

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

Tuesday, December 21

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

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

<p>15:50-17:50</p>	<p>A1: Antenna and Radiating Elements 1</p> <p>Chair: Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia)</p> <p>15:50 Design of an Inset Feed Rectangular Microstrip Patch Antenna</p> <p>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)</p> <p>16:10 Analysis of Self-Resonant Equation of a Meander Line Antenna</p> <p>Ngu War Hlaing (MJIIT & UTM, Malaysia); Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia); Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Malaysia)</p> <p>16:30 Miniatured Ring Slotted Circular Patch GNSS Antenna</p> <p>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)</p> <p>16:50 Focal Region Analysis of Dual Spherical Reflector Antenna</p> <p>Ayuni Afiqah Arjunaidi and Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Malaysia); Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia)</p>	<p>B1: Electromagnetic Modelling, Propagation & Computation, EMC</p> <p>Chair: Idnin Pasya (University Teknologi MARA, Malaysia)</p> <p>15:50 Radio Propagation in Tunnels: Mini-Review and Future Trends (Invited Paper)</p> <p>Wen Shu Wong and Soo Yong Lim (University of Nottingham Malaysia, Malaysia)</p> <p>16:10 Solution of Electromagnetic Wave Equation Based Computational Problems Using Correct Wavelet</p> <p>Arun Kumar (Jamia Millia Islamia, India); Abdul Quaiyum Quaiyum Ansari (Jamia Millia Islamia, New Delhi, India); Mohammad Hashmi (Nazarbayev University, Kazakhstan)</p> <p>16:30 Patch Antenna Gain Improvement with Metamaterials</p> <p>Mouhamed Fadel Diagana (Sénégal, Senegal); Serigne Bira Gueye (Cheikh Anta Diop University, Senegal)</p> <p>16:50 A Robot Arm Based Probe Station for near Field Measurement</p> <p>Mohd Hafiz Baharuddin, Mohd Hairi Mohd Zaman and Jannarthana Rao Nookanaidu (Universiti Kebangsaan Malaysia, Malaysia)</p> <p>17:10 Preliminary Investigation of Small Scale Spatial Variability of Rain Intensity Using a Rain Gauge Network for Mm-Wave Propagation Application</p> <p>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)</p>
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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 Communication 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 Hussein 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](#) (UTM, 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)

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

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

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

	<p>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)</p> <p>16:20 Miniature I-Shaped Patch for Metal-Mountable UHF RFID Tag Design</p> <p>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)</p>	<p>16:20 Tensile Damage Assessment on Carbon Fiber Reinforced Laminate for 45° and 90° Layout Orientation</p> <p>Muhammad Shazwan Mahmud (Universiti Teknologi Petronas, Malaysia); Noor A'in A. Rahman (University Teknologi Petronas, Malaysia); Zazilah May (Universiti Teknologi Petronas, Malaysia)</p>
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<p>16:40 - 18:00</p>	<p>A5: Antenna and Radiating Elements 4 Chair: Mohamad Zoinol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka, Malaysia)</p> <p>16:40 A Compact High Gain 4-Port MIMO Antenna System Using Defected Ground Structure for Mm-Wave 5G Applications</p> <p>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)</p>	<p>A6: Antenna and Radiating Elements 5 Chair: Ahmad Azlan Ab Aziz (Politeknik Sultan Salahuddin Abdul Aziz Shah, Malaysia)</p> <p>16:40 5G Millimeter Wave Vivaldi Tapered Slot Antenna with Enhanced Bandwidth</p> <p>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)</p>	<p>B5: RF Measurement, Sensors & Systems Chair: Idnin Pasya (University Teknologi MARA, Malaysia)</p> <p>16:40 Characterisation and Modelling of Microwave Open-Ended Coaxial Sensor for in Vivo Non-Invasive Glucose Content Measurements (Invited Paper)</p> <p>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)</p>
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<p>17:00 A Dual T-Shaped Compact Quad Element Wideband MIMO Antenna for Mm-Wave Applications</p> <p>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)</p> <p>17:20 Design of Compact Dual-Port Super Wideband MIMO Antennas for Communication Systems</p> <p>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 Teknologi Malaysia & Advanced RF and Microwave Research Group (ARFMRG), Malaysia); Fayad Ghawbar (Universiti Tun Hussein Onn Malaysia, Malaysia)</p> <p>17:40 Different Configurations of a Two-Element MIMO Antenna for Mutual Coupling Reduction in 5G Application</p> <p>Hamizan Yon (UiTM Shah Alam, Malaysia); Nurul Huda Abd Rahman (Universiti Teknologi MARA, Malaysia); Hadi Jumaat and Mohd Aris (Universiti Teknologi</p>	<p>17:00 OAM-Based Reflectarray Antenna for THz Indoor Communications</p> <p>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 Hosseinienejad and Rahim Tafazolli (University of Surrey, United Kingdom (Great Britain))</p> <p>17:20 Design and Simulation of Dipole Patch Antenna Using Graphene Sheet for UHF-RFID Application</p> <p>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, Yanti Erana Jalil, Noor Afeefah Nordin and Izhan Abdullah (Universiti Tenaga Nasional, Malaysia); Zainudin Yahya Yahya (UNITEN, Malaysia)</p> <p>17:40 Development of Thin Dielectric Lens Antenna for Small Focusing Spot in Human Body</p> <p>Amirah Abd Rahman and Kamilia Kamardin (Universiti Teknologi Malaysia, Malaysia); Yoshihide Yamada (Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia,</p>	<p>17:00 Microwave Biosensor Based on A Single Square Split Ring Resonator for Dielectric Constant Detection</p> <p>Adel Ashvayp (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)</p> <p>17:20 Design of a High Directive Sensor with SRR for Microwave Imaging Application</p> <p>Mohamad Zoinol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka & Hang Tuah Jaya, Malaysia); Nuruliswawa Abdullah (Universiti Teknikal Malaysia Melaka, Malaysia); Abd Shukur Ja'afar (Universiti Teknikal Malaysia Melaka, Malaysia & Center for Telecommunication Research & Innovation (CeTRI), Malaysia)</p> <p>17:40 PCA Analysis on Acoustic Emission Features of Coated Carbon Steel Substrate</p> <p>Noor A'in A. Rahman (University Teknologi Petronas, Malaysia); Muhammad Shazwan Mahmud and Zazilah May (Universiti Teknologi Petronas, Malaysia)</p>
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