

2023 International Conference on Energy, Power, Environment, Control, and Computing (ICEPECC 2023)

**Gujrat, Pakistan
8-9 March 2023**



**IEEE Catalog Number: CFP23DP7-POD
ISBN: 978-1-6654-7602-7**

**Copyright © 2023 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:	CFP23DP7-POD
ISBN (Print-On-Demand):	978-1-6654-7602-7
ISBN (Online):	978-1-6654-7601-0

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Numerical Simulation and Optimization of CsSnI₃ Perovskite PV Cell Using SCAPS-1D.....	18
Alnur Khan Missiom, Riaz Ahammed, Tasmin Kamal Tulka and M. Mofazzal Hossain.	
Rare Earth Ion Doped Zinc Oxide as a Viable Photoanode Material for Dye-Sensitized Solar Cells: Optoelectrical and Wettability Aspects.....	23
Altamash Shabbir, Zuhair Subhani Khan, Hina Pervaiz and Hafiz Muhammad Haseeb	
Performance Enhancement of Sodium Sulfate Decahydrate for Low-Temperature Thermal Energy Storage System.....	29
Salman Khan, Muhammad Ali Kamran, Massab Junaid, Syed Waqas Ali Shah and Rizwan Mehmood Gul	
Experimental Investigation of the Vibration Transmission of a Motorbike (CD-70) to Hands and Back.....	35
Muhammad Ahmed Rabbani, Salman Khan and Massab Junaid	
Numerical and Experimental Analysis of Second-generation Biodiesel for the Emission Reduction and Sustainable Environment Applications.....	41
Luqman Razzaq, Usama Ishtiaq, Sajjad Miran, Tahir Jauhar, Samr-UI Hasnain and Yasir Hussain	
Effect of Air, TIM and PCM Based Window on Indoor Temperature.....	47
Ubaid Ur Rehman, Muzaffar Ali, Muhammad Ashiq, Muhammad Ahmad Rafi, Usama Malik, Muhammad Musa	
Comparative Analysis of Thin Reflex Airfoil for Micro Air Vehicles.....	51
Hamid Iftikhar Qureshi, Muhammad Umar Malkana, Sajjad Miran, Ahmed Iftikhar Qureshi, Tayybah Kiren, Waseem Arif and Muhammad Tamoor	
Investigation of Optimum Phase Change Material for PV Panels in Malaysian Climatic Conditions.....	57
Asif Durez, Muzaffar Ali and Sudhakar Kumarasamy	
Performance Enhancement of a Peltier Device as a Cooling Source.....	62
Erum Iftikhar, Bilal Hassan Bhatti, Fawad Mehboob, Atif Muzaffar, Muhammad Hasnain Tariq and Taqi Ahmad Cheema	
Designing a Solid Works Model for Low-Cost Air Purifier; Effective for Indoor Air Quality Control.....	66
Syeda Rida Zehra Hamdani, Rahat Ehsan, Sara Rehman, Muhammad Zia Ur Rehman, Faisal Amin, Zohaib Mushtaq and Muhammad Farrukh Qureshi	
Optimal Selection of Candidate Wind Farms Capacity for Generation Expansion Planning...	72
Maliha Shah, Kashif Imran, Hafsa Ahmad, Muhammad Anas and Mahum Jamil	
Experimental Determination of Thermal Conductivity of CNTs-H₂O based Nanofluids.....	77
Farooq Khan, Ramzan Abdul Karim, Muhammad Hasnain Tariq, Taqi Ahmad Cheema and Hafiz Muhammad Rizwan	
Voltage Profile Enhancement of an IEEE 14 Bus System by using SVC.....	81
Mashama Noor, Shariq Shaikh, Muhammad Tayyab Tariq and Fiza Nasir	
Ad-Hoc Microgrids Planning for Rural Communities Under Natural Disasters.....	87
Majid Ali, Juan C. Vasquez, Josep M. Guerrero, Yajuan Guan, Jorge De La Cruz and Muhammad Javaid Aslam	
Design and Implementation of Prepaid Energy Meter with Home Automation and Peak Load Management with Android Application.....	92
Zainab Mubeen Tahir, Tayyab Tahir, Talha Arfan, Atif Asim, Muhammad Fahad and Shoaib Rauf	
Which Simulator to Choose for Next Generation Wireless Network Simulations? NS-3 or OMNeT++.....	98
Sohaib Manzoor, Mahak Manzoor, Hira Manzoor, Durr E Adan and Muhammad Akbar Kayani	

Design and Development of Net-Metering based Energy Meter.....	103
Muhammad Shoaib Saleem, Ammar Asad, Ussama Muwahid, Ahmed Raza and Aun Haider	
Evaluation of SEPIC-Boost Converter’s Stability Under Constant and Chaotic Input Conditions.....	109
Mohd Nadzri Mamat, Mohamad Nazir Abdullah, Suardi Kaharuddin and Dahaman Ishak	
Seasonal Impact on the Storage Capacity Sizing in a Renewable Energy System Under the Condition of Safe Operation.....	114
Saher Javaid, Yuto Lim and Yasuo Tan	
Optimized Sizing and Analysis of Grid-Tied Renewable Energy Based EV Charging System..	120
Ghulam Murtaza Bahalkani, Nayyar Hussain Mirjat, Shoaib Ahmed Khattri and Rajib Ali	
Design of 120 GHz Balun for 5G Transceiver Chips.....	125
Waseem Abbas, Zubair Mehmood, Jehanzeb Irshad and Muhammad Wasif	
A Novel Ultra-wideband Fractal Antenna with Defected Ground Structure for W-band Applications.....	129
Talha Shahid Alvi, Muhammad Ali, Zubair Mehmood and Muhammad Qasim Mehmood	
Evaluation and Characterization of Power Generation Trainer EM-PRT-EG3ϕ for Laboratory Education.....	133
Mian Rizwan, Ciwei Gao, Muhammad Wasif, Muhammad Waseem, Muhammad Usama and Asad Muneer	
Comparison of Dielectric Properties of Treated Shea Nut Oil with Mineral Oil Under AC Voltage.....	139
Jonathan Obande O., Sabo Ibrahim B Kudu and Mohamad Kamarol Mohd Jamil	
Three-phase MLI with Reduced Number of Switches and Hybrid Optimized Switching.....	143
Taha Hussein and Dahaman Ishak	
Non-Isolated LED Driver For Industrial Lighting Applications.....	149
Maryam Irshad, Shahid Iqbal and Nazam Siddique	
Condition-Based Maintenance of Bearing Faults in Rotary Machines.....	155
Waqar Ahmad and Kamran Shah	
Effect of PV System Design and Financial Variables on Systems Performance and Financial Feasibility.....	160
Abdul Kashif Janjua, Muhammad Shahzad Younis, Muhammad Zaid Masood Khan and Muhammad Musadiq Ahmed	
Design and Miniaturization of Dual Band Filter based on Quarter Wavelength Resonators....	165
Javaria Khalil and Muhammad Kamran Saleem	
Minimizing Energy Loss for Multiple Load Power Flow Assignment in Smart Homes.....	168
Yuto Lim, Saher Javaid, Yasuo Tan and Ruengwit Khwanrit	
Design and Analysis of Wireless Power Transfer using Stacked Coil PCB for Inductive Power Charging.....	174
Eko Ramadhan, Heri Suryatmojo, Ardyono Priyadi and Mudrik Alaydrus	
Electrical Substation Environment Monitoring System Using Energy Efficient Algorithm for Wireless Sensor Network.....	178
Saddique Haroon, Muhammad Aqeel Ijaz and Afeef Obaid	
Techno-Economic Analysis & Optimal Sizing for Rooftop Photovoltaics Utilizability: A Case Study for UET Taxila.....	184
Muhammad Aashir Ali Ali and Aftab Ahmad	

Comparative Evaluation and Analysis of Six- and Four-Switch Drivers for PMBLDC Motor Control.....	190
Musa Mohammed Gujja and Dahaman Ishak	
Optimal Sizing and Techno-economic Analysis of Hybrid Renewable Energy System for Off-grid Remote Areas in Indonesia.....	196
Didik Sudarmadi and Iwa Garniwa	
Vulnerability Assessment for Primary-Backup Overcurrent Relay Coordination Deprivation Due to Virtual Power Plant.....	202
Mian Rizwan, Ciwei Gao, Xingyu Yan, Gujing Lin, Yuan Gu and Minghe Wu	
Optimising PMU Placement using Integer Linear Programming for Complete Network Observability with Zero Injection Bus and N-1 Contingency.....	208
Muhammad Musadiq Ahmed, Muhammad Amjad and Muhammad Ali Qureshi	
Rheological Behavior Predictions of Non-Newtonian Nanofluids via Correlations and Artificial Neural Network for Thermal Applications.....	212
Nik Eirdhina Binti Nik Salimi, Suhaib Umer Ilyas, Haris Naseer, Nawal Noshad, Abulhassan Ali and Rashid Shamsuddin	
Groundwater Contamination in Peri-Urban Islamabad: A Study of the Impact of Unmanaged On-site Sanitation Facilities.....	218
Arwa Raza, Hira Amjad, Nida Maqbool, Imran Hashmi and Sher Jamal Khan	
Prediction of Rheological and Filtration Loss Properties of Nano-Zirconium-dioxide Drilling Fluids via Machine Learning Techniques for Energy Exploration.....	222
Cheah Jason, Suhaib Umer Ilyas, Syahrir Ridha, Umaira Saher, Mustafa Alsaady and Shwetank Krishna	
Modeling and Optimization of Cryogenic CO₂ Capture from Flue Gas using Response Surface Methodology.....	228
Abdulkader S. Hanbazazah	
Smart Pipeline Monitoring System: A Review.....	233
Mahaman Djamilou Yahaya Moussa, Abiodun Musa Aibinu, Abdusshakur Abdurrahman, Kafayat Oluwatoyin Shobowale and Anunuso Justice Chikezie	
Detection of Plant Stress Condition With Deep Learning Based Detection Models.....	238
Mohd Shahrimie Mohd Asaari, Syahanis Shamsudin and Lin Jian Wen	
Evaluation of Indoor Air Quality, Air Exchange Rates and Thermal Comfort Parameters in Dormitories.....	243
Ayesha Asif and Muhammad Zeeshan	
Response Surface Methodology-Based Modeling for Prediction of Methane-Carbon dioxide Solid-Vapor Phase Equilibrium.....	249
Anas Ahmed	
An Investigation of Valorization Potential of Fecal Sludge for Anaerobic Treatment from Onsite Sanitation Facilities.....	253
Nida Maqbool, Aiman Gul, Zukhruf Khalid, Abdul Wahab Akram, Asfand Yar and Sher Jamal Khan	
Determining Historic (1950 - 2000) Average Precipitation and Temperature for Pakistan by Using Climate Downscaling Technique.....	257
Ibadullah Safdar, Muhammad Zahid, Tehseen Ilahi, Sohaib Tariq, Tausif Zahid and Majid Ali	
Robot Path Planning via Harris Hawks Optimization: A Comparative Assessment.....	262
Anbalagan Loganathan and Nur Syazreen Ahmad	
Hybrid Saliency-Based Visual Perception Model for Humanoid Robots.....	266
Talha Rehman, Wasif Muhammad, Anum Naveed, Muhammad Naeem, Muhammad Jehanzeb Irshad, Irfan Qaiser and Muhammad Waqas Jabbar	

Simultaneous Localization and Mapping of UAV For Precision Agricultural Application.....	272
Abdul Rauf, Wasif Muhammad, Muhammad Jehanzeb Irshad and Zubair Mehmood	
Development of Visual Smooth Pursuit Model Using Inverse Reinforcement Learning For Humanoid Robots.....	278
Hammad Ud-Din, Wasif Muhammad, Ali Asghar, Muhammad Waqas Jabbar, Muhammad Jehanzeb Irshad and Nazam Siddque	
Vision-Based Velocity Estimations for Autonomous Mobile Robots.....	284
Siti Juliana Abu Bakar, Richmond Tay Kim Hui, Patrick Goh and Nur Syazreen Ahmad	
Bayesian Inference Based Generation of Human-Like Anthropomorphic Arm Movements....	290
Mohammad Shoaib Babar, Sohaib Siddique Butt, Hamza Taj, Syed Umar Rasheed and Wasif Muhammad	
Biometric Electroencephalogram Based Random Number Generator.....	295
Fan Boon Lee and Bee Ee Khoo	
Smart Scheduling in Cloudlet Federation.....	301
Sherrjel Asim, Muhammad Ziad Nayyer, Usama Ahmed and Muhammad Faheem	
Attention-Based Approach for Cassava Leaf Disease Classification in Agriculture.....	305
Simon Peter Khabusi, Prishika Pheroijam and Satchidanand Kshetrimayum	
Resource Availability Forecasting for Federated Clouds.....	311
Muhammad Hassan Mursal, Usama Ahmed and Muhammad Ziad Nayyer	
Carcinoembryonic Antigens Segmentation and Quantitative Analysis from Fluorescent Images using Principal Component Analysis and Adaptive K-means Clustering.....	317
Muhammad Aslam, Shahzadi Mahnoor, Muhammad Asif Munir, Saman Cheema, Khawaja Humble Hassan and Abdullah Sajid	
Hand Gesture Recognition System for Recognizing of Indonesian Sign Language Number Using Attentional Convolutional Network.....	323
Elsen Ronando and Arief Rahman Hakim	
Design Face Spoof Detection using Deep Learning.....	329
Rajeetha Thaneeshan, Pranavi Thiruchelvam, Sayanthan Saththiyarajah and Thushaliny Paranthaman	
An Applied Artificial Intelligence Aided Technique for Effective Classification of Breast Cancer.....	334
Mishal Waqar, Attique Ur Rehman, Sabeen Javaid, Tahir Muhammad Ali and Ali Nawaz	
A Novel Decentralized Coordination Control Scheme for the Complex Transactive Energy Prosumers.....	340
Muhammad Ikram, Salman Ahmed, Safdar Nawaz Khan Marwat, Muhammad Nasir and Zakir Ullah	
An Integrated Machine Learning Framework for Effective Classification of Water.....	346
Isha Aleem, Attique Ur Rehman, Sabeen Javaid and Tahir Muhammad Ali	
Dynamic Denoising Mirroring Filter for Periodic Noise Removal from 2D Medical Images...	352
Umair Shafique, Fiaz Majeed, Samina Naz, Mah Amara, Irfan Ul Mustafa and Hafiz Usman Zia	
Trust-aware Cloudlet Federation Model for Secure Service Selection.....	355
Vaneeza Shahid, Muhammad Ziad Nayyer and Usama Ahmed	
Multiclass Classification of Gastric Cancer using Artificial Neural Network.....	362
Muhammad Aqeel Aslam, Shahzadi Mahnoor, Ahmad Bilal, Saman Cheema, Muhammad Asif Munir and Khawaja Humble Hassan	

Generative Adversarial Networks (GANs) Video Framework: A Systematic Literature Review.....	368
Muhammad Hamza, Sibghat Ullah Bazai, Muhammad Imran Ghafoor, Shafi Ullah, Saira Akram and Muhammad Shahzeb Khan	
Forecasting Cryptocurrency Prices Using a Gated Recurrent Unit Neural Network.....	373
Muhammad Shahzeb Khan, Sibghat Ullah Bazai, Muhammad Imran Ghafoor, Shah Marjan, Mohammad Ameen and Syed Ali Asghar Shah	
Number Recognition System-based Virtual Sketch with Hand Gestures Using Attentional Convolutional Network.....	379
Elsen Ronando and Putri Rahayu Ningtiyas	
Assessing the Environmental Consequences of ICEVs and BEVs in Dhaka City via Vehicle Fleet Modelling and Support Vector Regression	385
Mirza Rasheduzzaman, A. B. M. S. U. Doulah, Ramit Kumar Sadhukhan and M. Mofazzal Hossain	
A Systematic Literature Review: Evaluating Effects of Adversarial Attacks and Attack Generation Methods.....	391
Saira Akram, Sibghat Ullah Bazai, Muhammad Imran Ghafoor, Shah Marjan, Muhammad Hamza and Syed Ali Asghar Shah	
Few Shot Spatio-Temporal Anomaly Detection Model For Suspicious Activities.....	397
Nouman Aziz, Wasif Muhammad, Irfan Qaiser, Ali Asghar, Muhammad Jehanzeb Irshad and Yumna Bilal	
Survivability Period Prediction in Colon Cancer Patients using Machine Learning.....	403
Anoosha Tahir, Bilal Wajid, Faria Anwar, Fahim Gohar Awan, Umar Rashid, Fareeha Afzal, Abdul Rauf Anwar and Imran Wajid	
Optimized Focused Crawling for Web page Classification.....	407
Nazifa Fatima, Dr. Muhammad Faheem and Dr. Muhammad Ziad Nayyer Dar	
Author Index.....	413
