### 2021 8th International Conference on Computer and Communication Engineering (ICCCE)

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<td><strong>6A</strong>: Internet of Things and Big Data</td>
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**Zoom virtual participation joining information**

**Meeting ID**: 921 3268 4514

Join Session as

[Session Code-Your paper sequence- Your last name (Affiliation, Country)]

for example as **1A-7-ALAM (IIUM, Malaysia)**

**Zoom Virtual Room Structure**

- **ICCCE-K**
  - Meeting ID: 921 3268 4514
  - Breakout Room ICCCE-A
  - Breakout Room ICCCE-B
Tuesday, June 22, 2021

Tuesday, June 22 9:00 - 9:45 (Asia/Kuala_Lumpur)

O: Opening Ceremony

Room: Congress-Room

Tuesday, June 22 10:00 - 10:45 (Asia/Kuala_Lumpur)

K1: Keynote 1: Empowering Sustainability with beyond 5G Networks

Prof. Dr. Sonia Aïssa

Room: ICCCE- K

Chair: Md Rafiqul Islam (International Islamic University Malaysia, Malaysia)

This speech discusses several scenarios for the beyond 5G generation societies and how sustainability in envisioned future smart cities and societies is empowered using new and emerging cutting-edge technologies. These key disruptive technologies that will guarantee the desired quality of physical experience to achieve ubiquitous wireless connectivity are expected in such futuristic envisioned societies. The speech provides a foundational background on the evolution of different wireless communication standards to have a proper insight into the vision and requirements of beyond 5G network. Then, it provides a panoramic view of the enabling technologies proposed to facilitate the beyond 5G and introduce emerging 6G applications such as multi-sensory-extended reality, digital replica, and more. Next, the technology-driven challenges, social, psychological, health and commercialization issues posed to actualizing 6G, and the probable solutions to tackle these challenges are discussed extensively. Additionally, it presents new use cases of the beyond 5G technology in agriculture, education, media and entertainment, logistics and transportation, and tourism. Furthermore, we discuss the multi-faceted communication capabilities of these future networks that will contribute significantly to global sustainability and how they will bring about a dramatic change in the business arena. Finally, we highlight the research trends, open research issues, and key take-away lessons for future research exploration in beyond 5G wireless communication.
Tuesday, June 22, 11:00 - 12:45 (Asia/Kuala_Lumpur)

1A: Signal and Image Processing

Room: ICCCE-A

Chairs: Khairul Azami Sidek (International Islamic University Malaysia, Malaysia), Faridah Abd Rahman (International Islamic University of Malaysia, Malaysia)

11:00 Real-Time Driver's Monitoring Mobile Application Through Head Pose, Drowsiness and Angry Detection
Hamimah Ujir, Ee Min Jie, Mohammad Farhaan Iqbal, Qan Khai Mun and Irwandi Hipiny (Universiti Malaysia Sarawak, Malaysia)
pp. 1-6

11:15 Efficiency of Parallelization of Haar Fast Transform Algorithm in Dual-Core Digital Signal Processors
Hakimjon Zaynidinov (Tashkent University of Information Technologies, Uzbekistan); Sanjarbek Salijanovich Ibragimov (Andijan Machine-Building Institute, Uzbekistan); Gayrat Tojiboyev (Andijan State University, Uzbekistan); Javohir Nurmurodov (Tashkent University of Information Technology, Uzbekistan)
pp. 7-12

11:30 Palmprint Verification System Using LBP and KAZE Features Detection
Noor Aldeen Abbas Khalid (Universiti Malaysia Perlis, Malaysia); Muhammad Imran Ahmad (Universiti Malaysia Perlis & School of Computer and Communication Engineering, Malaysia); Thulfiqar H. Mandeel and Mohd. Nazrin Md Isa (Universiti Malaysia Perlis, Malaysia)
pp. 13-16

11:45 A Comparative Study on Lossless Compression Mode in WebP, Better Portable Graphics (BPG), and JPEG XL Image Compression Algorithms
Thulfiqar H. Mandeel (Imam Ja'afar Al-Sadiq Universiti, Malaysia); Muhammad Imran Ahmad (Universiti Malaysia Perlis & School of Computer and Communication Engineering, Malaysia); Noor Aldeen Abbas Khalid and Mohd. Nazrin Md Isa (Universiti Malaysia Perlis, Malaysia)
pp. 17-22

12:00 Remote Sensing Image Classification for Spatial Information Extraction of Panax Notoginseng Fields
Shengliang Pu, PhD, Yining Song, Yingyao Chen, Yating Li, Lingxin Luo, Xiaowei Xie and Yunju Nie (Faculty of Geomatics, East China University of Technology, China)
pp. 23-26

12:15 Digital Spirometer With a Mobile Application for Asthmatic Patient
Arif Amiruddin (IIUM, Malaysia); Noreha Abdul Malik and Othman Omran Khalifa (International Islamic University Malaysia, Malaysia)
pp. 27-31

12:30 Continuous Non-Invasive Blood Glucose Level Measurement Using Near-Infrared LEDs
Arif Amiruddin (IIUM, Malaysia); Noreha Abdul Malik (International Islamic University Malaysia, Malaysia); AHM Zahirul Alam (Inetnational Islamic University Malaysia, Malaysia); Siti Nur Atikah Salim (IIUM, Malaysia)
pp. 32-37
Tuesday, June 22 11:00 - 12:45 (Asia/Kuala_Lumpur)

1B: Internet of Things and Big Data

Room: ICCCE-B

Chairs: Teddy Surya Gunawan (International Islamic University Malaysia, Malaysia), Farah Abdul Rahman (International Islamic University Malaysia, Malaysia)

11:00 *Implementation of Smart Traffic Light Prototype Using MQTT Protocol for Emergency Vehicles*
Hera Nurwarsito and Hendi Nugroho (University of Brawijaya, Indonesia)
pp. 38-43

11:15 *River Phosphorus Pollution Sensory Detection & Quantification System*
Sharifah Nabilahwafa (IIUM, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Siti Yusoff (IIUM, Malaysia); Md Rafiul Islam (International Islamic University Malaysia, Malaysia)
pp. 44-48

11:30 *Sungai Pusu River Emergency Vital Signs Monitoring Using LoRaWAN*
Sakinah Kosnin (IIUM, Malaysia); Shihabeldin Fadl Yousif Hassan (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Md Rafiul Islam (International Islamic University Malaysia, Malaysia)
pp. 49-52

11:45 *Wearable Based-Sensor Fall Detection System Using Machine Learning Algorithm*
Anis Nadia Ishak (IIUM, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Siti Yusoff (IIUM, Malaysia); Md Rafiul Islam (International Islamic University Malaysia, Malaysia)
pp. 53-57

12:00 *LoRa Channel Propagation Modelling Using Artificial Neural Network*
Ahmad Shahmi Mohd Rofi (IIUM, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Md Rafiul Islam and Ahmed Basahel (International Islamic University Malaysia, Malaysia)
pp. 58-62

12:15 *Securing Wireless Communication Using RF Fingerprinting*
Nur Sabryna Aminuldin (IIUM, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Siti Yusoff (IIUM, Malaysia); Md Rafiul Islam (International Islamic University Malaysia, Malaysia)
pp. 63-67

12:30 *LNMT-New Mersenne Number Based Lightweight Crypto Hash Function for IoT*
Nubila Nabeel (International Islamic University, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Md Rafiul Islam (International Islamic University Malaysia, Malaysia)
pp. 68-71
Tuesday, June 22 2:00 - 3:45 (Asia/Kuala_Lumpur)

2A: Smart Grid and ICT

Room: ICCCE-A

**Chairs:** Nur Shahida Midi (International Islamic University Malaysia, Malaysia), Mohd Shahrin Abu Hanifah (International Islamic University Malaysia, Malaysia)

2:00 *A Smart Microgrid Approach for Distributed Power Generation of Renewable Energy*
Farha Khushi, S. M. A. Motakabber, Amelia Wong Azman and Belal Ahmed Hamida (International Islamic University Malaysia, Malaysia); Amit Bhattacharjee (City University of New York)
pp. 72-77

2:15 *Measuring the Individual Performance of A Software Development Team*
Susi Eva Maria Purba (Del Institute of Technology, Indonesia); Mario E. S. Simaremare (Institut Teknologi Del, Indonesia)
pp. 78-81

2:30 *Modeling of the Network Reconfiguration Considering Electric Vehicle Charging Load*
Wan Izzat Aiman Bin Wan Abdul Manan and Azrin bin Saedi (International Islamic University Malaysia, Malaysia); Mohamad Heerwan Peeie (Universiti Malaysia Pahang, Malaysia); Mohd Shahrin Abu Hanifah (International Islamic University Malaysia, Malaysia)
pp. 82-86

2:45 *Integration of Hybrid Biomass-Solar Photovoltaic-Wind Turbine in Microgrid Application*
Saidatul Haneen Badruhisham and Mohd Shahrin Abu Hanifah (International Islamic University Malaysia, Malaysia); Siti Yusoff (IIUM, Malaysia); Nurul Fadzlin Hasbullah and Mashkuri Yaacob (International Islamic University Malaysia, Malaysia)
pp. 87-92

3:00 *Case Study on Prototyping Educational Applications Using Persona-Based Approach*
Nurul Najihah Zanudin (Univesiti Teknologi Malaysia, Malaysia); Shahida Sulaiman, Mohd Razak Samingan and Nasnah Mohamed (Universiti Teknologi Malaysia, Malaysia); Sh. Khayulzahr Sh. A Raof and Abd Rahman Abd Samad (South East Johor Department Authority (KEJORA), Malaysia)
pp. 93-98

3:15 *Mathematical Design of Coil Parameter for Wireless Power Transfer Using NI Multisims Software*
Siti Yusoff (IIUM, Malaysia); Nidia Nazieha Nanda and Nur Shahida Midi (International Islamic University Malaysia, Malaysia); Ahmed Samir Abed Badawi (IIUM, Malaysia)
pp. 99-103

3:30 *Design of U and I Ferrite Core on Dynamic Wireless Charging for Electric Vehicle*
Amira Abdullah and Siti Yusoff (IIUM, Malaysia); Erwan Sulaiman (Universiti Tun Hussein Onn Malaysia, Malaysia); Nur Shahida Midi (International Islamic University Malaysia, Malaysia)
pp. 104-109
Tuesday, June 22, 2021

Tuesday, June 22 2:00 - 3:45 (Asia/Kuala_Lumpur)

2B: Instrumentation and Control

Room: ICCCE-B

Chairs: Siti Noorjannah Ibrahim (International Islamic University Malaysia, Malaysia), Nor Farahidah Za'bah (International Islamic University Malaysia, Malaysia)

2:00 Evaluation of Energy Harvesting for Smart Cane Application
Nur Shahida Midi and Nur Atikah Md Idris (International Islamic University Malaysia, Malaysia); Siti Yusoff (IIUM, Malaysia); Nur Amira Mat Ripah (International Islamic University Malaysia, Malaysia)
pp. 110-114

2:15 Wireless Power Transfer System Using Series-Series Compensation Topology
Muaad Gathageeth (Electrical and Computer Engineering, International Islamic University Malaysia, Malaysia); Othman Omran Khalifa (International Islamic University Malaysia, Malaysia); Aisha-Hassan A. Hashim (International Islamic University Malaysia, Malaysia); Noreha Abdul Malik (International Islamic University Malaysia, Malaysia); Faridah Abd Rahman (International Islamic University of Malaysia, Malaysia); Muhammed zaharadeen Ahmed (IIUM, Malaysia)
pp. 115-120

2:30 Advanced Adaptive PID Controller for BLDC Motor
S. M. A. Motakabber and Md Mahmud (International Islamic University Malaysia, Malaysia); AHM Zahirul Alam (International Islamic University Malaysia, Malaysia); Anis Nurashikin Nordin (International Islamic University Malaysia, Malaysia); Syed Ahmad Fawwaz Wafa Syed Ridza (International Islamic University Malaysia & IIUM, Malaysia)
pp. 121-125

2:45 Non-Intrusive Energy Harvesting From Vibration of Air Conditioning Condenser Unit Utilizing Piezoelectric Sensors
Chuan Choong Yang, Rafiq Imran Bin Rohimi, Noor Hazrin Hany Mohamad Hanif and Siti Noorjannah Ibrahim (International Islamic University Malaysia, Malaysia)
pp. 126-130

3:00 On the Evaluation of DHT22 Temperature Sensor for IoT Application
Yasser Asrul Ahmad and Teddy Surya Gunawan (International Islamic University Malaysia, Malaysia); Hasmah Mansor (International Islamic University Malaysia (IIUM), Malaysia); Belal Ahmed Hamida (International Islamic University Malaysia, Malaysia); Adam Fikri Hishamudin (IIUM, Malaysia); Fatchul Ariffin (Yogyakarta State University, Indonesia)
pp. 131-134

3:15 Energy Storage System for Dual Energy Harvester in Wearable or Portable Devices
Muhammad Aiman Zainal Abidin, Noor Hazrin Hany Mohamad Hanif and Mohamad Safiddin Mohd Tahir (International Islamic University Malaysia, Malaysia)
pp. 135-139

3:30 Dynamic Position Control for Unmanned Small Vehicle (Application for Vessel)
Ismah Zakirah Ismail (IIUM, Malaysia); Nurul Arfah Che Mustapha (International Islamic University Malaysia, Malaysia)
pp. 140-143
Tuesday, June 22 4:00 - 5:30 (Asia/Kuala_Lumpur)

3A: Antennas and Propagation

Room: ICCCE-A

Chairs: Sarah Yasmin Mohamad (International Islamic University Malaysia, Malaysia), Farah Nadia Mohd Isa (International Islamic University Malaysia, Malaysia)

4:00 Design of Circular Patch Antennas at mmWave
Siti Zainab (International Islamic University Malaysia); Norun Abdul Malek, Sarah Yasmin Mohamad, Farah Nadia Mohd Isa and Md Rafiqul Islam (International Islamic University Malaysia, Malaysia)
pp. 144-149

4:15 Development of Rubber Substrate for More Robust Flexible Wearable Antenna at 2.4 GHz Application
Farisha Eriena Rahmad, Sarah Yasmin Mohamad and Norun Abdul Malek (International Islamic University Malaysia, Malaysia); Faridah Abd Rahman (International Islamic University of Malaysia, Malaysia); Ahmad Alhadi Ruslan (International Islamic University Malaysia, Malaysia); Nurfarina Zainal (Universiti Tun Hussein Onn Malaysia, Malaysia)
pp. 150-155

4:30 Design and Performance Analysis of Flexible Microstrip Patch Antenna With Rubber Substrate
Ahmad Alhadi Ruslan, Sarah Yasmin Mohamad and Norun Abdul Malek (International Islamic University Malaysia, Malaysia); Siti Yusoff (IIUM, Malaysia); Siti Normi Zabri (Universiti Teknikal Malaysia Melaka, Malaysia); Farisha Eriena Rahmad (International Islamic University Malaysia, Malaysia)
pp. 156-161

4:45 Investigating the Effects of Metal Obstructions on Radio Propagation in 2.4 GHz ISM Band
Muhammad Asim and Muhammad Aatif (University of Engineering and Technology Peshawar, Pakistan); Naveed Mufti (University of Engineering & Technology, Mardan, Pakistan)
pp. 162-167

5:00 Design of a Wearable Textile Patch Antenna Using C-Shape Etching Slot for Wi-MAX and 5G Lower Band Applications
Mahfuz Md Mahmudul Hasan, Md Rafiqul Islam and Nazmus Sakib (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Raad Raad (University of Wollongong, Australia); Md Abu Tayab Sakib (International Islamic University Malaysia, Malaysia)
pp. 168-172

5:15 Design of UWB Patch Antenna With 5G Lower Band Notch Characteristics Using Ring Shape Resonator
Mahfuz Md Mahmudul Hasan and Md Rafiqul Islam (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Nazmus Sakib and Norun Abdul Malek (International Islamic University Malaysia, Malaysia); A. K. M. Zakir Hossain (Universiti Teknikal Malaysia Melaka, Malaysia)
pp. 173-177
Tuesday, June 22 4:00 - 5:30 (Asia/Kuala_Lumpur)

3B: Computer Networks and Security

Room: ICCCE-B

Chairs: Ani Liza Asnawi (International Islamic University Malaysia, Malaysia),
       Malik Arman Morshidi (International Islamic University Malaysia, Malaysia)

4:00 DDoS Attack Early Detection and Mitigation System on SDN Using Random Forest Algorithm and Ryu Framework
       Heru Nurwarsito and Muhammad Fahmy Nadhif (University of Brawijaya, Indonesia)
       pp. 178-183

4:15 Extended Dijkstra Algorithm in Path Planning for Vision Based Patrol Robot
       Choon Kiat Teh (MMU, Malaysia); Wai Kit Wong and Thu Soe Min (Multimedia University, Malaysia)
       pp. 184-189

4:30 Secure ACO-Based Wireless Sensor Network Routing Algorithm for IoT
       Afsah Sharmin, Farhat Anwar and S. M. A. Motakabber (International Islamic University Malaysia, Malaysia);
       Aisha-Hassan A. Hashim (International Islamic University Malaysia, Malaysia)
       pp. 190-195

4:45 A Mechanism for Controller Failover in Distributed Software-Defined Networks
       Poonam Dharam (Saginaw Valley State University, USA); Mithila Dey (North Dakota State University, USA)
       pp. 196-201

5:00 Design of Circular Pad Coupler of Inductive Power Transfer for Electric Vehicle (EV)
       Syasya Azra Zaini (International Islamic University Malaysia, Malaysia); Siti Yusoff (IIUM, Malaysia); Mohd Shahrin Abu Hanifah (International Islamic University Malaysia, Malaysia); Erwan Sulaiman (Universiti Tun Hussein Onn Malaysia, Malaysia); Nadia Nazieha Nanda and Saidatul Haneen Badruhisham (International Islamic University Malaysia, Malaysia)
       pp. 202-207

5:15 Smart Arbitration System for Multiprocessor AMBA Interface in System on Chip
       Mohammed Iqbalur Rahman Rokon (International Islamic University Malaysia & North South University, Malaysia); S. M. A. Motakabber and AHIM Zahirul Alam (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Mohammad A Matin (North South University, Bangladesh)
       pp. 208-213
Wednesday, June 23 9:00 - 9:45 (Asia/Kuala_Lumpur)

**K2: Keynote 2: The Role of Power Electronics in Providing a Sustainable Energy Supply**

**Prof. Dr. Saad Mekhilef**

**Room:** ICCCE- K

**Chair:** Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia)

Power electronics (PE) is an application-oriented and interdisciplinary area. It uses power semiconductor devices to perform switching actions in order to achieve the desired conversion strategy. The PE plays a crucial role of the conversion and control of electrical power. The effective use of electrical energy is a key technique for achieving energy efficiency, and power electronics technologies that can convert electric power into the optimum characteristics for each application are an essential part of this approach. Power electronics systems have attracted attention as key components for building a sustainable energy supply. PE-based power converters are also widely used in conventional and renewable energy systems. The advancement of semiconductor technology, including the power devices and other components that support power electronics and control techniques, has led to a smaller size, higher efficiency, and higher performance. In this lecture, I will describe some examples where power electronics and power devices are used in renewable energy and industrial applications and also highlight the role of PE in providing sustainable energy supply for the future generation.

Wednesday, June 23 10:00 - 10:45 (Asia/Kuala_Lumpur)

**K3: Keynote 3: Recent Research on Detection of Vulnerable Plaque in Coronary Artery Ultrasound Images Using Machine Learning Algorithms**

**Prof. Ts. Dr. Ali Selamat**

**Room:** ICCCE- K

**Chair:** Othman Omran Khalifa (International Islamic University Malaysia, Malaysia)

Atherosclerotic plaque rupture is the most common mechanism responsible for the majority of sudden coronary deaths. The precursor lesion of plaque rupture is thought to be a thin cap fibroatheroma (TCFA) or "vulnerable plaque". Virtual Histology Intravascular Ultrasound (VH-IVUS) image is clinically available for visualizing this colour coded coronary artery tissue. However, it has limitations in providing clinical relevant information for identifying the vulnerable plaque. In this talk, we discuss on the recent research on the detections of vulnerable plaque in virtual histology intravascular ultrasound images using machine learning algorithms. We proposed how to improve the identification of TCFA in VH-IVUS image by developing a set of algorithms for segmentation, feature extraction, and plaque type classification to accurately identify vulnerable plaque. To develop the algorithms two approaches comprising of optimization and semi-supervised models were adopted. Besides, K-means and Fuzzy c-means (FCM) were improved by Particle Swarm Optimization (KMPSO and FCMPSO). Next, semi-supervised models were developed by means of hybrid FCM with k-Nearest Neighbor (FCM-kNN), minimum Euclidean distance (FCM-mED), and Support Vector Machine (FCM-SVM). For the extraction, two algorithms were adopted: Close Lumen Tracing (CLBT) and Open Lumen Tracing (OLBT) to extract luminal features. In addition, three algorithms were explored for extracting significant features from plaque component consisting of Extracting Confluent Component (ECC), Necrotic Core Layering (NCL), and Plaque Burden Assessment (PBA). For plaque type classification, the extracted features from VH-IVUS were integrated with textural features to enhance the efficiency.
Wednesday, June 23 11:00 - 12:45 (Asia/Kuala_Lumpur)

4A: Signal and Image Processing

Room: ICCCE-A

Chairs: Amelia Wong Azman (International Islamic University Malaysia, Malaysia), Nurul Arfah Che Mustapha (International Islamic University Malaysia, Malaysia)

11:00 ECG(electrocardiogram) Digital Signal Processing for the Biomedical Applications
Md. Rashed Khan Menon, Md. Moklesur Rahman and Heung-Gyoon Ryu (Chungbuk National University, Korea (South))
pp. 214-217

11:15 Microsleep Detection of Automobile Drivers Using Electrocardiogram Signal
Nur Shahirah Nor Shahrudin, Khairul Azami Sidek, Muhammad Rasydan Jalaludin, Anis Nurashikin Nordin and Nur Aaina Nazihah Nazmi Asna (International Islamic University Malaysia, Malaysia)
pp. 218-223

11:30 Enhancing Driver Drowsiness Detection for Data Acquisition Stage Using Electrocardiogram
Nur Shahirah Nor Shahrudin, Khairul Azami Sidek, Nur Aaina Nazihah Nazmi Asna, Anis Nurashikin Nordin and Muhammad Rasydan Jalaludin (International Islamic University Malaysia, Malaysia)
pp. 224-228

11:45 Thermopile Array Sensor for Children Detection in Automobile Application
Nurulhusna Jamal Ali (IIUM, Malaysia); Nurul Arfah Che Mustapha (International Islamic University Malaysia, Malaysia)
pp. 229-233

12:00 Comparative Study of Electrocardiogram Signals Acquired From Different Smart Textile Shirts
Muhammad Muizz Mohd Nawawi, Khairul Azami Sidek and Amelia Wong Azman (International Islamic University Malaysia, Malaysia)
pp. 234-239

12:15 Feature Extraction of EEG Signal by Power Spectral Density for Motor Imagery Based BCI
Mohammad Nur Alam, Muhammad Ibn Ibrahim and S. M. A. Motakabber (International Islamic University Malaysia, Malaysia)
p. 240-243

12:30 Monitoring and Alarming Activity of Islamic Prayer (Salat) Posture Using Image Processing
Md Mozasser Rahman (Universiti Tun Hussein Onn Malaysia, Malaysia); Rayan Abbas Ahmed Alharazi and Muhammad Khairul Imran Zainal Badri (International Islamic University Malaysia, Malaysia)
pp. 244-249
Wednesday, June 23 11:00 - 12:45 (Asia/Kuala_Lumpur)

4B: Agents, Knowledge-Based Technologies

**Room:** ICCCE-B

**Chairs:** Belal Ahmed Hamida (International Islamic University Malaysia, Malaysia), Norazlina Saidin (International Islamic University Malaysia, Malaysia)

11:00 *Classification of Quranic Topics Using Ensemble Learning*
Bassam Arkok (International Islamic University Malaysia & Malaysia, Malaysia); Akram Zeki (International Islamic University Malaysia, Malaysia)
pp. 250-254

11:15 *Extending Deep Neural Categorisation Models for Recommendations by Applying Gradient Based Learning*
Sashank Sridhar and Sowmya Sanagavarapu (Anna University, India)
pp. 255-260

11:30 *Automatic Breast Cancer Detection Using Inception V3 in Thermography*
Mohammed Abdulla Salim Al Husaini (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaei (International Islamic University Malaysia (IIUM), Malaysia); Teddy Surya Gunawan and Md Rafiqul Islam (International Islamic University Malaysia, Malaysia); Shihab A. Hameed (IIUM University & Faculty of Engineering, Malaysia)
pp. 261-264

11:45 *Sentiment Analysis From Depression-Related User-Generated Contents From Social Media*
Ananna Saha and Ahmed Al Marouf (Daffodil International University, Bangladesh); Rafayet Hossain (Frankfurt University of Applied Science, Germany)
pp. 265-270

12:00 *Detecting Poultry Movement for Poultry Behavioral Analysis Using the Multi-Object Tracking (MOT) Algorithm*
Jasmine Khairunissa, Sri Wahjuni, Iman Rahayu Hidayati Soesanto and Wulandari Wulandari (Bogor Agricultural University, Indonesia)
pp. 271-274

12:15 *Graphene-Oxide Coated on Fiber Bragg Grating for Temperature Sensor*
Norazlina Saidin, Nurul Farhana Husna Kamarozaman, Farah Sakiiah Roslan and Md Ralib Aliza Aini (International Islamic University Malaysia, Malaysia); Kok-Sing Lim (University of Malaya, Malaysia)
pp. 275-279

12:30 *Cloud Based Inventory System for Effective Management of Under and Over-Stock Hazards*
Rashidah Funke Olanrewaju (International Islamic University Malaysia, Malaysia)
pp. 280-284
Wednesday, June 23 2:00 - 3:45 (Asia/Kuala_Lumpur)

5A: RF and Microwave Circuits and Devices

Room: ICCCE-A

Chairs: Khaizuran Abdullah (International Islamic University Malaysia, Malaysia), Siti Hajar Yusoff (International Islamic University Malaysia, Malaysia)

2:00 Design of High-Efficiency Voltage Doubler for Energy Harvesting Application
Mohd Hezri Abdullah (Universiti Sains Malaysia, Malaysia); Arjuna Marzuki (Wawasan Open University, Malaysia); Mohd Tafir Mustaffa (Universiti Sains Malaysia, Malaysia)
pp. 285-288

2:15 Design of MedRadio RF Mixer by Utilizing Subthreshold Biasing and Bleeding Circuit Techniques
Arjuna Marzuki (Wawasan Open University, Malaysia); Mutanizam Abdul Mubin, Chain Hui Wong and Mohd Tafir Mustaffa (Universiti Sains Malaysia, Malaysia)
pp. 289-293

2:30 Component Spread Minimization for Integrated Active-RC Filter Using Genetic Algorithm Optimization Technique
Emad A. Abdo and Ahmad T. Younis (Ninevah University, Iraq)
pp. 294-299

2:45 Performance Assessment for Bare Patch Antenna and Integrated Filter-Antenna Microstrip Patch Resonator Based for Partial Discharge Application in HV Equipment
Zul Hasrizal Bohari (Universiti Teknikal Malaysia Melaka, Malaysia); Muzamir Isa (Universiti Malaysia Perlis & UnMAP, Malaysia); Ahmad Zaidi Abdullah (Universiti Malaysia Perlis, Malaysia); Ping Jack Soh (Universiti Malaysia Perlis (UnMAP) & Katholieke Universiteit Leuven, Malaysia); Mohamad Fani Sulaima (Universiti Teknikal Malaysia Melaka, Malaysia); Syahrun Nizam Md Arshad Hashim (Universiti Malaysia Perlis, Malaysia)
pp. 300-304

3:00 Noise Sources Extraction for Conducted Emission Modeling of IC's Using IBIS Models
Tamana Mehraj Baba, Nurul Arfah Che Mustapha and Nurul Fadzlin Hasbullah (International Islamic University Malaysia, Malaysia)
pp. 305-309

3:15 Underwater Communication System Using Electronic Acoustics
Amira Nasirah Mohd Fekry (IIUM, Malaysia); Nurul Arfah Che Mustapha (International Islamic University Malaysia, Malaysia)
pp. 310-313

3:30 Wavelet Modulation for Energy Efficient Wireless Sensors Networks With Simultaneous Wireless Information and Power Transfer
Amar Esse Ahmed (IIUM, Malaysia); Khaizuran Abdullah (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia)
pp. 314-319
Wednesday, June 23 2:00 - 3:30 (Asia/Kuala_Lumpur)

5B: NextGen Mobile Communications

Room: ICCCE-B

Chairs: Ahmad Zamani Jusoh (International Islamic University Malaysia, Malaysia), Suriza Ahmad Zabidi (International Islamic University Malaysia, Malaysia)

2:00  **A Low Computational Complexity for 2D MUSIC Algorithm in Massive MIMO Systems**
Luay Tareq Aal dhaheb (Universiti Sains Malaysia); Nor Muzlifah Mahyuddin (Universiti Sains Malaysia (USM), Malaysia)
pp. 320-325

2:15  **Design and Implementation of Chaotic Frequency Hopping Sequences Based on One Dimensional Chaotic Maps Utilizing FPGA**
Fadel Sahib (AL-Mustansiriya University Collage, Iraq); Ali Jaber Al-Askery (Middle Technical University, Iraq)
pp. 326-331

2:30  **User Association for Multi-Tenant Heterogeneous Network Slicing Using Genetic Algorithm**
Swathi Subbiah Jayanthi, Ying Loong Lee and Yoong Choon Chang (Universiti Tunku Abdul Rahman, Malaysia)
pp. 332-336

2:45  **A Computationally Efficient Least Square Channel Estimation Method for MIMO-OFDM Systems**
Ahmad Hasan, S. M. A. Motakabber and Farhat Anwar (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Muhammad Ibn Ibrahimy (International Islamic University Malaysia, Malaysia)
pp. 337-340

3:00  **Banana Ripeness Classification Using Computer Vision-Based Mobile Application**
Muhammad Farhan Mohamedon (International Islamic University Malaysia, Malaysia); Faridah Abd Rahman (International Islamic University of Malaysia, Malaysia); Sarah Yasmin Mohamad and Othman Omran Khalifa (International Islamic University Malaysia, Malaysia)
pp. 341-344

3:15  **Stress Classification Based on Speech Analysis of MFCC Feature via Machine Learning**
Muhammad Syazani Hafiy Hilmy, Ani Liza Asnawi, Ahmad Zamani Jusoh, Khaizuran Abdullah, Siti Noorjannah Ibrahim, Huda Adibah Mohd Ramli and Nor Fadhillah Mohamed Azmin (International Islamic University Malaysia, Malaysia)
pp. 345-349
Wednesday, June 23 4:00 - 5:30 (Asia/Kuala_Lumpur)

6A: Internet of Things and Big Data

Room: ICCCE-A

Chairs: Rashidah Funke Olanrewaju (International Islamic University Malaysia, Malaysia), Nurul Fariza Zulkurnain (International Islamic University Malaysia, Malaysia)

4:00 Game-Based Learning Using Augmented Reality
   Li Ying Ooi, Irwandi Hipiny and Hamimah Ujir (Universiti Malaysia Sarawak, Malaysia); Sarah Flora Samson Juan (UNIMAS, Malaysia)
   pp. 350-354

4:15 ICS Cyber Attack Detection With Ensemble Machine Learning and DPI Using Cyber-Kit Datasets
   Sinil Mubarak (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Md Rafiquol Islam (International Islamic University Malaysia, Malaysia); Sheroz Khan (International Islamic University Malaysia, Malaysia)
   pp. 355-360

4:30 Design of Hardware-In-The-Loop Simulation Approach for Slip-Compensated Odometry Tracked Mobile Robot Platform
   Chow Yeh Loh and Hermawan Nugroho (University of Nottingham Malaysia, Malaysia)
   pp. 361-366

4:45 Observing Impression of User Experience for Learning Cranium Anatomy
   Mauludy Rakhman (University of Gadjah Mada, Indonesia); Adhistya Erna Permanasari and Sunu Wibrarana (Universitas Gadjah Mada, Indonesia); Intan Sulistyaningrum Sakkinah (Politeknik Negeri Jember, Indonesia)
   pp. 367-372

5:00 Transforming Timestamp of a CSV Database to an Event Log
   Yutika Amelia Effendi and Fitri Retrialisca (Universitas Airlangga, Indonesia)
   pp. 373-378

5:15 IoT Enabled Geofencing for Covid-19 Home Quarantine
   Md Fahad Monir (Independent University, Bangladesh); Akil Hamid Chowdhury (Independent University Bangladesh, Bangladesh); Rabeya Anzum (International Islamic University Malaysia, Malaysia); M Ashraful Amin (Independent University Bangladesh, Dhaka, Bangladesh)
   pp. 379-384
Wednesday, June 23 4:00 - 5:30 (Asia/Kuala_Lumpur)

6B: Optical Communications and Photonics

Room: ICCCE-B

Chairs: Khairayu Badron (International Islamic University Malaysia, Malaysia), Mohd Shahnaz Zainal Abidin (International Islamic University Malaysia, Malaysia)

4:00 Performance Evaluation of Free Space Optical Link Using OOK Modulation Schemes Under Dust-Storm Turbulence
Thaahirah Shireen Mohamed Rasied, Nur Fazeera Hani Zailani, Filzah Syafirah Mohamad Sepian and Ahmad Muhamed Almeslati (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Ahmed Basahel (International Islamic University Malaysia, Malaysia)

4:15 Prediction of Rain Attenuation on Earth-To-Satellite Link Using Rain Rate Measurement With Various Integration Times
Mullah Momin and Md Rafiqul Islam (International Islamic University Malaysia, Malaysia); Md Moktarul Alam (International Islamic University, Malaysia); Khairayu Badron (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaeabi (International Islamic University Malaysia (IIUM), Malaysia); Mahfuz Md Mahmudul Hasan (International Islamic University Malaysia, Malaysia)

4:30 Performance Analysis of Free Space Optics Link Under the Effect of Rain Attenuation
Siti Hajar Ab Aziz (Universiti Kuala Lumpur & British Malaysian Institute, Malaysia); Norhanis Aida M. Nor and Suriza Ahmad Zubidi (International Islamic University Malaysia, Malaysia)

4:45 Performance Analysis of FSO Systems Using Different Modulation Techniques Under the Influence of Atmospheric Turbulence
Nur Syahidah Sadzali (IIUM, Malaysia); Norhanis Aida M. Nor (International Islamic University Malaysia, Malaysia); Siti Hajar Ab Aziz (Universiti Kuala Lumpur & British Malaysian Institute, Malaysia)

5:00 Time Diversity Analysis Based on Predicted Rain Attenuation at Ku, Ka and V- Bands Using Synthetic Storm Technique
Mohammad Rofiqul Hassan and Md Rafiqul Islam (International Islamic University Malaysia, Malaysia); Mohamed Hadi Habaebi (International Islamic University Malaysia (IIUM), Malaysia); Md Moktarul Alam (International Islamic University, Malaysia); Suriza Ahmad Zabidi, Khairayu Badron and Ahmed Basahel (International Islamic University Malaysia, Malaysia)

5:15 Road Sign Instance Segmentation by Using YOLACT for Semi-Autonomous Vehicle in Malaysia
Siow Shi Heng (Universiti Tun Hussien Onn Malaysia, Malaysia); Shamsudin Abu Ubaidah (Universiti Tun Hussein Onn Malaysia's, Malaysia)