

## Special Issue

# The Past, Present, and Future of Flywheel Energy Storage

### Message from the Guest Editors

Flywheel energy storage (FES) technology has been developing over the past fifty years. Recently, the application of FES, whether independent or mixed with lithium batteries, focuses on the flexible regulation of new energy power, developing beyond past applications such as dynamic UPS, rail transit energy recovery, and frequent peak shaving of independent energy systems. There are three trends in the future research and development of FES. Firstly, it is necessary to accumulate fatigue characteristic data for flywheel materials, identify flywheel fatigue life assessment methods, and develop the technology to detect the strength state of flywheels. The second challenge is the heat dissipation of the MW FES motor rotor under vacuum and magnetic levitation conditions. Thirdly, it is advisable to expand the FES application modes, build more flywheel array demonstration projects, test the short-term and high-frequency advantages of flywheel energy storage, and achieve the goals of usability, durability, and cost-effectiveness.

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### Deadline for manuscript submissions

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