

Annual Conference of the IEEE Industrial Electronics Society (IECON 2022)

Special Session on

“FUTURE-PROOF POWER ELECTRONIC SYSTEMS AND CONTROL FOR RESIDENTIAL MICROGRIDS”

Organized by

Dmitri Vinnikov (dmitri.vinnikov@taltech.ee)
Tallinn University of Technology, Estonia

Enrique Romero-Cadaval (eromero@unex.es)
University of Extremadura, Spain

Joao Martins (jf.martins@fct.unl.pt)
Universidade Nova de Lisboa, Portugal

Roya Ahmadihangar (roya.ahmadi@taltech.ee)
Tallinn University of Technology, Estonia

Call for Papers

Thanks to rapid advances in semiconductor and packaging technologies as well as to the development of new power converter topologies, the power electronics is being increasingly employed in brand new applications, such as Electronic Power Distribution Systems, also known as Active Distribution Networks or Smart Grids. Depending on the power scale, such concepts could be applied either for a single building or for districts, thus facilitating larger shares of distributed energy generation and storage, demand-side efficiency and energy trading operations.

Addressing these new challenges is the main focus of this special session. We invite researchers from Academia and Industry to discuss technical challenges, exchange novel ideas, explore enabling technologies, and present R&D results related to power electronic systems, control, protection, communication and operation aspects in designing and implementing of different architectures and functionalities in emerging residential microgrids.

Topics of interest include, but are not limited to:

1	DC and hybrid AC/DC residential microgrid architectures and their optimal design methodologies
2	Solutions resolving interoperability issues and facilitating deployment of microgrids
3	Power electronics systems for efficient integration of distributed energy generators, energy storages and loads into residential microgrids
4	Active power filtering, load-sharing, islanding operation
5	Condition monitoring, intelligent protection, fault diagnosis and self-healing
6	Predictive maintenance, adaptive communication-based protection
7	Cyber security issues in residential microgrids
8	Power management strategies, distributed control and/or decentralized decision making
9	Operation and control of interconnected residential microgrids (i.e., microgrid communities)

Sponsoring IES Technical Committee(s):

IEEE IES Technical Committee on Power Electronics: <https://petc.ieee-ies.org/>

Submissions Procedure:

All the instructions for paper submission are included in the conference website: <https://iecon2022.org/>

Deadlines:

Full paper submission: April 15, 2022
Paper acceptance notification: June 17, 2022
Camera-ready paper submission: July 29, 2022