



## Distributed Generation, Microgrids and Smart Grids

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### Message from the Guest Editors

For microgrids, power electronics is essential for them to work, providing different control functions and hierarchical control levels that work parallel to the grid and islanding operation modes, beyond power flow control with the grid. The many distinct and adaptive architectures of microgrids can only be implemented because they use power converters extensively. For smart grids, power electronics is key at several points, from consumption to production, passing through transmission. Among them, one can outline an intelligent insertion in an embracing way to the power system, DG operation improvement, bidirectional power flow and agent-based controls, the integrated formation of smart microgrids, the transformation of the distribution system from passive to active, and new devices and techniques for a more advanced and flexible transmission system.

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## Message from the Editor-in-Chief

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