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Date: Friday, September 13, 2024

Time: 1 - 1:50 pm

Location: D2 Lect2

Zoom Meeting ID: 970 7656 5407

Passcode: 477211

On the Integration of Hydrogen into Hybrid Energy Systems:

Reliability Assessment, Optimal Operation and Planning

Abstract: The growing focus on hydrogen as a promising energy carrier has been pivotal in the pursuit of net-zero emissions within integrated energy systems. As part of this endeavor, extensive research has been conducted to delve into the reliability aspects of power-gas integrated energy systems. Additionally, our study looks at optimizing operations by incorporating hydrogen into these systems, addressing critical constraints and uncertainties pertaining to energy flow. Finally, the development of a sophisticated coordinated planning model tailored specifically for power-gas-hydrogen integrated energy systems is discussed. These comprehensive models aim to enhance the efficiency of energy integration and contribute to sustainability and the overarching goal of cost-effectiveness in the evolution of energy infrastructure.

Short Bio: Dr. Jianhui Wang is the Mary and Richard Templeton Centennial Chair Professor with the Department of Electrical and Computer Engineering at Southern Methodist University. His research interests include smart grid, microgrids, power system operation and control, renewable integration, grid resilience and cybersecurity. Dr. Wang is a 2018 -2023 Clarivate Analytics highly cited researcher for production of multiple highly cited papers that rank in the top 1% by citations for field and year in Web of Science. He is a Fellow of IEEE.