

# International Conference on Energy, Power and Environment (Towards Clean Energy Technologies)



September 04 – 06, 2020  
National Institute of Technology Meghalaya, Shillong, India

**ICEPE 2020**

## ICEPE 2020 Special Session (SS-13)

### 1. Title of the special session

#### **Recent Trends and Innovation in Power Electronic Circuits and Systems for Clean Energy Integration, Technologies and Industrial solutions**

### 2. Aims & Scope of the Session:

Global climate change is one of the greatest challenges faced by the world today. To reduce its impact on mankind, many countries are concerned with the production of clean energy to meet their increased industrial and residential electricity needs. Renewable energy such as small hydro, Tidal, wind, solar power, and smaller combined heat and power generates no emissions thus making the environment more sustainable by reducing greenhouse gas emissions compared to conventional (fossil fuels based) electricity generation. Unfortunately, the electrical output of many clean energy resources is incompatible with the fixed frequency electricity supply network; as a result, it is necessary to develop suitable power electronic interfacing methods and industrial solutions to overcome this challenge. This Special session addresses the recent trends and technological advancements towards clean energy solutions.

### 3. Topics of interest include, but are not limited to:

- Fault-tolerant converters for renewable energy
- Fault-ride through capability of advanced power Converters
- Active and passive harmonic filters in industrial applications
- Smart inverters
- Power electronics for onshore and offshore wind farm integration
- Advanced power electronic interfaces for PV
- Power electronic applications in smart grid
- Power quality issues
- Reliable operation of grid-connected converters
- Industrial solutions for Clean Energy Technologies

### 4. Special Session Organizers:

A. Dr. Thaiyal Naayagi Ramasamy

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**R.T. Naayagi** (M'12–SM'15) received the bachelor's (Hons.) degree in electrical and electronics engineering with gold medal from Bharathidasan University, Tiruchirappalli, India, in 2000, the master's degree in information technology from Alagappa University, Karaikudi, India, in 2003, the master's (Hons.) degree in power electronics and drives with gold medal from Anna University, Chennai, India, in 2005, and the Ph.D. degree in electrical and electronic engineering from the University of Manchester, Manchester, U.K., in 2010. She held various roles as a Lecturer/Senior Lecturer/Professor in various institutions in India and U.K, from 2000 to 2006 and from 2010 to 2014. She is working for Newcastle University in Singapore (NUiS) since July 2014 where she is currently an Associate Professor in Electrical Power Engineering and Director of Excellence in Learning & Teaching and the Director for Equality, Diversity and Inclusion. Her research interests include renewable energy integration and applications in smart grid, power electronics for aerospace, electric vehicle applications, low carbon electrical energy systems, and power electronic solutions to sustainability.

Dr. Naayagi has received several merit certificates for her academic proficiency, including the Best Outgoing Female Graduate Award during her bachelor's and the Outstanding Master's Student Award. She is a first recipient of the Dorothy Hodgkin Post-Graduate Award from the School of Electrical and Electronic Engineering, University of Manchester, for her Ph.D., jointly sponsored by Rolls-Royce plc and the Engineering and Physical Sciences Research Council, U.K. She received the Woman Engineer Award from the Young Professionals Section Chennai, Institution of Engineering and Technology (IET), U.K., in 2012. She received the Newcastle University Teaching Award in 2016. She was elevated as Senior Member of the IEEE in 2015 and was awarded Senior Fellow status of the Higher Education Academy, UK in 2019. She is a steering committee member of NU Women, UK and a member of the Diversity Working Group at Newcastle University, UK and Academic Lead for Athena SWAN Bronze Award application at Newcastle University. She is the Chair of NUiS women in science and engineering network and has been organizing many events to promote young professionals especially young women in engineering and technology. She is the Chair of the IEEE Power and Energy Society, Singapore Chapter. She is an Associate Editor for IET Power Electronics journal and IEEE/CSEE Journal of Power and Energy Systems serves as a Reviewer for the IEEE, IET, and many other international journals and conferences.

#### **B. Prof. Gayadhar Panda**

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**Gayadhar Panda** (M'07–SM'19) received the bachelor's degree in electrical engineering from the Institute of Engineers, Kolkata, India, the Master's degree in power electronics from Bengal Engineering College (presently IEST), Shibpur, India, and the Ph.D. degree in electrical engineering from Utkal University, Bhubaneswar, India, in 1996, 1998, and 2007, respectively.

Since January 2013, he has been with the Department of Electrical Engineering, National Institute of Technology Meghalaya, Shillong, India where he is presently a Professor. He has more than 20 years of teaching experience. His current research interest includes automatic generation control, stability improvements, power quality, power electronic converters, and distributed power generation. He has served as head of the Department and chairman of various committees at Institute level. Currently, he is the Dean (AA) and Chief Vigilance Officer (CVO) at NIT Meghalaya. He has published more than 90 technical papers in national and international conferences proceedings / journals. He has received the Institution medal for obtaining the highest marks in graduation and the Power medal for his one of the research paper.