

# **2021 IEEE International Conference on Power, Electrical, Electronic and Industrial Applications (PEEIACON 2021)**

**Dhaka, Bangladesh  
3-4 December 2021**



**IEEE Catalog Number: CFP21V59-POD  
ISBN: 978-1-6654-7867-0**

**Copyright © 2021 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:    | CFP21V59-POD      |
| ISBN (Print-On-Demand): | 978-1-6654-7867-0 |
| ISBN (Online):          | 978-1-6654-7866-3 |

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

CURRAN ASSOCIATES INC.  
**proceedings**  
.com



## 2021 IEEE International Conference on Power, Electrical, Electronic and Industrial Applications (PEEIACON)

3-4 Dec, 2021

### Contents

| Paper ID | Paper Title   | Author Names   | Page No. |
|----------|---|--|----------|
| 1        | IoT and Solar Based Smart Farming Technique   | Roksana Akter; Abu Shufian; Md. Mominur Rahman; Riadul Islam; Shaharier Kabir; Md. Jawad-Al-Mursalin Hoque         | 1-4      |
| 6        | <i>Generating a Cost Effective Solar Study Lamp and Solar Home Solution using Android Application</i>   | Kalaiselvi Aramugam; Mohamed Mahmoud Ahmed; M.K.A.Ahamed Khan; Manicam Ramaswamy                                   | 5-9      |
| 7        | Simulation Research on Vehicle Handling and Stability Enhancement Based on PID Control Technology       | Abdussalam Ali Ahmed; Alforjani Ali Ahmed; Ahmed Salem Daw Alarga  | 10-15    |
| 8        | Voltage Profile Improvement by using DGs in Power System Resilient Framework                            | Manikanchan Mandal; Dipanjan Bose; Chandan Kumar Chanda  | 16-20    |
| 9        | Stockwell Transform & Data Mining based method for Fault detection and classification in PV Array       | Chidurala Saiprakash; S Ramana Kumar Joga; Alivarani Mohapatra; Pampa Sinha; Byamakesh Nayak; Manoj Kumar Maharana | 21-24    |
| 10       | Effects of channel length and oxide layer modulation on the performance of Ga2O3 MOSFET                 | Tanjida Rahman; M. Mofazzal Hossain; Mirza Rasheduzzaman   | 25-28    |
| 12       | Load Frequency Control of Hybrid Power System with Water Evaporation Algorithm Optimized PID Controller | Subbi Naidu Bora ; Alivarani Mohapatra; Srikanta Mohapatra   | 29-31    |
| 13       | A MATLAB Simulated Design of an   | Md. Samiul Islam Borno; Khadija Yeasmin Fariya; Md. Sayeduzzaman; S.M. Imrat Rahman                                | 32-36    |



## 2021 IEEE International Conference on Power, Electrical, Electronic and Industrial Applications (PEEIACON)

3-4 Dec, 2021

| EnergyEfficient Solar-Powered Smart Kitchen |  |   |       |
|---|--|---|-------|
| <b>14</b>                                   | Robust Backstepping<br>Integral Terminal Sliding<br>Mode<br>Controller for a Grid-Tied<br>Solar PV Unit  | Chinmoy Roy; Tushar Kanti Roy; Liton<br>Chandra Paul  | 37-40 |
| <b>18</b>                                   | Solar Powered Automatic<br>Irrigation System   | Md. Farhad Ahmmed; Abu Shufian; Riadul<br>Islam; Md. Mominur Rahman; Md. Jawad-Al-<br>Mursalin Hoque; and Shaharier Kabir | 41-44 |
| <b>25</b>                                   | Design of a Robust Integral<br>Sliding Mode<br>Controller Using the<br>Continuous Function-Based<br>Fast Power Reaching Law<br>for DC-DC Boost<br>Converters in Fuel Cells<br>Applications | F. Akter; T.K.Roy   | 45-48 |
| <b>27</b>                                   | Variable Power Reaching<br>Law-Sliding Mode<br>Controllers for Partial<br>Linearized SMIB Power<br>Systems   | M. M. Khatun; T. K. Roy; F. Faria; T. Haque; T.<br>Sarkar; A. K. Hore   | 49-52 |
| <b>30</b>                                   | Machine learning based<br>solar energy forecasting<br>and wind-solar based hybrid<br>grid arrangement at<br>Patenga coastal area,<br>Bangladesh  | Pollen Barua; Ratul Barua   | 53-57 |
| <b>31</b>                                   | High PV Generation<br>Penetration on Power<br>System<br>Inertia: Challenges and<br>Solutions   | Md. Junaed Al-Hossain; Md. Zakir Hasan  | 58-62 |
| <b>32</b>                                   | A Critical Evaluation and<br>Experimental<br>Verification of Stator Inter-<br>turn Short-Circuit Fault   | SSSR Sarathbabu Duvvuri;  | 63-66 |



## 2021 IEEE International Conference on Power, Electrical, Electronic and Industrial Applications (PEEIACON)

3-4 Dec, 2021

|    |  |   |       |
|----|--|---|-------|
|    | Detection and Diagnosis in<br>3- $\Phi$ Induction Motors   |   |       |
| 33 | Realistic Behavior of<br>Electrical Faults in<br>3- $\Phi$ Induction Motor                           | SSSR Sarathbabu Duvvuri;  | 67-70 |
| 36 | Analysis of Distributed<br>Energy Aggregations based<br>on Cyber-Physical-Social<br>Systems Modeling | <b>John B. Ocampo, Rajarshi Roychowdhury,<br/>Balaji Guddanti, Mahesh S. Illindala;<br/>Akundy Vyas Anirudh</b> | 71-74 |
| 38 | A Load Shedding<br>Methodology Using Monte<br>Carlo<br>Simulation in a Renewable<br>Integrated Grid  | Fiaz Hossain; Farhan Tahmid; Atik Jawad;<br>Nahid-Al-Masood   | 75-78 |
| 39 | An Analytical Method to<br>Determine the Maximum<br>Wind Power Penetration<br>Level                  | Iftexharul Islam Emon; Asikur Rahman Jowel;<br>Atik Jawad; Nahid-Al-Masood                                      | 79-82 |
| 42 | TIME CONTROLLED<br>POWER SUPPLY DESIGN<br>FOR MAGNETICALLY<br>IMPELLED ARC BUTT<br>WELDING           | Mukti Chaturvedi; Sharanabasavaraj; Arungalai<br>Vendan S   | 83-86 |