

We are pleased to present the proceedings of the IEEE PESS Conference 2024, organized by the IEEE PES Germany Chapter in cooperation with the Institute of Electrical Power Systems and High Voltage Engineering (IEEH) at TU Dresden. From October 21 to 23, 2024, this event brought together approximately 70 participants from academia, industry, and practice in Dresden to discuss current topics and innovations in the field of electrical power engineering.

The conference covered key topics such as inverter-based grids, grid modeling, and electricity market regulation, addressed both pressing challenges and innovative solutions. It provided an excellent platform for fostering exchange between early-career researchers and established professionals, creating up new opportunities for both research and practice application.

The conference was further enriched by keynote speeches delivered by distinguished experts, thematically organized sessions, and an excursion to HIGHVOLT Prüftechnik Dresden GmbH. All submitted contributions underwent a peer-review process to ensure the scientific quality of the presented work. The papers presented at the conference reflect the diversity and relevance of current research approaches, encompassing both theoretical studies and practical applications.

We would like to express our sincere gratitude to all authors and reviewers for their valuable contributions. Special thanks go to the conference supporters: HIGHVOLT Prüftechnik Dresden GmbH, Schneider Electric GmbH, SachsenEnergie AG, DIgSILENT GmbH, GE Vernova, 50Hertz Transmission GmbH, DNV Energy Systems Germany GmbH and VDE Dresden e.V. Their support was significant to the success of this event.

This conference proceeding represents a collection of cutting-edge insights that enrich the dialogue between academia and industry and inspire future developments of fundamental importance.

Dresden, November 2024  
IEEH at TU Dresden