CALL FOR PAPERS

PESA 2026

Singapore | November 13–15, 2026

2026 11th International Conference
on Power Electronics Systems and Applications

Important Dates

Submission Deadline	**October 5, 2026**
Notification Deadline	October 15, 2026
Registration Deadline	October 20, 2026

Special Session 4: Stability and Control of Grid-Forming Inverter-Based Power Systems

With the increasing penetration of renewable energy resources and energy storage systems, power-electronics-based inverters are rapidly replacing conventional synchronous generators (SGs) in modern power systems. Grid-forming (GFM) inverters have emerged as a key technology for future power grids due to their capability of providing voltage and frequency support. However, compared with conventional SGs, GFM inverters exhibit different dynamic characteristics and more complex control interactions, which introduce significant stability and control challenges. In addition, detailed controller parameters of commercial inverters are often unavailable in practical power systems, making black-box modeling increasingly important.

This Special Session focuses on recent advances in the stability analysis, modeling, and control of GFM inverter-based power systems, covering both small-signal and large-signal stability issues. The scope of this Special Session includes, but is not limited to, impedance-based and state-space-based modeling, oscillation mechanism analysis, transient stability analysis and assessment under large disturbances, fault ride-through strategies and characteristics, stability enhancement methods for both transient and small-signal dynamics, data-driven and AI-assisted black-box impedance modeling, and machine-learning-based transient stability analysis.

The session aims to provide an platform for researchers and engineers to exchange innovative ideas and discuss future directions in the stability analysis and control of GFM inverter-based power systems.

Chair: Yang Wu
Nanyang Technological University, Singapore

Co-Chair: Zhiheng Lin
Nanjing University of Aeronautics and Astronautics, China

Co-Chair: Yifan Zhang
Nanyang Technological University, Singapore

Publication

IEEE The accepted and presented papers will be published in the **PESA Conference Proceedings**. Conference content will be submitted for inclusion into **IEEE Xplore** and indexed by **Ei Compendex** and **Scopus**, etc.

- **PESA 2026 has been included in IEEE event list! (Read More)**
- **All past PESA proceedings are archived in IEEE Xplore and indexed by Ei Compendex and Scopus.**

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SCI Journal

Up to 20% of the outstanding PESA 2026 papers will be selected and recommended for review and potential publication in IAS Transactions and IAS Magazines (JCR-Q2).

Publication History

Accepted and presented papers of **10-year PESA** have been successfully published and indexed by **EI Compendex & Scopus**.

PESA 2024: Hong Kong, China - ISBN: ISBN: 979-8-3503-6580-1
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Submission Guidelines

Submission Link: https://www.easychair.org/my/conference?conf=pesa2026
Please select Special Session 4 after accessing the submission system.

Full Paper Template **Abstract Template**

Note:
~Full Paper (**No less than 4 pages normally, 10 pages maximum. 5-6 pages are recommended**, including all figures, tables, and references)
~Abstract (Within 300 words)
~Official language is **English** in paper/abstract writing and presenting
~Download the Full Paper/Abstract Template for proceedings and read **guidelines**.

Contact US

Conference Secretariat: Lynn S.L. Gong
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Conference Website: www.icpesa.net
Special Session Page: https://www.icpesa.net/special-session-4.html

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