Call for Papers

IEEE Transactions on Power Electronics (TPEL)

Special Section on Visionary Papers

Scheduled Publication Time: December 2025

The field of Power Electronics is undergoing a transformative shift driven by advancements in semiconductor technology, artificial intelligence, energy efficiency standards, and the growing demand for sustainable power solutions. As we move toward an era of electrification, renewable energy integration, and intelligent power management, it is essential to foster visionary perspectives that redefine the future of power electronics.

This special call for visionary papers seeks groundbreaking ideas, emerging paradigms, and forward-looking research that push the boundaries of current technological and theoretical frameworks. We encourage contributions that challenge conventional methodologies, propose disruptive innovations, and address the long-term challenges in power conversion, energy storage, and high-efficiency power systems. Potential topics of interest include, but are not limited to:

- Next-generation power semiconductor devices (e.g., GaN or SiC)
- Artificial intelligence and machine learning in power electronics
- Ultra-high efficiency and high-density power conversion architectures
- Wireless power transfer and energy harvesting
- Power electronics for space, aerospace, and extreme environments
- Quantum and neuromorphic computing applications in power electronics
- Breakthroughs in solid-state transformers and smart grid integration
- New paradigms in power management for IoT, automotive, and industrial systems

We invite researchers, industry leaders, and emerging scholars to contribute their insights and speculative visions for the future of power electronics. Papers should present novel ideas, theoretical advancements, or visionary concepts supported by preliminary research, modeling, or design considerations.

Selected papers will be featured in a special session dedicated to pioneering the next frontiers in power electronics. Join us in shaping the technological landscape and setting the course for the next generation of power electronics innovation. All manuscripts must be submitted through the TPEL Author Portal site. Submissions must be clearly marked "Visionary Paper" on the cover page and must select the Special Section titled "Visionary Papers" during the submission process. Manuscripts submitted for the special section will be reviewed separately and will be handled by the guest editorial board noted below.

Deadline for Submission of Manuscript: ~~June 30, 2025~~ Extended Until July 31, 2025

Guest Editors

Yaow-Ming Chen, National Taiwan Univ., Taiwan
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Timeline

Extended Until July 31, 2025 - Manuscripts Submission Deadline
August 15, 2025 – Revised Manuscripts Submission Deadline
September 15, 2025 – Final Acceptance Notification
September 30, 2025 – Manuscripts Forwarded to IEEE for Publication
December 2025 – Special Section Appears in IEEE TPEL