       |
| N/A  | Failure analysis of superheater tubes in a circulating fluidized bed boiler   | 44       |
| 76   | Optimization of Propane Reliquefaction Cycle in LPG Plant   | 45       |

|     |  |    |
|-----|--|----|
| 82  | Disturbance Characteristics in Frequency 9 kHz-150 kHz on Photovoltaic System with RLC Load  | 46 |
| 85  | Comprehensive ICT Framework for Educational Institutes of Kuwait: An Empirical Study   | 47 |
| N/A | Causal Factors of Change Order and Variation Order in Construction Project: A Literature Review  | 50 |
| 91  | Economic Analysis of Renewable Energy Power Plant in Sumatra, Indonesia  | 53 |
| N/A | Potential Implementation of A2G Technology for IFC Services on Flights in Indonesia  | 55 |
| 95  | Installation of Hybrid Power System in Ro-Ro Passenger Vessel  | 59 |
| 98  | Prediction of Power Transformers Lifetime Using Thermal Modeling Analysis  | 60 |
| 104 | Economic Load Dispatch Optimization of Thermal Power Plant Based on Merit Order and Bat Algorithm  | 62 |
| 109 | Optimal Degree Distribution with Minimal Stopping Sets in Coded Random Access for Massive IoT Communications                                     | 63 |
| 114 | Rectangular Microstrip Array Antenna for Enhancing Terahertz Imaging Quality   | 64 |
| N/A | Optimization of Tugboat as Lifting Operation Support Vessel in Indonesia's Upstream Oil and Gas Terminals using Differential Evolution Algorithm | 65 |
| N/A | Implementation of DMAIC Six Sigma to Reduces Defects in Slab Construction Process: A Case Study Of Highrise XYZ Building Construction            | 66 |
| N/A | Antifungal Test of Bee Propolis Microcapsule Tetragonula spp. With Maltodextrins and Gum Arab Coating  | 68 |
| 118 | Voltage Stability Improvement Using Load Shedding and Static VAR Compensator (SVC): Study Case of Senayan-Sambas Power System                    | 69 |
| N/A | Study of Areca Flower Extract as Green Corrosion Inhibitor on Steel API 5L Gr X60 in 1 M HCl Solution  | 70 |
| N/A | Medical Image Analysis using Deep Learning: A Review   | 71 |
| N/A | Polyvinyl Alcohol Hydrogel Coated by Polylactico-glycolic Acid and Polylactic Acid for Extended Release of Pyrazinamide                          | 72 |
| 123 | Study on Short Circuit Current Contribution after Photovoltaic Solar Plant Integration in Lombok's Distribution Network                          | 73 |
| N/A | Time and Cost Optimization of a Nuclear Reactor Project Using Combined-Method  | 74 |
| 128 | A Method to Improve Frequency Stability Using Location-based Load Shedding: Study Case of Senayan-Sambas Power System                            | 75 |
| 133 | Planar Microstrip Array Antenna with Rectangular Configuration Fed with Chebyshev Power Distribution for C-Band Satellite Application            | 76 |
| 137 | Optimum Location for PV Implementation Based on Load-flow Analysis Using Newton-Raphson Method for Lombok Electrical Network                     | 77 |
| N/A | Effect of curing duration and environment on mechanical properties and bonding strength of composite-metal                                       | 78 |
| 142 | Evaluation of The Implementation of Fixed Broadband Access Provision Policy in Indonesia   | 80 |
| 148 | M2M Connectivity and Business Strategy Analysis: Case Study of PT XYZ in Jabodetabek Area  | 81 |
| 154 | Analysis of Regional Electricity Supply Planning based on Reliability, Costs and Emissions (Case Study of East Kalimantan Region)                | 82 |

|     |  |     |
|-----|--|-----|
| N/A | Contagion Analysis of Asian Financial Conditions Towards Indonesian LNG Price as an Investment Strategy                      | 83  |
| N/A | Development of Rainwater Utilization Scheme as an Alternative of Water Source at a Hotel : A Case Study in Jakarta           | 84  |
| N/A | Impact of Design for Material Value Conservation on Flexible Plastic Packaging towards the Life Cycle of Plastic Materials   | 85  |
| 161 | NB-IoT Planning in Jakarta Area for Smart Meter Utilities  | 86  |
| N/A | Universitas Indonesia Welding Center Sub Sea Personel Qualification Gap Analysis   | 87  |
| 167 | Prediction of Electricity Load Growth of Tangerang City using SIMPLE-E   | 88  |
| 173 | Molecular Docking Study of Anti-Inflammatory Biomarkers in Sulawesi Propolis as Potent Inhibitors of Cyclooxygenase-2        | 89  |
| N/A | Question Answering Systems: A Survey and classification  | 90  |
| N/A | Newly Installed Subsea Pipeline Potential Failure Analysis Using Risk FMEA Method  | 91  |
| N/A | Newly Installed Subsea Pipeline Potential Failure Analysis Using Risk FMEA Method  | 92  |
| 177 | Municipal Solid Waste to Electricity Using Anaerobic Digestion and Incineration Conversion Technologies: A Comparative Study | 93  |
| N/A | Development of Greywater Utilization Scheme as an Alternative of Water Source at a Hotel: A Case Study in Jakarta            | 95  |
| 183 | Quality Analysis and Lifetime Prediction of SF6 in High Voltage Gas Insulated Switchgear (GIS) at CSW Bulungan               | 98  |
| 187 | Analysis of Discharge Rate and Ambient Temperature Effects on Lead Acid Battery Capacity                                     | 99  |
| N/A | Optimization of Point-to-Point CO2 Pipeline Transportation in Carbon Capture, Utilization and Storage (CCUS) Application     | 100 |
| N/A | Rainwater Harvesting Scheme as Additional Source of Clean Water : A Case Study of an Apartment in Jakarta                    | 101 |
| 192 | Mitigation of Voltage Sag Caused by Unbalanced Load by Using DFT Controlled DVR  | 104 |
| 197 | Design of Low-Cost Energy Metering Device for Direct Load Control and Air Conditioning Energy Monitoring                     | 105 |
| N/A | Application of Risk Matrices and Analytic Hierarchy Process (AHP) in Risk Analysis of Gas Turbine Power Plant Maintenance    | 106 |
| 201 | Information Technology (IT) Based Intervention Among Individuals with ASD (Autism Spectrum Disorder): A Review               | 107 |
| 204 | Digital Literacy and the Attitude of Educators Towards MOOC Platform in GCC Countries  | 108 |
| 210 | Calibration of 100 A/50 mA Instrument Current Transformer Energy Meter Using Bisection Method                                | 109 |
| 216 | Solar Irradiance Estimation at Certain Location Using Artificial Neural Network and ASHRAE Clear-Sky Model                   | 110 |
| 221 | Performance Implementation of Multi-access Edge Computing at Indonesia Telco Operator  | 112 |
| 226 | LoRa Network Planning for Smart Meter Utilities in Jakarta and Tangerang Area  | 113 |

|     |   |     |
|-----|---|-----|
| N/A | Valuation of Indonesian Biodiesel Formula Prices By The Characteristics-Related Palm-Based Biodiesel' Pricing System                | 116 |
| 232 | Compressive Sensing Image Reconstruction With Total Variation And $l_{2,1}$ Norm For Microwave Imaging                              | 117 |
| 236 | Performance Analysis of Solar-Powered Submersible DC Water Pump   | 118 |
| N/A | Partial Hydrogenation of Polyunsaturated FAMES in a Trickle Bed Reactor   | 119 |
| 241 | High-Gain Rectangular-Fins Shaped Balanced Antipodal Vivaldi Antenna Array Extended by Dielectric for wide-band Imaging Application | 120 |
| 247 | An Implementation of Electroencephalogram Signals Acquisition to Control Manipulator through Brain Computer Interface               | 121 |
| N/A | Mathematical Investigation of Upgrading Biodiesel to H-FAME via Partial Hydrogenation Process in Slurry Bubble Column Reactor       | 123 |
| 253 | Street Lightning Poles Top Solar Power Generation for Typical Housing Area in Kuwait  | 122 |