

Multimedia University Engineering Conference (MECON 2022)

**Sustainable Engineering for a Sustainable
Future**

Held online

Advances in Engineering Research Volume 214

Cyberjaya and Melaka, Malaysia
25 – 27 July 2022

Editor:

Mohamad Yusoff bin Alias

ISBN: 978-1-7138-6598-8

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.

Print copyright© (2023) by Atlantis Press (part of Springer Nature)
All rights reserved.
Copyright for individual electronic papers remains with the authors.

For permission requests, please contact the publisher:

Atlantis Press
Van Godewijkstraat 30
3311GX Dordrecht
The Netherlands

contact@atlantis-press.com

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

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

Design a Document Verification System Based on Blockchain Technology.....	1
<i>Muhammad Dhiyaul Rakin Zainuddin, Kan Yeep Choo</i>	
Peer-Review Statements	17
<i>Mohamad Yusoff Bin Alias</i>	
Partial Directed Coherence for the Classification of Motor Imagery-Based Brain-Computer Interface.....	19
<i>Muhammad Ahsan Awais, Mohd Zuki Yusoff</i>	
Downlink Electromagnetic Field Exposure Levels in Pre-5G and 5G Ultra-Dense Mobile Networks	30
<i>Nor Fazlin Mohd Nasir, Heng Siong Lim, Kah Seng Diong</i>	
Novel Sensor Position on Vehicle Wheels.....	47
<i>K. Shashikumar</i>	
Vehicle Types Recognition in Night-Time Scene	54
<i>Willy Liew, Mohd Haris Lye Abdullah, Rehan Shahid, Amr Ahmed</i>	
A Systematic Review on Facial Expression Based Emotion Recognition System for Smart Homes.....	69
<i>Nor Azlina Ab. Aziz, Tawsif Khan, Kamarulzaman Ab. Aziz, Muhammad Anas Hasnul, Sharifah Noor Masidayu Sayed Ismail</i>	
IoT-Based Monitoring System for Solar Photovoltaics' Parameter Analysis and Prediction	79
<i>Muhammad Afifuddin Pozi, Heng Siong Lim, Boon Kian Lim, Kia Wai Liew</i>	
Segmentation of Diabetic Retinopathy Based on Retinal Fundus Images Using Thresholding Technique	91
<i>Nur Hasanah Ali, Nur Asyiqin Amir Hamzah, Norhashimah Mohd Saad, Rania Mahfooz, Abdul Rahim Abdullah</i>	
Facial Mask Detection and Energy Monitoring Dashboard Using YOLOv5 and Jetson Nano	101
<i>Nur Asyiqin Binti Amir Hamzah, Hadhrami Bin Abd Ghani, Hatem Fahd Al-Selwi, Nawaid Hassan, Azlan Bin Abd Aziz</i>	
Weapon Detection in Surveillance Videos Using Deep Neural Networks.....	110
<i>Muhammad Ekmal Eiman Quyyum, Mohd Haris Lye Abdullah</i>	
Material Removal Rate Study on Turning of Al Alloy	123
<i>Lee Choo Yau, Palanisamy Chockalingam</i>	
Crashworthiness Analysis of CFRP Crash Box by Finite Element Method	137
<i>Purwo Kadarso, Karol Koronka Putukala, Judha Purbolaksono, Ario Turangga Bayu, Yose Fahmi Buys, Muhammad Akbar Barrinaya, Kok Chee Kuang</i>	
Deep Learning Approach for Precise Positioning of Millimeter Wave in 5G for V2V Links	145
<i>H. T. Ahmed, Jun Jiat Tiang, Azwan Bin Mahmud, Gwo Chin Chung</i>	
Analysis of Security Threats on Data Centre in Internet of Things.....	156
<i>Lee Loo Chuan, Mardeni Roslee, Pang Wai Leong, Indrarini Dyah Irawati</i>	
Improvement in RSSI-Based Distance Estimation for Aircraft ADS-B Signal by Antenna Diversity	169
<i>Junichi Naganawa</i>	

IoT-Based Temperature and Humidity Real-Time Monitoring System for Beekeeping Using LoRa Technology	178
<i>Muhammad Irfan Mohd Pikri, Siti Azlida Ibrahim, Nur Mimi Syaheeda Mohmad Faisal, Mohd Zulkifli Mustafa, Sarina Mansor</i>	
Analysis of Piezoelectric Energy Harvester with Different Substrate Materials and Configurations.....	187
<i>Fahmidul Huq Syed, Li Wah Thong, Yee Kit Chan</i>	
Driver Drowsiness Detection System Using Hybrid Features Among Malaysian Drivers: A Concept	205
<i>Em Poh Ping, Teoh Tai Shie</i>	
Hybrid PAPR Reduction Schemes for MIMO-OFDM System	218
<i>Ngu War Hlaing, Ali Farzamia, Bryan Lee</i>	
IoT Performance and Security Analysis Based on WiFi Systems	237
<i>Michael Raj Mosas, Azwan Mahmud, Noorlindawaty Binti Md Jizat, Azlan Abd. Aziz, Syamsuri Yaacob</i>	
Speech Emotion Recognition of Intelligent Virtual Companion for Solitudinarian	248
<i>Mutaz Alnahhas, Tan Wooi Haw, Ooi Chee Pun</i>	
An Evaluation of Various Pre-Trained Optical Character Recognition Models for Complex License Plates	255
<i>Haziq Idrose, Nouar Aldahoul, Hezerul Abdul Karim, Rehan Shahid, Manish Kumar Mishra</i>	
Industrial Safety Helmet Detection Using Single Shot Detectors Models and Transfer Learning	262
<i>Muhammad Umair, Yee-Loo Foo</i>	
Smart Mailbox Using Piezoelectric Sensors.....	273
<i>Yew-Keong Sin, Joe-Win Ng, Zhe-Kang Lim</i>	
A Fast and Precise Indoor Positioning System Based on Deep Embedded Clustering.....	283
<i>Hui Wen Khoo, Yin Hoe Ng, Chee Keong Tan</i>	
Wide Tunability Microwave Photonic Filter Based on Brillouin-Raman Fiber Laser: A Modeling Study.....	294
<i>Zhi-Yong Yau, Yu-Gang Shee, Lim Eng-Hock, Mohd. Adzir Mahdi</i>	
Physical Layer Security Using Scrambled BCH with Adaptive Granular HARQ.....	303
<i>Azlan Abd Aziz, Mohammed Ahmed Magzoub Albashier, Azwan Mahmud, Mohamad Yusoff Alias, Nurul Asyiqin Amir Hamzah</i>	
Development of an Integrated Solar-Wind Power Generator	313
<i>Tareq Saif Ali Al-Areqi, Kah-Yoong Chan, Chu-Liang Lee, Wai-Leong Pang, Sew-Kin Wong</i>	
Crashworthiness Characteristic of Glass Fibre Reinforced Polymer (GFRP) Composite Tubes Under Quasi Static Loading	322
<i>Muhammad Fareq Ikhwan As'Ari, Alif Zulfakar Pokaad, Logah Perumal</i>	
IoT Based Drip Irrigation and Soil Monitoring System	337
<i>Mohammad Wasim Haidhar Bin Mohamed Slime, Yee Shen Pang, Chyi Shing Chua</i>	
Smart Vehicle Surveillance System for Road Accidents Detection.....	353
<i>Yew-Keong Sin, Chin-Hean Law, Ming-Yue Tan</i>	
Design of a Smart Water Storage and Trading Platform Based on Blockchain Technology	363
<i>Sheng Wu Cheng, Kan Yeep Choo</i>	

Simulation of Dye-Sensitised Solar Cell with Mesoporous Zinc Oxide Layer of Different Thicknesses and with Dye-Sensitisers of Different Absorption Coefficients	378
<i>Lavanyah Arumugam, Pei Ling Low, Mian En Yeoh, Gregory Thien, Yew Keong Sin, Kah Yoong Chan</i>	
Experiment Study of Effect of Apex Angle of Taper Round Tube Under Quasi Static Axial Crushing on Energy Absorption	397
<i>Ze Feng Ching, Alif Zulfakar Pokaad</i>	

Author Index