2016 International Conference on **Sustainable Energy Engineering** and Application (ICSEEA 2016)

Jakarta, Indonesia 3-5 October 2016



IEEE Catalog Number: CFP16AAF-POD ISBN:

978-1-5090-2900-6

Copyright \odot 2016 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:
 CFP16AAF-POD

 ISBN (Print-On-Demand):
 978-1-5090-2500-6

 ISBN (Online):
 978-1-5090-2899-3

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 Web: www.proceedings.com



Contents

1P15S Lithium Battery Pack: Aluminum 5052-0 Strength of Material Analysis and Optimization Sunarto Kaleg, Amin	1
Optimization of Heat Flux Distribution on Dual Parabolic Dish for Stirling Engine Applications Asepta Surya Wardhana, Heri Suryoatmojo, Mochamad Ashari	6
Residential Grid Connected Solar Inverter using Fuzzy Logic DC-DC Converter A. Aryal, A. Hellany, J. Rizk, M. Nagrial	12
Modeling and Static Analysis of a Connecting Rod in Range Extender Engine Suherman, Bambang Wahono, Achmad Praptijanto, Widodo Budi Santoso, Arifin Nur	17
Effect of Exhaust Gas Recirculation on Homogeneous Charge Compression Ignition Combustion Model in Diesel Engine Achmad Praptijanto, Widodo Budi Santoso, Arifin Nur, Bambang Wahono Suherman	22
A Development of Smart Metering Infrastructure for Electric Vehicle Charging Point Aam Muharam, Mulia Pratama, Kristian Ismail, Sunarto Kaleg, Muhammad Redho Kurnia, Abdul Hapid	27
A Study on Wireless Power Transfer Using Tesla Coil Technique Pusparini Dewi Abd Aziz, Ahmad Lukhfhy Abd Razak, Mohd Izhar Abu Bakar, Nulida Ab. Aziz	34
Decentralized Low-Cost Flywheel Energy Storage for Photovoltaic Systems A. Buchroithner, A. Haan, R.Preßmair, M. Bader, B. Schweighofer, H. Wegleiter, H. Edtmayer	41
Performance analysis of photovoltaic modules in Baiturrahman Islamic Boarding School Rakhmad Pramana, Adi Santoso, Rudi Darussalam, Ahmad Rajani	50
Adaptive Neuro-Fuzzy Inference System Identification for the Dynamics of the AR.Drone Quadcopter Fendy Santoso, Matthew A. Garratt, Sreenatha G. Anavatti	55
Performance Analysis of Updraft Gasifier Muhammed Amin, W. A. M. K. P. Wickramaarachchi, Mahinsasa Narayana	61
Future Japan Power Generation Sector by Introducing Hydrogen plant with 80% CO2 emission reduction target: A preliminary analysis Nugroho Agung Pambudi, Kenshi Itaoka, Natsuki Yamakawa, Atsushi Kurosawa	66

Tow Eye Failure Analysis Using Energy Strain Release	
Aditya Sukma Nugraha, Budi Prawara, Erie Martides, Budi Priyono	70
Analysis of electric wheelchair passenger comfort with a half car model approach Muhammad Fathul Hikmawan, Aditya Sukma Nugraha	76
Energy and exergy assessment of organic Rankine cycle electricity generation with hot spring as the heat source in Aceh, Indonesia Nur Rohmah, Ghalya Pikra, Rakhmad Pramana, Andri Purwanto	81
Dual-axis Solar Tracking System: A Combined Astronomical Estimation and Visual Feedback Midriem Mirdanies, Roni Permana Saputra	88
Real-Time Measurement of Grid Connected Solar Panels Based on Wireless Sensors Network Syafii, Roni Putra, Muhammad Ilhamdi Rusydi, Muhammad Hadi Putra	95
Two Different Design Methods and Simulations of Axial Flow Hydraulic Turbine Runner *Qidun Soesanto**	100
Potential of the engine-driven cogeneration system in a palm oil mill in Thailand Pisan Booneimsri, Kuskana Kubaha, Chullapong Chullabodhi	107
Waste heat potential assessment of the engine based power plant in Thai palm oil mills Pisan Booneimsri, Kuskana Kubaha, Chullapong Chullabodhi	116
Biodiesel Production with Continuous Processing and Direct Ultrasonic Assisted Widayat, Hantoro Satriadi, Fany Choirudin, Ayu Fitriana, Berkah Fajar Tamtomo Kiono, Syaiful	122
Biodiesel Production from Jatropha curcas Oil and Palm Oil by Using Undirect Ultrasonic Assisted Aji Baharsyah, Supriyandi, Hantoro Satriadi, Widayat	127