



17-20 October 2019

Hotel Grand Hyatt, Kochi, Kerala

Technology, Knowledge, and Society

Call for Paper - Special Session on

Solar PV Based Charging Infrastructure for Electric Vehicle Car Parking

The Auto industry is moving towards EV and clean energy initiatives motivate the renewable energy based infrastructure for electric vehicle charging instead of conventional grids. Also with the advancement of power electronics esp. GaN based switching devices results in reduced losses and reliability which is the key requirement in Electric Vehicle charging technologies. Together with Renewable Energy and fast switching power electronics technologies, Electric Vehicles charged quickly without polluting environment and allows further more grid integration of renewable energy systems. Hence this special session gives an opportunity to the researchers and industry not only to present their innovative ideas and current trends, but also to interact with leading researchers and experts from academia and industry to strengthen the research in this domain.

The main objective of this special session is to motivate and create a bridge between the young researchers, Students, Academicians, and entrepreneur. To share their knowledge in advanced technologies in Electric Vehicles and develop innovations in renewable energy based charging infrastructure for the Electric Vehicle car parking.

Topics of Interest include, but are not limited to...

1. New Topologies on Fast Charging DC Converter
2. PV-Battery based Smart charging
3. Grid to Vehicle(G-V) Charging
4. Vehicle to Grid (V-G) Charging
5. Wireless Charging Technologies – IPT and CPT
6. Integrated Battery Energy Management System(EMS) for Electric Vehicle
7. Artificial Intelligence based charging time prediction and forecasting
8. Any other related topic.

Special Session Organizer(s):

- **Dr UmashankarSubramaniam**,IEEE Senior Member,
Renewable Energy Lab, Prince Sultan University, Saudi Arabia
(usubramaniam@psu.edu.sa)
- **Dr DhaferAlmakhles**, IEEE Member,
Renewable Energy Lab, Prince Sultan University, Saudi Arabia, (dalmakhles@psu.edu.sa)
- **Dr WalidDyab**,IEEE Member,
Renewable Energy Lab, Prince Sultan University, Saudi Arabia (wdyab@psu.edu.sa)
- **Dr VignaKumaranRamachandramurthy**
Department of Electrical Power Engineering, UNITEN, Malaysia (vigna@uniten.edu.my)
- **Dr Sheldon Williamson**,
Professor and NSERC Canada Research Chair in Electric Energy Storage Systems for
Transportation Electrification,
Department of Electrical, Computer and Software Engineering,
Ontario Tech University,Ontario, Canada. (sheldon.williamson@uoit.ca)

Important dates:

Full Paper Submission	: June30, 2019
Notification of acceptance	: August15, 2019
Final Camera ready Submission of Full Manuscript	: August 30, 2019

Papers submitted for special sessions need to be peer-reviewed in the same way as submissions to the regular tracks. Papers should conform to the IEEE format and specifications. Authors are to be invited to submit full paper (Maximum 6 pages, double- column US letter size) as PDF using the IEEE templates. Template and submission system is available on the conference website: <http://www.tencon2019.org/>.

Biographies of Special Session Organisers:



Umashankar Subramaniam(M'09-SM'18) is working in Renewable energy Lab, College of Engineering, Prince Sultan University, Saudi Arabia has 15+ years of teaching, research and industrial R&D experience. Previously, he worked as Associate Professor and Head, VIT Vellore as well as Senior R&D and Senior Application Engineer in the field of power electronics, renewable Energy and electrical drives. He is a Senior member-IEEE, and Member of IACSIT, IDES and ISTE. He has taken charge as Vice Chair - IEEE Madras Section and Chair - IEEE Student Activities from 2018. He was executive member (2014-16) and Vice Chair of IEEE MAS Young Professional from 2017 by IEEE Madras Section. He has published more than 250+ research papers in national and international journals and conferences. He has also authored/co-authored/contributed 12 books/chapters and 12 technical articles on power electronics applications in renewable energy and allied areas. He is an Editor of Heliyon, an Elsevier journal. He received Danfoss Innovator Award-Mentor during 2014-15 & 2017-18, Research Award from VIT University during 2013-18. Also he received the INAE Summer Research Fellowship for the year 2014. Under his guidance 24 P.G students and more than 25 U.G Students completed the senior design project work. Also he supervised 6 PhD scholars and Masters Students. He is also involved in collaborative research projects with various international and national level organizations and research institutions.



DhaferAlmakhles (M'14) received B.E. degree in Electrical Engineering from King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia in 2006 and completed his Masters degree (Hons.) and PhD from The University of Auckland, New Zealand in 2011 and 2016, respectively. Since 2016, he has been with Prince Sultan University - Saudi Arabia. Currently he is an assistant professor with the department of Communications and Networks Engineering. He is serving as the Director of Science and Technology Unit and the leader of the renewable energy laboratory at PSU. He has authored many published articles in the area of control systems. He served as a reviewer for many journals including IEEE Transactions on Fuzzy Systems, Control of Network Systems, Industrial Electronics, Control Systems Technology and IEEE Control Systems Letters and International Journal of Control. His research interests include the hardware implementation of control theory, signal processing, networked control systems, nonlinear control design, unmanned aerial vehicle (UAV) and renewable energy.



Walid Dyab, working as Assistant Professor in Prince Sultan University, Saudi Arabia since Jan 2019. Working and studying in six different academic institutes gave me the sufficient amount of time and resources to establish a strong academic basis. In 2009, He joined Syracuse University to pursue a PhD degree and strengthen my academic knowledge specifically in the field of electromagnetics. Five years later, in December 2014, he successfully defended my dissertation on theoretical aspects of computational electromagnetics. After getting doctoral degree, he joined Poly-Grames research center in Montreal as a postdoctoral fellow, where he worked on different research projects in applied electromagnetics research. He had the opportunity to assist in teaching graduate and undergraduate classes in electrical engineering for eighteen semesters since I got my B.Sc. degree in 2003. From conducting tutorial and lab sessions, to supervising master and doctoral students in their projects and internships, he had led and motivated engineering students on various levels to pursue their own careers.



Prof Vigna completed his Bachelor's Degree and PhD in Electrical Engineering from University of Manchester Institute of Science and Technology (UMIST), United Kingdom in 2001. His area of interest includes power quality, power systems analysis, renewable energy and application of power electronics in power systems. He joined the Malaysian electrical utility, Tenaga Nasional Berhad as an electrical engineer in 2002. In 2005, he joined the academia and is presently a professor and Head of Power Systems in the Power Engineering Centre, Universiti Tenaga Nasional (UNITEN). He is also the Head of the Power Quality Research Group in UNITEN and a principal consultant for Tenaga Nasional Berhad. Prof Vigna has always advocated practical based research. His research and consultancy projects are closely linked with numerous industries, ranging from the manufacturing industries to renewable energy developers. He has active collaboration with government agencies, universities and industries, both in Malaysia and abroad. Prof Vigna has received many awards for research and leadership. In 2008, he received the 'IET Mike Sargeant Award' which is given to a young professional who is judged to have made significant achievements in career over a number of years globally. In 2009, he received the prestigious 'Institution of Engineers Malaysia Young Engineer Award'. Prof Vigna has completed many research and consultancy projects in power quality and power systems. He has also supervised and graduated more than 100 postgraduate students to date. In the professional front, he served in the following portfolios: Chairman of The Institution of Engineering and Technology (IET) Malaysia from 2009-2011, IET Council Member, Institution of Engineers Malaysia (IEM) Council Member, IET Younger Members Board representing West Asia, IET's International Professional Registration Advisor & Interviewer and the Convenor for

CEng in Malaysia. Prof Vigna is also a Chartered Engineer registered with the Engineering Council of UK and a Professional Engineer registered with the Board of Engineers Malaysia.



Sheldon S. Williamson, PhD, Canada Research Chair in Electric Energy Storage Systems for Transportation Electrification, and Associate Professor in the Department of Electrical, Computer and Software Engineering in the Faculty of Engineering and Applied Science, is leading groundbreaking research to extend the overall lifecycle of Lithium-ion batteries in electric vehicles using novel power electronic converter management systems. He is also focused on creating wireless and plugged fast-charging infrastructures for convenient use.

Notably, he is spearheading development of the world's first method for charging electric vehicles using solar power and he aims to establish a first-of-its-kind Advanced Storage Systems and Electric Transportation (ASSET) Laboratory, featuring a solar charging station, at UOIT. Motivated to shift Canada's transportation system from fossil fuels to renewables, his research also explores electrifying mass transit using ultracapacitors. Since joining UOIT in July 2014, Dr. Williamson has been the Founder and Director of the Smart Transportation Electrification and Energy Research (STEER) group. Previously, he was an Associate Professor in the Department of Electrical and Computer Engineering at Concordia University in Montreal. He received his Bachelor of Engineering in Electrical Engineering with high distinction from the University of Mumbai in India in 1999. In 2002, he earned his Master of Science and his Doctorate in 2006, both in Electrical Engineering, specializing in Automotive Power Electronics and Motor Drives from the Illinois Institute of Technology.

Noted author and co-author of over 150 papers, and several books and book chapters on electric transportation and energy storage systems, Dr. Williamson has garnered several Best Paper Awards. He is a Senior Member of IEEE and a distinguished lecturer of the IEEE Vehicular Technology Society.