



**WESTERN SYDNEY**  
UNIVERSITY



**International Conference on Electrical Engineering  
Research and Practice (iCEERP-2019) 24-28 Nov 2019  
Sydney, Australia**

**5<sup>th</sup> GCSTMR World Congress**

**Western Sydney University, Parramatta South Campus, Sydney, Australia**

[Corner of Victoria Road and James Ruse Drive (enter via Victoria Road), Parramatta]

**Organized by:**

*School of Computing, Engineering and Mathematics*

*Western Sydney University*

and

*Global Circle for Scientific, Technological and Management Research (GCSTMR)*

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## Day 1 – Sunday 24 Nov 2019

Time	Event	Remark
6:00 - 8:00 pm	<b>Registration, Refreshments and Networking</b> (Room EA.G.32)	Delegates will be welcomed by the General Chair Prof Ataur Rahman, conference chairs and the local organizing committee members.

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## Day 2 – Monday 25 November 2019

Time	Session
8:00 – 9:00 am	<b>Registration</b> Parramatta South Campus, Building EB, Room EB.G.02
9:00 – 9:30 am	<b>Conference Opening</b> Room EA.G.18, Parramatta South Campus
<b>9.30-10.00 am</b>	<b>Plenary Session 1- Chair: Prof Yang Xiang (Room EA.G.18)</b>
<b>9.30-10.00 am</b>	<b>Plenary 1: Advanced Technologies to Engineering a Better Sustainable World</b> , Dr Marlene Kanga, President, World Federation of Engineering Organisations (WFEO), UK
<b>10:00 –10:30 am</b>	<b>Panel Discussion – Sustainability in Education, Moderator A/Prof Sarah Zhang (Room EA.G.18)</b>
<b>10:30-11:00 am</b>	<b>Morning Tea (Room EB.G.02)</b>
<b>11:00 am-12:30pm</b>	<b>Plenary Session 2 - Chair: A/Prof Bahman Javadi and Prof Richard Yang (Room EA.G.18)</b>
11:00-11:30	Plenary 2: <b>Microservice for the convergence of IT technologies</b> , Prof Massimo Villari, University of Messina, Italy
11:30-12:00	Plenary 3: <b>Electrical Engineering and Tensors</b> , Prof Godfrey Lucas, Former Dean of Engineering, Western Sydney University, Australia
12:00-12:30	Plenary 4: <b>Augmenting Laboratories: improved linking of theory and reality</b> , Prof David Lowe, The University of Sydney, Australia
<b>12:30 -1:30 pm</b>	<b>Lunch (Room EB.G.02)</b>
<b>1:30-3:00 pm</b>	<b>Plenary Session 2 – Chair: A/Prof Mahmood Nagrial (Room EA.G.18)</b>
1:30-2:00	Plenary 5: <b>Blockchain for the Internet of Things: Challenges and Solutions</b> , Prof Salil Kanhere, University of New South Wales, Sydney, Australia
2:00 – 2:30	Keynote 1: <b>Power System Planning: The Art of Raising a Phoenix</b> Dr Nalin Pahalawaththa, Senior Technical Director, Power Systems, GHD Pty Ltd, Australia

2:30 -3:00	Keynote 2: <b>Emerging trends in communications: 5G and beyond</b> , Dr Nikhil Sharma, LNMIIT, India
<b>3:00 -3.30 pm</b>	<b>Afternoon Tea (Room EB.G.02)</b>
<b>3:30 – 5:00 pm</b>	<b>Plenary Session 3 – Chairs: A/Prof Surendra Shrestha and A/Prof Sarah Zhang (Room EA.G.18)</b>
3:30 – 4:00	Plenary 6: <b>Curriculum Innovation of Undergraduate Engineering Courses: A Practice on Sustainability Embedment</b> , Prof Richard Yang, Western Sydney University, Australia
4:00-4:30	Keynote 3: <b>Engineering Education in Bangladesh</b> , Prof Muhammed Alamgir, University Grants Commission, Bangladesh
4:30-5:00	Plenary 7: <b>Fusion Bonding and Consolidation of 3D Printed</b> Continuous Carbon Fibre Reinforced Polyamide Composites, Prof Lin Ye, The University of Sydney, Australia
5:00 -5:30	Keynote 4: <b>Nonlinear behaviours of wave-induced fluid oscillations</b> in the gap between two fixed barges, Prof Lin Lu, Dalian University of Technology, China

### Day 3 – Tuesday 26 Nov 2019

Time	Session
8:00 – 9:00 am	<b>Registration</b> , Parramatta South Campus (Room EB.G.02)
9:00-10:30 am	<b>iCEERP/ICIOTRP 2019: Joint Technical Session 1 (Room EA.G.18)</b> <b>IoT</b> <b>Chair: A/Prof Bahman Javadi</b>
9:00 – 9:30	Keynote: <b>Engineering Education in Australia: Current Trends</b> <i>Prof Roger Hadgraft, University of Technology Sydney, Australia</i>
9:30 – 10:00	Keynote: <b>Sensing and Making Sense of Cybersecurity in Internet of Things Networks</b> <i>Prof. Alana Maurushat, Western Sydney University, Australia</i>
10:00 – 10:20	IoT Enabled Smart School Bag with Cloud support for students, parents and school, <b>Jayadev Ajayakumar, Hamid Abdi and Naga Venkata Durga Surendra Anna</b>
10:20 – 10:40	Application of IoT and Crowdsensing to Better Manage Agriculture Pest Outbreaks, <b>Janagan Sivagnanasundaram, Athula Ginige and Jeevani Goonetillake</b>
<b>10:40 – 11:00 am</b>	<b>Morning Tea (Room EB.G.02)</b>
11:00 am–12:20 pm	<b>iCEERP 2019: Technical Session 2 (Room EA.G.18)</b> <b>Communications and Networking</b> <b>Chair: Dr U Gunawardana</b>
11:00-11:30	Invited paper: <b>Generalised relay outdatedness</b> , <i>A/Prof Khoa Le, Western Sydney University, Australia</i>
11:30-11:50	(30) Recent Developments in Halftone Based Image Watermarking, <b>Sunpreet Sharma, Ju Jia Zou and Gu Fang</b>
11:50-12:10	(26) Performance Analysis of DF Cooperative-NOMA System with QPSK-BPSK Scheme in the Presence of SIC Errors, <b>Sandhya Soni, Monika Jain, Divyang Rawal, Nikhil Sharma and Ranjith Liyanapathirana</b>
12:10-12:30	(46) Microwave Material Characterization of Geopolymer Concrete, <b>Bikesh Ghinangju, Ranjith Liyanapathirana and Robert Salama</b>
<b>12:30-1:30 pm</b>	<b>Lunch (Room EB.G.02)</b>

1:30-3:00 pm	<b>iCEERP 2019: Technical Session 3 (Room EA.G.18)</b> <b>Energy Systems I</b> <b>Chair: Dr Jeffrey Zou</b>
1:30-1:50	(17) Technical and Non-Technical losses in Single Phase Energy Metering, <i>Ranjit Perera, Nilush Jayawardana and Tilak Siyambalapitiya</i>
1:50-2:10	(4) Advanced HV Earthing System for Smart Substations, <b>Mohamad Nassereddine, Mahmood Nagrial, Jamal Rizk and Ali Hellany</b>
2:10-2:30	(40) Design optimization and simulation of Hybrid Renewable Energy Systems, <b>Mario Trape and Ali Hellany</b>
2:30-2:50	(38) Analysis of the Benefits of Switching Controlled Load for Solar PV, Prosumers, <b>Keith Mitchell and Mahmood Nagrial</b>
<b>3:00-3:30 pm</b>	<b>Afternoon Tea (Room EB.G.02)</b>
3:30-4:40 pm	<b>iCEERP 2019: Technical Session 4 (Room EA.G.18)</b> <b>Biomedical Engineering I</b> <b>Chair: Dr Ganesh Naik</b>
3:30-4:00	Invited Paper: <b>Towards a Low-Power, Minimally-Invasive Nerve Regeneration Implant</b> , <i>A/Prof Tara Hamilton, Macquarie University, Sydney, Australia</i>
4:00-4:20	(9) Comparison of bi-wavelength and tri-wavelength photoplethysmography sensors placed on the forehead, <b>Sally Longmore, Bin Jalaludin, Paul Breen and Gaetano Gargiulo</b>
4:20-4:40	(8) Einthoven Unipolar Leads: Towards better understanding of Wilson Central Terminal, <b>Hossein Moeinzadeh, Joseph Assad, Paolo Bifulco, Mario Cesarelli, Aiden O'loughlin, Ibrahim Shugman and Gaetano Gargiulo</b>
4:40-5:40 pm	<b>iCEERP 2019: Poster Session 1 (Room EA.G.18 Foyer)</b> <b>Chair: Md Mainul Islam</b>
4:40-4:55	(45) Design of an IoT-based Vehicle State Monitoring System Using Raspberry Pi, <b>Ahmed Binmasoud and Qi Cheng (Poster 1)</b>
4:55-5:10	(48) Dual-Band RFID Antenna Design for Infrastructure Health Monitoring, <b>Sarhan Missalot, Robert Salama, Ranjith Liyanapathirana and (Poster 2)</b>

5:10-5:25	(1) Photovoltaic-Based Distribution Generation System Integration Effects on the Power Quality Issues on Riyadh Electrical Distribution Network, <b>Meshal Al Shammari</b> and <i>Wonsuk Ko</i> (Poster 3)
5:25-5:40	(44) A real Case Study on Black Start Capability Assessment, <i>Salem Shuaib</i> and <b>Ali Asheibi</b> (Poster 4)
<b>7:30 – 9:30 pm</b>	<b>CONFERENCE DINNER (Only for the CONFERENCE DINNER ticket holders)</b>

### Day 4: Wednesday 27 Nov 2019

Time	Event
8:00 – 9:00	<b>Registration</b> Parramatta South Campus, Building EA Room EB.G.02
<b>9:00-10:30</b>	<b>iCEERP/iCIOTRP 2019: Joint Technical Session 5 (Room EA.G.18)</b> <b>Biomedical Engineering and IoT</b> <b>Chair: A/Prof Mahmood Nagrial</b>
9:00-9:30	Plenary: <b>Neuromorphic Engineering and Intelligent Sensors</b> , <i>Prof Andre van Schaik, Director,</i> <i>International Centre for Neuromorphic Systems (ICNS), Sydney, Australia</i>
9:30-10:00	Industry Speech: <b>Using Machine Learning, Edge Computing and IoT to rapidly build Video Analytics Solutions</b> <i>Craig Lawton</i> <i>IoT &amp; Smart Cities Specialist, Amazon Web Services</i>
10:00-10:20	Invited Speech: <b>Medical sensors for patient-controlled devices</b> , <i>Dr Jerry Zhou, Western Sydney University, Australia</i>

10:20-10:35	An improved PDR algorithm based on inertial sensor in a smart building , <b>Payal Tusharkumar Mahida, Seyed Shahrestani and Hon Cheung</b>
<b>10:30-11:00 am</b>	<b>Morning Tea (Room EB.G.02)</b>
<b>11:00 – 12:20</b>	<b>iCEERP 2019: Technical Session 6 (Room EA.G.18)</b> <b>Biomedical Engineering II</b> <b>Chair: Dr Gaetano Gargiulo</b>
11:00-11:20	(10) Characterization of Coated Piezo-resistive Fabric for Respiration Sensing, <b>Sami El Arja, Titus Jayarathna and Gaetano Gargiulo</b>
11:20-11:40	(24) Biometric Authentication for Dementia Patients with Recurrent Neural Network, <b>Farnaz Farid and Farhad Ahamed</b>
11:40-12:00	(12) Low Cost Analogue Front End for Electronic Stethoscopes Application with Silicone Enclosure, <b>Caitlin Polley, Emilio Andreozzi, Paolo Bifulco, Daniele Esposito, Ganesh Naik, Upul Gunawardana and Gaetano Gargiulo</b>
12:00-12:20	(11) Electrodeless FSR linear envelope signal for muscle contraction measurement, <b>Nawadita Parajuli, Felipe Ulloa, Neethu Sreenivasan, Ganesh Naik, Paolo Bifulco, Daniele Esposito, Sergio Savino, Mario Cesarelli, Tara Hamilton, Upul Gunawardana and Gaetano Gargiulo</b>
<b>12:20-1:20 pm</b>	<b>Lunch (Room EB.G.02)</b>
<b>1:20 – 3:00</b>	<b>iCEERP 2019: Technical Session 7 (Room EA.G.18)</b> <b>Energy Systems II</b> <b>Chair: Dr Ali Hellany</b>
1:20-1:40	(22) Optimal Sizing of Stand-alone PV System Using Grey Wolf Optimization, <b>Ashraf Khalil and Ali Asheibi</b>
1:40-2:00	(19) An Exact Method for Computing the Delay Margin for Power System Using Sweeping Test, <b>Ali Asheibi and Ashraf Khalil</b>
2:00-2:20	(5) Advanced PV System for Sustainable Housing: Maximum Output Power with Low Maintenance for Sandy Area, <b>Mohamad Nassereddine, Mahmood Nagrial, Jamal Rizk and Ali Hellany</b>
2:20-2:40	(16) A Review of Resonant Inductive Power Transfer for Electric Vehicles, <b>Mohammad Zamani, Mahmood Nagrial, Ali Hellany and Jamal Rizk</b>
2:40-3:00	(13) Neutral-point Voltage Control of Three-level NPC Inverter for Three-phase APF based on Zero-sequence Voltage Injection, <b>Muhammad Kashif, M.J Hossain, Vivek Sharma, S.M. Nawazish Ali and Asif Khan</b>
<b>3:00-3:30 pm</b>	<b>Afternoon Tea (Room EB.G.02)</b>



3:30-5:00	<b>iCEERP 2019: Technical Session 8 (Room EA.G.18)</b> <b>Electrical Machines and Drives</b> <b>Chair: Dr Jamal Rizk</b>
3:30-3:50	(6) Examination of Interior Winding Synchronous Motor with Improved Torque and Reduced AC Copper Loss, <b>Tatsuki Suzuki</b> , Masami Nirei, Manabu Horiuchi, Mitsuhide Sato, Yinggang Bu and Tsutomu Mizuno
3:50-4:10	(39) Design of High-Efficiency Synchronous Reluctance Machines, <b>Thushanthan Mohanarajah</b> , Mahmood Nagrial, Jamal Rizk and Ali Hellany
4:10-4:30	(7) Examination on Copper Loss Reduction of High-frequency Transformer for Using Magnetic Flux Path Control Technology, <b>Kazuma Kubota</b> , Kazuhiro Shimura, Kenta Torishima, Mitsuhide Sato, Yinggang Bu, Tsutomu Mizuno, Masayuki Sakurada, Takao Nebashi and Norio Koike
4:30-4:50	(28) Five-Level and Seven-Level DCMI fed to IPMSM, <b>Sree Lakshmi Gundebommu</b>
5:00-5:30	<b>Conference Closing and Awards (Room EA.G.18)</b>

### Day 5: Thursday 28 Nov 2019: Sight Seeing

Sight Seeing	Eligibility	Remark
10:00 am to 4:00 pm	Who have registered and paid for the visit.  Contact: <i>Ms Jenis Islam</i>	The bus will depart from Western Sydney Parramatta South Campus at 10:00 am in front of building EB (Bus Loop) and return the delegates to Western Sydney Parramatta South Campus at 4:00 pm ■

**Notes: Presenting Author** in bold