## **Special Issue**

## New Trends in Grid-Forming Inverters for the Power Grid

## Message from the Guest Editors

The increased penetration of renewable energies and the transition to low-inertia and decentralized power systems have made grid-forming inverters (GFIs) a relevant topic of research and development. A GFI's ability to establish and regulate voltage and frequency is crucial to ensuring grid stability and resilience in modern and future power systems. This Special Issue aims to provide a comprehensive review of progress, challenges, and future direction for GFIs and their applications. We invite submissions on a wide range of topics related to GFIs, including, but not limited to, the following: Control strategies; Synthetic inertia and frequency stability; Black-start capabilities; Fault ridethrough and robustness; Integration with renewable energy systems: Coordination and scalability: Harmonic mitigation and power quality; Standardization and interoperability; Emerging applications; Simulation, testing, and real-world deployment;

### **Guest Editors**

Dr. Miguel A. Torres

Dr. Claudio Burgos-Mellado

Prof. Dr. Carlos R. Baier

### Deadline for manuscript submissions

30 April 2026



# Applied Sciences

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## **Editor-in-Chief**

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