2021 Asia-Pacific Conference on Applied Electromagnetics
20-22 December 2021, Penang Malaysia
https://apace2021.apmttemc.org/
Organised by IEEE Malaysia AP/MTT/EMC Joint Chapter

TECHNICAL PROGRAMME

Monday, December 20	
14:00-15:30	Tutorial 1: ***RF Energy Harvesting System*** Speaker: **Dr Nasimuddin (*Institute for Infocomm Research, A-STAR, Singapore*)** Chair: **Mohd Haizal Jamaluddin** (Universiti Teknologi Malaysia, Malaysia)
15:30-16:00	***Tea/Coffee Break***
16:00-17:30	Tutorial 2: ***Inter-Antenna Interaction and Its Effects in MIMO Wireless*** Speaker: **Dr. Rakhesh Singh Kshetrimayum, (*Indian Institure of Technology Guwahati, India*)** Chair: **Mohd Haizal Jamaluddin** (Universiti Teknologi Malaysia, Malaysia)

Tuesday, December 21	
08:00-09:00	**Reg1:** ***Registration***
09:00-09:10	***Welcoming Speech*** **Assoc. Prof. Dr Azremi Abdullah Al-Hadi** (University Malaysia Perlis, Malaysia) **APACE 2021 General Chair**
09:10-10:00	Keynote 1: ***History and Future of Implantable Antennas*** Speaker: **Professor Cyhthia Furse** (*University of Utah, USA*) Chair: **Azremi Abdullah Al-Hadi** (University Malaysia Perlis, Malaysia)
10:10-11:00	Keynote 2: ***What is My Measurement Equipment Actually Doing? Implications for 5G/6G, mm-Wave and Related Applications*** Speaker: **Dr. Jon Martens** (*Anritsu, USA*) Chair: **Azremi Abdullah Al-Hadi** (University Malaysia Perlis, Malaysia)

11:10-12:00	Keynote 3: ***Characteristics of Wireless Devices in the Presence of Human Body*** Speaker: **Professor Akimasa Hirata** (*Nagoya Institute of Technology, Japan*) Chair: **Azremi Abdullah Al-Hadi** (University Malaysia Perlis, Malaysia)
12:00-12:20	***Sponsors Session*** **RF Station Sdn Bhd** **COMREL Technologies Sdn Bhd**
12:20-13:30	**L1:** ***Lunch Day 1***
13:30-15:50	**PS 1:** ***Plenary Session 1*** Chair: **Mohamad Kamal A. Rahim** (Universiti Teknologi Malaysia, Malaysia) **PS 1.1 13:30** ***RF Energy Harvesting Circuit for Vital Sensing Platform*** ***Speaker: Prof. Haruichi Kanaya*** (Kyushu University, Japan) **PS 1.2 13:50** ***Compact Hybrid Dipole-Loop Antenna for On-Metal UHF RFID Tag Design*** Speaker: ***Prof. Lim Eng Hock*** (Universiti Tunku Abdul Rahman, Malaysia) **PS 1.3 14:10** ***Optimization of Defected Ground Structure (DGS) Using Genetic Algorithm for Gain Enhancement of Microstrip Antenna*** Speaker: **Prof. Dr. Ir. Fitri Yuli Zulkifli** (Universitas Indonesia, Indonesia) **PS 1.4 14:30** ***Stratiform and Convective Drop Size Distributions on Specific Rain Attenuation in Peninsular Malaysia for Propagation Applications*** Speaker: **Prof. Dr. Jafri bin Din** (Universiti Teknologi Malaysia, Malaysia) **PS 1.5 14:50** ***New Feeding Methods for Reconfigurable Slotted SIW Antenna Arrays for Fixed Frequency Beam Scanning Applications*** Speaker: **Prof. Mohamed Himdi** (Université de Rennes 1, France) **PS 1.6 15:10** ***A Review: Design and Development of Matched Band-Stop Filter Using Lumped-Element*** Speaker: **Prof. Ir. Dr. Badrul Hisham bin Ahmad** (Universiti Teknikal Malaysia Melaka, Malaysia) **PS 1.7 15:30** ***Flexible Antenna Printing Technology of Silver Nanoparticles (AgNPs) Ink on Polyethylene Terephthalate (PET) Material Substrate for Vehicle-To-Everything (V2X) Applications*** Speaker: **Prof. Ir. Dr. Mohd Faizal Jamlos** (Universiti Malaysia Pahang, Malaysia)

15:50-17:50	**A1: *Antenna and Radiating Elements 1*** Chair: **Kamilia Kamardin** (Universiti Teknologi Malaysia, Malaysia) **15:50 *Design of an Inset Feed Rectangular Microstrip Patch Antenna*** Juhi Jahani, Fathima Joofa, Fathima Zeena and Rajendran Hirshan (South Eastern University of Sri Lanka, Sri Lanka); W. G. C. W. Kumara (South Eastern University of Sri Lanka & South Asian Institute of Technology and Medicine, Sri Lanka) **16:10 *Analysis of Self-Resonant Equation of a Meander Line Antenna*** Ngu War Hlaing (MJIIT & UTM, Malaysia); Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia); Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Malaysia) **16:30 *Miniatured Ring Slotted Circular Patch GNSS Antenna*** Rais Ahmad Sheikh (Universiti Malaysia Perlis, Malaysia & Jazan University, Saudi Arabia); Azremi Abdullah Al-Hadi and Thennarasan Sabapathy (University Malaysia Perlis, Malaysia); John Fong (University of Malaysia Perlis, Malaysia); Hidayath Mirza (Jazan University, KSA., Malaysia); Ping Jack Soh (ping jack soh) **16:50 *Focal Region Analysis of Dual Spherical Reflector Antenna*** Ayuni Afiqah Arjunaidi and Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Malaysia); Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia)	**B1: *Electromagnetic Modelling, Propagation & Computation, EMC*** Chair: **Idnin Pasya** (University Teknologi MARA, Malaysia) **15:50 *Radio Propagation in Tunnels: Mini-Review and Future Trends (Invited Paper)*** Wen Shu Wong and Soo Yong Lim (University of Nottingham Malaysia, Malaysia) **16:10 *Solution of Electromagnetic Wave Equation Based Computational Problems Using Correct Wavelet*** Arun Kumar (Jamia Millia Islamia, India); Abdul Quaiyum Quaiyum Ansari (Jamia Millia Islamia, New Delhi, India); Mohammad Hashmi (Nazarbayev University, Kazakhstan) **16:30 *Patch Antenna Gain Improvement with Metamaterials*** Mouhamed Fadel Diagana (Sénégal, Senegal); Serigne Bira Gueye (Cheikh Anta Diop University, Senegal) **16:50 *A Robot Arm Based Probe Station for near Field Measurement*** Mohd Hafiz Baharuddin, Mohd Hairi Mohd Zaman and Jannarthana Rao Nookanaidu (Universiti Kebangsaan Malaysia, Malaysia) **17:10 *Preliminary Investigation of Small Scale Spatial Variability of Rain Intensity Using a Rain Gauge Network for Mm-Wave Propagation Application*** M M Rashid and Jafri Din (Universiti Teknologi Malaysia, Malaysia); Hong Yin Lam (Universiti Tun Hussein Onn Malaysia, Malaysia); Omar Abdul Aziz (Universiti Teknologi Malaysia, Malaysia)

	17:10 ***Comparison of Multibeam Radiation Performance of Parabolic and Spherical Reflector Antenna*** Norazah Abdullah (Universiti Teknologi Malaysia, Malaysia); Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Malaysia); Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia) **17:30** ***Effect of Conductive Materials and Substrates for Flexible Patch Antennas: A Comprehensive Review*** Norlina Mohd Zain (Universiti Teknologi MARA Johor, Kampus Pasir Gudang, Johor, Malaysia)	

Wednesday, December 22

08:00-09:40

A2: *Antenna and Radiating Elements 2*

Chair: **Nurul Huda Abd Rahman** (Universiti Teknologi MARA, Malaysia)

8:00 ***5G Millimeterwave Wearable Antenna: State-Of-The-Art and Current Challenges (Invited Paper)***

Hasliza A Rahim (Universiti Malaysia Perlis & Bioelectromagnetics Research Group, Malaysia); Mohd Haizal Jamaluddin (Universiti Teknologi Malaysia, Malaysia); Hamza Ahmad Mashagba (Unimap & Perlis, Malaysia); Nor Zakiah Yahaya (Universiti Sains Malaysia, Malaysia); Thennarasan Sabapathy (University Malaysia Perlis, Malaysia); Mohd Najib Mohd Yasin (Universiti Malaysia Perlis, Malaysia); Muzammil Jusoh (Universiti Malaysia Perlis & School of Computer and Communiction Engineering, Malaysia); Ismahayati Adam and Khairul Najmy Abdul Rani (Universiti Malaysia Perlis, Malaysia)

8:20 ***Machine Learning Based Design Optimization of a GPS Antenna on a Flexible Substrate (Invited Paper)***

Mohd Ifwat Mohd Ghazali (Universiti Sains Islam Malaysia, Malaysia); Saranraj Karuppuswami (Altair, USA); Mohd Haizal Jamaluddin (Universiti Teknologi Malaysia, Malaysia)

8:40 ***Bending Analysis of a Dual L-Shaped Slotted Circularly Polarised Wearable Textile Antenna for GPS Application***

Anis Fariza Md Pazil (SEGi University, Malaysia); Nurul Huda Abd Rahman (Universiti Teknologi MARA, Malaysia); Nurulazlina Ramli (SEGi University, Malaysia); Robiatun Adayiah Awang (Universiti Teknologi MARA, Malaysia)

B2: *RF/Microwave Circuit and System*

Chair: **Azah Syafiah Mohd Marzuki** (TM R&D Sdn Bhd, Malaysia)

8:00 ***Characterization of Magneto Dielectric Material Based on Microwave Resonator***

Wei Zhi Sek (Universiti Tun Hussein Onn Malaysia, Malaysia); See Khee Yee (Universiti Tun Hussein Onn Malaysia & Lecturer, Malaysia); Fatin Hamimah Ikhsan (Universiti Tun Hussein Onn Malaysia, Malaysia); Samsul Haimi Dahlan (Universiti Tun Hussien Onn Malaysia, Malaysia); Adel Ashyap (Universiti Tun Hussein Onn Malaysia, Malaysia)

8:20 ***Substrate Integrated Waveguide Single-Pole Dual-Double-Throw (SPDDT) Switch for K-Band Applications***

Deisy Mamedes and Jens Bornemann (University of Victoria, Canada)

8:40 ***Switchable Open Loop Square Ring DGS in Millimeter-Wave SPDT Discrete Switch Design***

Adib Othman (Universiti Tun Hussein Onn Malaysia & Universiti Teknikal Malaysia Melaka, Malaysia); Huda A. Majid (Universiti Tun Hussein Onn Malaysia, Malaysia); Noor Azwan Shairi and Amirul Aizat Zolkefli (Universiti Teknikal Malaysia Melaka, Malaysia); Najib Fadhali (UTHM, Malaysia); Zuhairiah Zainal Abidin (Universiti Tun Hussein Onn Malaysia, Malaysia); Imran Mohd Ibrahim and Zahriladha Zakaria (Universiti Teknikal Malaysia Melaka, Malaysia)

9:00 ***Design of Novel Rat-Race Coupler Based Analog Pre-Distortion Circuit for 5G Applications***

Gaurav Bhargava and Shubhankar Majumdar (National Institute of Technology Meghalaya, India)

	9:00 ***A Wearable Trapezoidal Antenna with Triple Stop-Band Performance for Off-Body WBAN Applications*** Youcef Braham Chaouche (University of Quebec at Abitibi-Temiscamingue UQAT CANADA, Canada); Mourad Nedil (UQAT, Canada); Boualem Hammache (Université des Frères Mentouri, Constantine, Algeria); Massinissa Belazzoug (Université de Bordj Bou Arréridj, Algeria) **9:20** ***Potential and Optimization of Flexible Antenna Using Botanical Dielectric Substrate*** Suhaila Subahir (Universiti Teknologi MARA, Malaysia); Mohd Aris (Universiti Teknologi Mara, Malaysia)	
10:00-12:20	**PS 2:** ***Plenary Session 2*** Chair: **Mohamad Kamal A. Rahim** (Universiti Teknologi Malaysia, Malaysia) **PS 2.1 10:00** ***A Microwave-Thermography-Convolution Neural Network Technique for Breast Cancer Detection*** Speaker: **Prof. Omar Ramahi** (University of Waterloo, Canada) **PS 2.2 10:20** ***Metasurface Based Horn Replacement Antennas*** Speaker: **Assoc. Prof. Wayne Rowe** (RMIT University, Australia) **PS 2.3 10:40** ***Radar Application for Small Displacement Detection*** Speaker: **Assoc. Prof. Dr. Aloysius Adya Pramudita** (Telkom University, Indonesia) **PS 2.4 11:00** ***Geometric Loss Analysis for Single Curve Track FSO Ground to Train Communications Link*** Speaker: **Prof. Mohammad Faiz Liew Abdullah** (Universiti Tun Hussein Onn Malaysia (UTHM), Malaysia **PS 2.5 11:20** ***Optimizing the Probability of Fog Nodes in a Finite Fog Radio Access Network*** Speaker: **Prof. Ir. Kaharudin Dimyati** (University of Malaya, Malaysia)	

	PS 2.6 11:40 ***Modified Asymmetrical Doherty Power Amplifier Based on Symmetrical Devices for 5G Applications*** Speaker: **Prof. Dr. Zahriladha Zakaria** (Universiti Teknikal Malaysia Melaka, Malaysia) **PS 2.7 12:00** ***Three Dimensional All-Metal High Aspect Ratio Directive Helix Antenna for UWB THz 6G Communications*** Speaker: **Prof. Dr. Alyani Ismail** (Universiti Putra Malaysia, Malaysia)	
12:20-13:30	**L2: *Lunch Day 2***	
13:30-15:10	**A3: *Antenna and Radiating Elements 3*** Chair: **Idnin Pasya** (University Teknologi MARA, Malaysia) **13:30** ***Size-Reduction of a Dual-Band Circularly Polarized Dielectric Resonator Antennas (Invited Paper)*** Azuwa Ali and Mohd Najib Mohd Yasin (Universiti Malaysia Perlis, Malaysia) **13:50** ***Wideband Conformal Strip Fed Millimeter Wave Rectangular Dielectric Resonator Antenna for 5G Frequency Band*** Abinash Gaya and Mohd Haizal Jamaluddin (Universiti Teknologi Malaysia, Malaysia); Sahar Saleh (Universiti Sains Malaysia, Malaysia) **14:10** ***Low-Profile Polarization-Adjustable Ring Slot Antenna for Millimeter-Wave Applications*** Peyman Aghabeyki (Aalborg University, Denmark); Masoud Hamidi (Tarbiat Modares University, Iran); Gholamreza Moradi (Amirkabir University of Technology, Iran) **14:30** ***A Miniature Broadband Antipodal Vivaldi Antenna for 5G Mm-Wave Wireless Communication*** Selvakumar Mariappan (Universiti Sains Malaysia, Malaysia & QEDT Venture, Malaysia); Nitesh Sharma (QEDT	**B3: *Electromagnetic Wave Applications, Wireless & Mobile Systems*** Chair: **Nurul Huda Abd Rahman** (Universiti Teknologi MARA, Malaysia) **13:30** ***Design and Simulation of Silicon-Based Antenna at 5.8 GHz ISM Band for Fat-Intrabody Communication*** Noor Badariah Asan and Hoh Si Xuan (Universiti Teknikal Malaysia Melaka, Malaysia); Robin Augustine (Uppsala University, Sweden) **13:50** ***A Review of EMF Radiation for 5G Mobile Communication Systems*** Abeer Abdalla Zakaria Ibrahim (Universiti Putra Malaysia (UPM), Malaysia); Mohammed Suleiman Elbasheir (Sudan University of Science & Technology (SUST), Sudan); Rashid Saeed (Sudan University of Science and Technology, Sudan); Fazirulhisyam Hashim (Universiti Putra Malaysia, Malaysia); Salaheldin Edam (Beijing University of Post and Telecommunications, Sudan); Saber M E Fadul (Universiti Putra Malaysia, Malaysia) **14:10** ***Development of 4x4 Multistatic Microwave Imaging System for Material Characterization*** Mohamad Zoinol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka & Hang Tuah Jaya, Malaysia); Nuruliswa Abdullah (Universiti Teknikal Malaysia Melaka, Malaysia)

	Venture, Malaysia); Jagadheswaran Rajendran (Universiti Sains Malaysia, Malaysia); Arokia Nathan (University of Cambridge, United Kingdom (Great Britain)) **14:50** ***Dual Band Radiation Pattern Reconfigurable Antenna for Two-Port 5G Mobile Terminals*** Surentiran Padmanathan (ACE, UNIMAP, Malaysia); Azremi Abdullah Al-Hadi (University Malaysia Perlis, Malaysia); Ping Jack Soh (University of Oulu & Katholieke Universiteit Leuven, Finland); Samir Salem Al-Bawri (Universiti Kebangsaan Malaysia (UKM), Malaysia)	**14:30** ***Analysis of Acoustic Emission Signal for Prediction of Corrosion on Carbon Steel Pipelines*** Nurani Abdul Kafi (Malaysia); Zazilah May (Universiti Teknologi Petronas, Malaysia) **14:50** ***SFCW Signal Generation of Dual Frequency Channel Using LabVIEW Simulation*** Nor Hazima Ardzemi, Farah Nadia Mohd Isa, Norun Abdul Malek, Sarah Yasmin Mohamad and Huda Adibah Mohd Ramli (International Islamic University Malaysia, Malaysia)
15:20-16:40	**A4: *IEEE RFID Council Malaysia Chapter Special Session*** Chair: **Sharul Kamal A. Rahim** (Universiti Teknologi Malaysia, Malaysia) **15:20** ***Antipodal Dipole with Capacitive-Loaded Patches for Metal-Mountable RFID Tag Design*** Jiun Ian Tan (Universirti Tunku Abdul Rahman, Malaysia); Yong Hong Lee (Universiti Tunku Abdul Rahman, Malaysia); Eng Hock Lim (Faculty of Engineering and Science, UTAR, Malaysia) **15:40** ***Development of CPW-Fed Dual-Band Conformal Equilateral Square Slot-Ring Antenna Using Organic Jute Textile*** Muhammad Zairil Muhammad Nor (UiTM, Malaysia); Sharul Kamal A. Rahim (Universiti Teknologi Malaysia, Malaysia) **16:00** ***Wearable UHF RFID Antenna Based Metamaterial*** Nurr Syazwanie Khamaruzaman (University Malaysia Perlis, Malaysia); Muzammil Jusoh (Universiti Malaysia Perlis & School of Computer and Communiction Engineering, Malaysia); Thennarasan Sabapathy (University Malaysia Perlis, Malaysia); Mohamed Nasrun	**B4: *Advance Materials, Passive and Coupling Structures*** Chair: **Saidatul Norlyana Azemi** (Lecturer, UniMAP, Malaysia) **15:20** ***Single Layer Double Square Loop Frequency Selective Surfaces (FSS) for Wideband Absorption*** Hamza Ahmad and Muhammad Hasnain (University of Engineering and Technology, Mardan, Pakistan); Fauziahanim Che Seman (Universiti Tun Hussein Onn Malaysia, Malaysia); Taimur Khan, Abbas Khan and Abdu Allah (University of Engineering and Technology, Mardan, Pakistan); MuhibUr Rahman (Polytechnique Montreal, Canada) **15:40** ***Crosstalk Noise Alleviation Technique for DDR5 Memory Interface on Compact PWB*** Chang Fei Yee (Keysight Technologies, Malaysia) **16:00** ***Ultra-Thin and Conformal SSPP Based UWB Low Pass Filter for B5G Radio Stripe Networks*** Sunanda Lakkimsetti (IIT Guwahati, India); Rakhesh Singh Kshetrimayum (Indian Institute of Technology Guwahati, India)

	Osman (Universiti Malaysia Perlis (UniMAP), Malaysia); Suhaila Subahir (Universiti Teknologi MARA, Malaysia); Mohd Haizal Jamaluddin (Universiti Teknologi Malaysia, Malaysia); Ali Hanafiah Rambe (Universitas Sumatera Utara, Indonesia) **16:20 *Miniature I-Shaped Patch for Metal-Mountable UHF RFID Tag Design*** Ahmad Azlan Ab Aziz (Politeknik Sultan Salahuddin Abdul Aziz Shah, Malaysia); Nabilah Ripin (Malaysia); Nadzeefah Zamil (Institute of Power Engineering, Uniten, Malaysia); Ansari Mohamed Nainar Mohamed and Noor Afeefah Nordin (Universiti Tenaga Nasional, Malaysia); Eng Hock Lim (Faculty of Engineering and Science, UTAR, Malaysia)	**16:20 *Tensile Damage Assessment on Carbon Fiber Reinforced Laminate for 45 ˚and 90 ˚Layout Orientation*** Muhammad Shazwan Mahmud (Universiti Teknologi Petronas, Malaysia); Noor A'in A. Rahman (University Teknologi Petronas, Malaysia); Zazilah May (Universiti Teknologi Petronas, Malaysia)	

16:40 - 18:00	**A5: *Antenna and Radiating Elements 4*** Chair: **Mohamad Zoinol Abidin Bin Abd Aziz** (Universiti Teknikal Malaysia Melaka, Malaysia) **16:40 *A Compact High Gain 4-Port MIMO Antenna System Using Defected Ground Structure for Mm-Wave 5G Applications*** Abdu Allah and Hamza Ahmad (University of Engineering and Technology, Mardan, Pakistan); Fauziahanim Che Seman (Universiti Tun Hussein Onn Malaysia, Malaysia); MuhibUr Rahman (Polytechnique Montreal, Canada); Muhammad Sohail (Govt Post Graduate College Mardan, Pakistan); Muhammad Hasnain (University of Engineering and Technology, Mardan, Pakistan)	**A6: *Antenna and Radiating Elements 5*** Chair: **Ahmad Azlan Ab Aziz** (Politeknik Sultan Salahuddin Abdul Aziz Shah, Malaysia) **16:40 *5G Millimeter Wave Vivaldi Tapered Slot Antenna with Enhanced Bandwidth*** Sahar Saleh (Universiti Sains Malaysia, Malaysia); Widad Ismail (Engineering Campus, Universiti Sains Malaysia, Malaysia); Intan Zainal Abidin (Universiti Sains Malaysia, Malaysia); Mohd Haizal Jamaluddin and Abinash Gaya (Universiti Teknologi Malaysia, Malaysia); Mohammed H Bataineh and Asem Alzoubi (Yarmouk University, Jordan); Samir Salem Al-Bawri (Universiti Kebangsaan Malaysia (UKM), Malaysia)	**B5: *RF Measurement, Sensors & Systems*** Chair: **Idnin Pasya** (University Teknologi MARA, Malaysia) **16:40 *Characterisation and Modelling of Microwave Open-Ended Coaxial Sensor for in Vivo Non-Invasive Glucose Content Measurements (Invited Paper)*** Kim Yee Lee (Universiti Tunku Abdul Rahman, Malaysia); Yeong Nan Phua (UTAR, Malaysia); Eng Hock Lim (Faculty of Engineering and Science, UTAR, Malaysia); Cheng Ee Meng (Universiti Malaysia Perlis, Malaysia); Kok Yeow You (Universiti Teknologi Malaysia, Malaysia)

	17:00 *A Dual T-Shaped Compact Quad Element Wideband MIMO Antenna for Mm-Wave Applications* Abdu Allah and Hamza Ahmad (University of Engineering and Technology, Mardan, Pakistan); Fauziahanim Che Seman (Universiti Tun Hussein Onn Malaysia, Malaysia); Muhammad Sohail (Govt Post Graduate College Mardan, Pakistan); MuhibUr Rahman (Polytechnique Montreal, Canada) **17:20 *Design of Compact Dual-Port Super Wideband MIMO Antennas for Communication Systems*** Bashar Esmail (UTM, Malaysia); Mohamad Kamal A. Rahim, Noor Asmawati Samsuri and Osman Bin Ayop (Universiti Teknologi Malaysia, Malaysia); Noor Asniza Murad (University Technology Malaysia, Malaysia); Huda A. Majid (Universiti Tun Hussein Onn Malaysia, Malaysia); Hussam H Keriee (UniversitI TechnologI Malaysia & Advanced RF and Microwave Research Group (ARFMRG), Malaysia); Fayad Ghawbar (Universiti Tun Hussein Onn Malaysia, Malaysia) **17:40 *Different Configurations of a Two-Element MIMO Antenna for Mutual Coupling Reduction in 5G Application*** Hamizan Yon (UiTM Shah Alam, Malaysia); Nurul Huda Abd Rahman (Universiti Teknologi MARA, Malaysia); Hadi Jumaat and Mohd Aris (Universiti Teknologi	**17:00 *OAM-Based Reflectarray Antenna for THz Indoor Communications*** Ali Jihad Ali (Institute for Communication Systems, United Kingdom (Great Britain) & University of Surrey, United Kingdom (Great Britain)); Mohsen Khalily (University of Surrey & 5G Innovation Centre, Institute for Communication Systems (ICS), United Kingdom (Great Britain)); Ali Araghi, Seyed Ehsan Hosseininejad and Rahim Tafazolli (University of Surrey, United Kingdom (Great Britain)) **17:20 *Design and Simulation of Dipole Patch Antenna Using Graphene Sheet for UHF-RFID Application*** Ahmad Azlan Ab Aziz (Politeknik Sultan Salahuddin Abdul Aziz Shah, Malaysia); Nadzeefah Zamil (Institute of Power Engineering, Uniten, Malaysia); Nabilah Ripin (Malaysia); Ansari Mohamed Nainar Mohamed, Yanti Erana Jalil, Noor Afeefah Nordin and Izhan Abdullah (Universiti Tenaga Nasional, Malaysia); Zainudin Yahya Yahya (UNITEN, Malaysia) **17:40 *Development of Thin Dielectric Lens Antenna for Small Focusing Spot in Human Body*** Amirah Abd Rahman and Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia); Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia,	**17:00 *Microwave Biosensor Based on A Single Square Split Ring Resonator for Dielectric Constant Detection*** Adel Ashyap (Universiti Tun Hussein Onn Malaysia, Malaysia); Samsul Haimi Dahlan (Universiti Tun Hussien Onn Malaysia, Malaysia); Zuhairiah Zainal Abidin (Universiti Tun Hussein Onn Malaysia, Malaysia); See Khee Yee (Universiti Tun Hussein Onn Malaysia & Lecturer, Malaysia); Huda A. Majid, Fauziahanim Che Seman and Shaharil Mohd Shah (Universiti Tun Hussein Onn Malaysia, Malaysia) **17:20 *Design of a High Directive Sensor with SRR for Microwave Imaging Application*** Mohamad Zoinol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka & Hang Tuah Jaya, Malaysia); Nuruliswa Abdullah (Universiti Teknikal Malaysia Melaka, Malaysia); Abd Shukur Ja'afar (Universiti Teknikal Malaysia Melaka, Malaysia & Center for Telecommunication Research & Innovation (CeTRI), Malaysia) **17:40 *PCA Analysis on Acoustic Emission Features of Coated Carbon Steel Substrate*** Noor A'in A. Rahman (University Teknologi Petronas, Malaysia); Muhammad Shazwan Mahmud and Zazilah May (Universiti Teknologi Petronas, Malaysia)

	Mara, Malaysia); Mohd Haizal Jamaluddin (Universiti Teknologi Malaysia, Malaysia)	Malaysia); Masaharu Takahashi (Chiba University, Japan)	