



5th Global Power, Energy and Communication Conference

Cappadocia/TURKIYE

June 14-16, 2023

Special Session on

“AI - Assisted Microgrid With High Renewable Penetrations”

In the present era, due to significant carbon emissions and racing oil prices, penetration of renewable energy sources in the power system and renewable based standalone microgrids are the key elements for the sustainable growth of any nation. Also, there are so many places around the globe where the conventional grid is not present, and transmission is very difficult. However, these places are enriched with renewable energy sources like solar, tidal, hydro, and wind. One of the major setbacks of renewable energy sources is their stochastic nature which, along with the stochastic load demand, severely affects the system frequency of microgrid. Also, due to its stochastic nature, one of the major challenging tasks is to obtain uninterrupted maximum power from these sources. The challenges mentioned above may be resolved fruitfully by applying Artificial intelligence (AI) assisted control schemes.

Topics of interest include, but are not limited to:

- Contributions of AI for emission-free energy systems
- Metaheuristic assisted control approach for microgrid
- Higher penetrations of renewables in conventional grid
- Extraction of maximum power from renewable energy sources
- Energy efficiency in microgrids
- Power control methods and algorithms
- Smart frequency management of standalone microgrid
- Grid connected electric vehicles (EVs)
- Contribution of EVs for frequency regulation of microgrid

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Pawan Kumar Pathak is currently working as an Assistant Professor in the School of Automation at Banasthali Vidyapith (Rajasthan, India). He did his B. Tech in Electrical and Electronics Engineering from GBTU, Lucknow (India) in 2013; ME (Hons.) in Power Electronics from RGPV Bhopal (India) in 2015 and completed his PhD in Electrical Engineering from Banasthali Vidyapith, India, in 2021. Dr Pathak has more than 7-years of teaching and research experience and published more than 25 research papers in Journals and Conferences of repute. Dr.

Pathak received the best paper award by IEEE-IMPACT 2022. His research interests include renewable energy, microgrid, battery charger, electric vehicles, nonlinear system, intelligent control, and meta-heuristics.



Sanjeevikumar Padmanaban (Member'12–Senior Member'15, IEEE) received a PhD in electrical engineering from the University of Bologna, Bologna, Italy, in 2012. He was an Associate Professor at VIT University from 2012 to 2013. In 2013, he joined the National Institute of Technology, India, as a Faculty Member. In 2014, he was invited as a Visiting Researcher at the Department of Electrical Engineering, Qatar University, Doha, Qatar, funded by the Qatar National Research Foundation (Government of Qatar). He continued his research activities with the Dublin Institute of Technology, Dublin, Ireland, in 2014.

Further, he served as an Associate Professor with the Department of Electrical and Electronics Engineering, University of Johannesburg, Johannesburg, South Africa, from 2016 to 2018. From March 2018 to February 2021, he has been an Assistant Professor at the Department of Energy Technology, Aalborg University, Esbjerg, Denmark. He continued his activities from March 2021 as an Associate Professor with the CTIF Global Capsule (CGC) Laboratory, Department of Business Development and Technology, Aarhus University, Herning, Denmark. He is a Full Professor in Electrical Power Engineering at the Department of Electrical Engineering, Information Technology, and Cybernetics, University of South-Eastern Norway, Norway.

S. Padmanaban has authored over 750+ scientific papers and received the Best Paper cum Most Excellence Research Paper Award from IET-SEISCON'13, IET-CEAT'16, IEEE-EECSI'19, IEEE-CENCON'19, and five best paper awards from ETAEERE'16 sponsored Lecture Notes in Electrical Engineering, Springer book. He is a Fellow of the Institution of Engineers, India, the Institution of Electronics and Telecommunication Engineers, India, and the Institution of Engineering and Technology, UK. He received a lifetime achievement award from Marquis Who's Who - USA 2017 for contributing to power electronics and renewable energy research. He is listed among the world's top 2% scientists (from 2019) by Stanford University USA. He is an Editor/Associate Editor/Editorial Board for refereed journals, in particular the IEEE SYSTEMS JOURNAL, IEEE Transaction on Industry Applications, IEEE ACCESS, *IET Power Electronics*, *IET Electronics Letters*, and Wiley-*International Transactions on Electrical Energy Systems*, Subject Editorial Board Member—*Energy Sources—Energies Journal*, MDPI, and the Subject Editor for the *IET Renewable Power Generation*, *IET Generation, Transmission and Distribution*, and *FACETS Journal* (Canada).

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Deadlines of the special session:

Full paper submission (maximum 6 pages):	March 26, 2023
Notification of acceptance:	April 30, 2023
Final submissions due:	May 14, 2023

All the instructions for paper submission are included at the conference website.

<https://gpecom.org/2023/guidelines/>