

Preface

It is with great pleasure and profound delight that I extend a warm welcome to all participants of the 12th NEIS Conference.



We are honored to host a multitude of highly motivated researchers in Hamburg for our hybrid event.

In 2013, our journey began with the vision of a modest conference, emphasizing innovative approaches within the realm of electrical power systems. Our enduring mission has been, and continues to be, the presentation of cutting-edge research findings and the fostering of scholarly exchange between academia and industry. In 2016, we embraced the English language to create an international platform for emerging scientists, dedicated to promoting open and inspiring knowledge sharing, fresh approaches, and novel methodologies.

What was once known as the "Konferenz für Nachhaltige Energieversorgung und Integration von Speichern" or NEIS, has now evolved into the "NEIS Conference on Sustainable Energy Supply and Energy Storage Systems". Over the years, we have welcomed international keynote speakers and participants who have injected fresh perspectives and global connections into our community. Since 2017, the IEEE PES German Chapter Board has joined us as partners in organizing this conference, with additional support from the Cluster Renewable Energy Hamburg. We express our heartfelt gratitude to our collaboration partners for their invaluable support.

This year's conference continues to center its focus on electrical power grids and grid-related aspects, including load management, power system measurements and identification techniques, energy storage systems, and the integration of electric mobility into the grid. We received an impressive collection of over 60 abstract submissions. Following a rigorous review process, 34 full papers have been accepted for presentation and publication.

Our conference featured two thought-provoking keynote presentations. Prof. Jian Sun from the Department of Electrical, Computer, and Systems Engineering (ECSE) and Professor and Director of the Center for Future Energy Systems (CFES) of the Rensselaer Polytechnic Institute Troy, USA, presented the topic "Generalized Immittance-Based Stability Criteria".

Prof. Volker Staudt, Professor for Power Engineering and Power Electronics, Faculty for Electrical Engineering and Information Technology, Ruhr-University Bochum (RUB), Bochum, Germany delved into "Aspects of HVDC Breakers in HVDC Energy Transmission Systems based on self-commutated converter systems".

This year, our conference was enriched by exhibition booths, courtesy of morEnergy GmbH and Energieforschungsverbund Hamburg (EFH).

We extend our heartfelt thanks to our keynote and session speakers whose expertise greatly enriched the discussions during the conference sessions. Our appreciation extends to the session reviewers, the scientific advisory board, and the authors who presented their work, all of whom have contributed significantly to the quality of the conference.

This year, after the first day of the conference, we went on a boat tour together on the Elbe River and enjoyed the evening skyline of Hamburg from the water with good food and drinks.

Behind the scenes, our dedicated team of scientists and assistants ensured the seamless execution of this hybrid conference. This year's event was meticulously planned and expertly managed by the Organizing Committee, comprising Daniel Becker, Patrick Möbius, and Philipp Wagner. We extend our sincere gratitude to the committee and the entire support team for their unwavering dedication.

Organizing, planning, and executing this hybrid conference was, as always, a formidable task. We introduced an open live stream on our webpage as just one element of the intricate planning. We also utilized a central online conference management platform, streamlining the submission and registration processes. For the first time, we awarded prizes for the best presentations in each session, which boosted the motivation of our already highly motivated contributors even further. We thank everyone involved for the countless hours dedicated to managing this conference with excellence.

Lastly, our gratitude extends to Manuel Sommer and his team from the HSU Media Centre for providing invaluable audio-visual media equipment and support.

As NEISbear, our renowned polar bear, celebrated its third birthday as the conference mascot, wearing a red t-shirt this year around, it has become a symbol of the collective commitment to reducing the climate impact of energy production, transmission, and usage. The bear's journey, from an unexpected laboratory visitor to a beloved conference mascot, is not only a tale of resilience but also a powerful reminder that, even in the face of adversity, positive change is attainable.

We are very pleased that students of the Kunstschule Wandsbek (Wandsbek Art School) created a video for us telling the full story of the NEISbear. Please enjoy this video on our conference website: neis-conference.com

We look forward to seeing you again at the next NEIS conference on September 15th and 16th, 2025, as a hybrid event with both virtual and in-person attendance in Hamburg!



Detlef Schulz

Hamburg, October 2024