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Challenges and Prospects of Grid Support in Grid-Forming Inverters

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Message from the Guest Editors

Grid-forming converters are controlled to exhibit a voltage source-like behavior, similarly to synchronous generators, and to rapidly support the grid voltage during faults by reactive current injection.

However, due to the voltage source-like behavior, grid-forming converters are subject to overcurrent during faults and loss of synchronism with the grid. Therefore, effective control strategies for grid-forming converters to properly support the power grid during large disturbances are highly requested.

The topics of interest for this Special Issue include the following:

1. Transient stability of grid-forming converters: analysis and enhancement strategies;
2. Current limitation strategies in grid-forming converters;
3. Synchronization of grid-forming converters during grid faults and loss of synchronization problems;
4. Modeling of grid-forming converters for stability analysis;
5. Small-signal stability and control interactions in grid-forming converters;
6. Interactions between grid-forming and grid-following converters;
7. Inertia emulation in power converters.



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Special Issue



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Message from the Editor-in-Chief

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