

# Annual Conference of the IEEE Industrial Electronics Society (IECON 2021)

## Special Session on

## “Hybrid Power Converters and Control Strategies for Integration of Renewables”

### Organized by

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## Call for Papers

Recently, Power Electronic Devices Configurations helps to develop better efficient and reliable DC-AC, DC-DC, AC-DC power converter that suits in between the Renewable resource resources e.g., Fuel cell, wind, PV panel, and utility Grid or energy storage battery pack. These power electronic devices setups play a vital function in managing the level of voltage and current and keep electrical power flow in renewable grid and electricity storage system. Owing to future viewpoints and present demands, hybrid electrical power converter arrangement gained popularity in the different renewable systems, grid-integration, Hybrid vehicle, Ferries/Ship, Electric Aircraft, u-inverter, E Vehicle Charging, V2G and G2V, automotive and energy backup system, etc. The Hybrid Power Electronics Configuration (HPEC) terms are chosen to specify power electronic devices setup which incorporates 2 or even more same/different conversion systems, 2 or more same/different energy sources, two or even more same/different energy backup system, etc. Various HPEC has been mounted in many nations, and the increasing renewables and power storage system market has established reliable systems using different combinations of power electronics innovations. In present-day, HPEC investigations discussed the advancement of more energy-efficient, reliable, cheaper, suitable, high voltage and current features, reduction in devices. In the recent past, many HPEC is recommended and emphasized using hybrid sustainable sources, power converters, recent control strategy.

This special session target towards the inspirations of the skilled professional and research group into a common system, to bring the current growth in Hybrid Power Electronics Configurations for eco-friendly and power storage modern technologies in terms of the hybrid power Electronic devices and circuits, advanced control approach, functionality, scientific modeling, design, cost optimization, modern control technologies, etc.

Topics of interest include, but are not limited to:

- DC-DC, DC-AC, AC-AC, and AC-DC Hybrid Power Converters.
- Power Electronics system and control for Ferries/Ship, Electric Aircraft.
- Power Electronics system and control for Village microgrids, Space  $\mu$ -grids.
- Power Electronics system and control for Starship/satellite.
- Power Electronics system for u-inverter, E Vehicle Charging, V2G and G2V.
- High-Frequency Converters- topology, control, and application.
- Hybrid Multilevel-, Switched capacitor-, Z Source-based Converters, etc.
- Reliable and efficient Hybrid Converter and system.
- Analysis, Loss distribution, and modeling of Hybrid System and Converters.

- Multiple Energy Source management and system.
- Hybrid Converter for Grid integration, Hybrid vehicle applications.

**Submissions Procedure:** All the instructions for paper submission are included in the conference website:  
<https://attend.ieee.org/iecon-2021/>

### Deadlines:

Full paper submission: June 25, 2021  
Paper acceptance notification: July 30, 2021  
Camera-ready paper submission: Aug. 27, 2021

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**M. S. BHASKAR (M'15-SM'20)** received the bachelor's degree in electronics and telecommunication engineering from the University of Mumbai, Mumbai, India in 2011 and a master's degree in power electronics and drives from the Vellore Institute of Technology, VIT University, India in 2014, and Ph.D. in Electrical and Electronic Engineering, University of Johannesburg, South Africa in 2019. He is with Renewable Energy Lab, Department of Communications and Networks Engineering, College of Engineering, Prince Sultan University, Riyadh, Saudi Arabia. He was a Post-Doctoral researcher with his Ph.D. tutor in the Department of Energy Technology, Aalborg University, Esbjerg, Denmark in 2019. He worked as a Researcher Assistant in the Department of Electrical Engineering, Qatar University, Doha, Qatar in 2018-2019. He worked as a Research Student with Power Quality Research Group, Department of Electrical Power Engineering, Universiti Tenaga Nasional (UNITEN), Kuala Lumpur, Malaysia in Aug/Sept 2017. He has authored 100 plus scientific papers with particular reference to DC/DC and DC/AC converter, and high gain converter, and received the Best Paper Research Paper Awards from IEEE-CENCON'19, IEEE-ICCPCT'14, IET-CEAT'16. He is a senior member of IEEE, IEEE Industrial Electronics, Power Electronics, Industrial Application, and Power and Energy, Robotics and Automation, Vehicular Technology Societies, Young Professionals, various IEEE Councils, and Technical Communities. He is a reviewer member of various international journals and conferences, including IEEE and IET. He received the IEEE ACCESS award "Reviewer of Month" in Jan 2019 for his valuable and thorough feedback on manuscripts, and for his quick turnaround on reviews. He is the Associate Editor of IET Power Electronics.



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