

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

Special Session on

“DC-DC Converters- Circuits, Modeling, Control and Applications”

Organized by

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Call for Papers

Renewable resources and power converters modern technologies play a crucial role in regulating voltage/ current for power circulation at various levels, specifically in Distribution Generators, Hybrid Vehicles, Satellite, Aerospace, and Microgrids Applications. Owing to the future viewpoints and existing needs, the intelligent modern DC-DC converter technologies earned attraction in adaption to new control and modelling techniques, different renewable resource systems, and brand-new generation DC-DC converter circuitry for various applications. Elements such as compatibility, expense, power density and ability, voltage or current conversion stability, reactive and semiconductor units dimension requirement/quantity, number of DC resources, effectiveness, control, integrity, and so on are essential to be for the reliable procedure and techno-economic understanding. Current past, a variety of power setups for DC-DC systems are suggested and emphasized by practical positioning of reactive parts and semiconductor tools to attain high voltage conversion ratio from comparatively reduced power renewable resource resources and adaption of innovative control Artificial Intelligence (AI) methods. This special session targets the specialist and research community's recommendations into a standard platform, to bring the current growth in converters power modern technologies regarding the power circuits, synthesis, mathematical modeling, layout, cost optimization, control, Artificial Intelligence innovations, techno-economic awareness, etc.

Topics of interest include, but are not limited to:

- High Voltage Gain Converters or High-Frequency Converters.
- Multiport-, Multilevel-, Switched inductor-, Switched capacitor-, Z Source-based DC-DC Converters, etc.
- Loss analysis and thermal modeling of HV DC-DC converter, Cost analysis, reliability, and stress analysis.
- DC-DC Converters: Application and techno-economic renewable energies integration.
- High Power Density and efficient DC-DC Converter.
- Topological survey and analysis of DC- DC Converter.
- Optimal design and Control of DC-DC Converter.
- Reduced voltage and current stress DC-DC Converters.

1 Good quality papers may be considered for publication in the IEEE Trans. on Industrial Electronics, subject to further rounds of review.

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

Organizers:



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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 master's degree in power electronics and drives from the Vellore Institute of Technology, VIT University, India in 2014, and PhD 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 PhD tutor in Department of Energy Technology, Aalborg University, Esbjerg, Denmark in 2019. He worked as a Researcher Assistant in Department of Electrical Engineering, Qatar University, Doha, Qatar in 2018-2019. He worked as 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 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 Associate Editor of IET Power Electronics.



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P. SANJEEVIKUMAR (M'12-SM'15, IEEE) received a Ph.D. degree in electrical engineering from the University of Bologna, Bologna, Italy 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 a Faculty Member with the Department of Energy Technology, Aalborg University, Esbjerg, Denmark. Since March 2021, he has been with

the CTIF Global Capsule (CGC) Laboratory, Department of Business Development and Technology, Aarhus University, Herning, Denmark.

P. Sanjeevikumar has authored over 300 scientific papers and was the recipient of 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 ETAERE'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, U.K. 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 FACTS journal (Canada).



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FREDE BLAABJERG (S'86-M'88-SM'97-F'03) was with ABB-Scandia, Randers, Denmark, from 1987 to 1988. From 1988 to 1992, he got the PhD degree in Electrical Engineering at Aalborg University in 1995. He became an Assistant Professor in 1992, an Associate Professor in 1996, and a Full Professor of power electronics and drives in 1998. From 2017 he became a Villum Investigator. He is honoris causa at University Politehnica Timisoara (UPT), Romania and Tallinn Technical University (TTU) in Estonia.

His current research interests include power electronics and its applications such as in wind turbines, PV systems, reliability, harmonics, and adjustable speed drives. He has published more than 600 journal papers in the fields of power electronics and its applications. He is the co-author of four monographs and editor of ten books in power electronics and its applications.

He has received 32 IEEE Prize Paper Awards, the IEEE PELS Distinguished Service Award in 2009, the EPE-PEMC Council Award in 2010, the IEEE William E. Newell Power Electronics Award 2014, the Villum Kann Rasmussen Research Award 2014, the Global Energy Prize in 2019, and the 2020 IEEE Edison Medal. He was the Editor-in-Chief of the IEEE Transactions on Power Electronics from 2006 to 2012. He has been Distinguished Lecturer for the IEEE Power Electronics Society from 2005 to 2007 and for the IEEE Industry Applications Society from 2010 to 2011 as well as 2017 to 2018. In 2019-2020 he serves a President of IEEE Power Electronics Society. He is Vice-President of the Danish Academy of Technical Sciences too. He is nominated in 2014-2019 by Thomson Reuters to be between the most 250 cited researchers in Engineering in the world. In 2017 he became Honoris Causa at University Politehnica Timisoara (UPT), Romania.