

International Conference on Alternative Fuels and Electric Vehicles 2021 (ICAFEV 2021)

IOP Conference Series: Earth and Environmental Science
Volume 1042

Online
9-10 December 2021

ISBN: 978-1-7138-5820-1
ISSN: 1755-1307

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

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
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Preface: International Conference on Alternative Fuels and Electric Vehicles 2021 (ICAFEV 2021)	
<i>Kumar D. Sapate, Sandip A. Kale</i>	
Peer Review Statement	
Influence of Different Biodiesel Fuels on the PCCI-DI Combustion Concept for Constant Speed Genset Application	1
<i>Hemant A Kinikar, A B Kanasepatil, S S Thipse</i>	
Investigation of Mahua, Pongamia and Waste Cooking Oil Blends as Biodiesel Properties.....	14
<i>Malati Chanagond, Prashant Puthani, Ramesh Jeeragal, Suresh Doddi</i>	
Response Surface Methodology to Predict the Effects of Graphene Nanoplatelets Addition to Diesel Engine Performance	23
<i>Sarbani Daud, Mohd Adnin Hamidi, Rizalman Mamat</i>	
Influence of Simarouba Glauca (Laxmi Taru) Biodiesel on Engine Performance and Emissions of Conventional Compression Ignition Engine.....	31
<i>Prashant Puthani, Ramesh Jeeragal, Amaresha T Patil, Malati Chanagond</i>	
Characterization of Chia Seed Oil Methyl Ester as an Alternate Fuel for Diesel Engine.....	41
<i>S Manjunath, Ramakrishna N Hedge</i>	
Design and Fabrication of a Partial Flow Dilution Tunnel for Particulate Mass Sampling in an Ethanol Blended CI Engine	48
<i>Atul Kumar, Tomesh Kumar Sahu, Pravesh Chandra Shukla</i>	
Studies on the Catalytic Hydrothermal Liquefaction of Sugarcane Bagasse to Bio-Oil, Over Cobalt Oxide	55
<i>Gopalakrishnan Govindasamy, Rohit Sharma, Sunu Subramanian</i>	
Bio-Oil by the Hydrothermal Liquefaction of Municipal Sewage Sludge Using Hierarchical Fe-Co-ZSM-5 Catalysts	61
<i>Gopalakrishnan Govindasamy, Praveen Kumar J, Ramatejaswi Pasupula</i>	
Environmentally Balanced Preconditions for Use of Logging Residues in Forests of Ukrainian Carpathians for Energy Production	69
<i>R Vasylyshyn, Lakyda, O Soshenskyi, M Lakyda, O Melnyk, V Shusarchuk</i>	
Energy Potential of Woody Biomass in Ukraine’s Forests and Prospects for Its Utilization as an Alternative Energy Source.....	75
<i>R Vasylyshyn, I Lakyda, Yu Yurchuk, M Lakyda, O Melnyk, R Bondarchuk</i>	
The Performance Analysis of Modified Generic Model for Lithium-Ion Batteries.....	81
<i>Shubha Rao K, Karanam Vasudha</i>	
An Overview of Lithium-Ion Batteries for Electric Mobility and Energy Storage Applications	89
<i>Ganesh Sankaran, S. Venkatesan</i>	
Exploring the State of Solar Photovoltaic Decentralization in Ghana: Trends and Success Factors.....	100
<i>David M Sackey, De-Graft Owusu-Manu, Amevi Acakpovi, Frank K Appiah, David J Edwards, Reza M Hosseini</i>	

Optimal Sizing and Techno-Economic Analysis of a Hybrid Solar PV/Wind/Diesel Generator System	112
<i>Godfred Tay, Amevi Acakpovi, Patrick Adjei, George K. Aggrey, Robert Sowah, Daniel Kofi, Maxwell Afonope, Mustapha Sulley</i>	
Numerical Analysis Using SolTrace Software to Determine the Size and Position of a Central Receiver for Ganged Heliostat System.....	127
<i>Lalit Jadhav, Prem Gadiya, Jwalandhar Girnar, Harshvardhan Bhusal, Prakash Gadhe</i>	
Techno-Economic Assessment of Grid Connected Solar PV/Wind Hybrid System.....	142
<i>Mustapha Sulley, Amevi Acakpovi, Patrick Adjei, David M. Sackey, Felix Offei, Maxwell Afonope, Daniel Kofi, Godfred Tay</i>	
Synthesis of ZnO Nanoparticles Through a Simple Wet Chemical Precipitation Method	157
<i>Gem Taka, T D Das</i>	
Innovative Design of Grid Connected Solar/Diesel Hybrid System Using RETScreen Software	163
<i>Daniel Kofi, Amevi Acakpovi, Patrick Adjei, Robert Sowah, George K. Aggrey, Godfred Tay, Mustapha Sulley, Maxwell Afonope</i>	
Economic-Environmental Impacts on Reduction of Energy Consumption in Technical High Schools During the COVID-19 Pandemic: Case of Manzanillo, Mexico	173
<i>V D Cuevas-Rodríguez, G M Rodríguez-Torres, M Morales-Máximo, L B López-Sosa</i>	

Author Index