

## *Template for Special Session Proposal*

### **Title**

*Power Electronics in Renewable Energy Intelligent Microgrids*

### **Session organizers**



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*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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*Kamal Al-Haddad (Life Fellow, IEEE) received the B.Sc.A. and M.Sc.A. degrees in electrical engineering from the University of Québec à Trois-Rivières, Trois-Rivières, QC, Canada, in 1982 and 1984, respectively, and the Ph.D. degree in electrical engineering from the Institute National Polytechnique, Toulouse, France, in 1988. Since 1990, he has been a Professor with the Electrical Engineering Department, École de Technologie Supérieure (ÉTS), Montreal, QC, Canada, where he has been the holder of the senior Canada Research Chair in Electric Energy Conversion and Power Electronics since 2002. He is a Consultant and has established very solid link with many Canadian and international industries working in the field of power electronics, electric transportation, aeronautics, and telecommunications. He successfully transferred and implemented dozens of technologies to Canadian and international companies. His research interests include highly efficient static power converters, harmonics and reactive power control using hybrid filters, voltage level multiplier, resonant and multilevel converters, including the modeling, control, and development of prototypes for various industrial applications in electric traction, renewable energy, power supplies for drives, telecommunication, etc., Dr. Al-Haddad was the recipient of the 2014 IEEE IES Dr.-Ing. Eugene Mittelman Achievement Award and the IEEE Medal in Power Engineering. He is a Member of the Academy of Sciences and Fellow of the Royal Society of Canada and a Fellow Member of the Canadian Academy of Engineering. He is IEEE IES President 2016 and 2017, an Associate editor of IEEE Transactions on Industrial Informatics, and IES Distinguished Lecturer. He has been elected the IEEE 2022 division VI Director.*

### **Brief Description of the session thematic**

*Power electronics in renewable energy microgrids is a critical area of concern as societies worldwide strive for sustainable energy solutions. With the increasing integration of renewable sources like solar and wind into microgrid systems, the role of power electronics becomes pivotal in ensuring efficient energy conversion, storage, and distribution. Significantly, advancements in power electronics technologies directly impact the viability and performance of these microgrids, influencing their ability to operate autonomously or connect seamlessly with the main grid. Moreover, the deployment of power electronic converters directly contributes to enhanced grid stability, improved power quality, and effective control strategies. Addressing challenges in this domain is essential for achieving energy resilience, reducing carbon footprints, and fostering the widespread adoption of microgrid solutions. This special session seeks to explore and disseminate knowledge on the latest developments, fostering collaboration among researchers and practitioners to propel innovations that will shape the future of renewable energy microgrids.*

## Topics and Keywords

- *Advanced Power Converters for Renewable Energy Systems*
- *Control Strategies for Power Electronics in Microgrid Applications*
- *Integration of Energy Storage Systems with Power Electronics*
- *Grid-Forming Inverters for Microgrid Stability*
- *Power Quality Improvement Techniques in Renewable Microgrids*
- *Power Electronics Based Microgrids*
- *Power Electronic Converter for Microgrids.*
- *Protection of Microgrids*

## Number of pages

4 to 6 pages

## Deadlines

Full paper submission: **June 15th, 2024**

Paper acceptance notification: **August 30th, 2024**

Camera-ready paper submission: **September 15th, 2024**

## List of potential reviewers

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## Submissions Procedure

The instructions for the submission of are included in the conference website through the following link:

<https://icaige.recherche-scientifique.com/>