Uses real world case studies to present the key technologies of design and application of the synchronous generator excitation system

This book systematically introduces the important technologies of design and application of the synchronous generator excitation system, including the three-phase bridge rectifier circuit, diode rectifier for separate excitation, brushless excitation system and the static self-stimulation excitation system. It fuses discussions on specific topics and basic theories, providing a detailed description of the theories essential for synchronous generators in the analysis of excitation systems.

*Design and Application of Modern Synchronous Generator Excitation Systems* provides a cutting-edge examination of excitation system, addressing conventional hydro-turbines, pumped storage units, steam turbines, and nuclear power units. It looks at the features and performance of the excitation system of the 700MW hydro-turbine deployed at the Three Gorges Hydropower Plant spanning the Yangtze River in China, as well as the working principle and start-up procedure of the static frequency converter (SFC) of pumped storage units. It also expounds on the composition of the excitation transformer, power rectifier, de-excitation equipment, and automatic excitation regulator—in addition to the performance features of the excitation system of conventional 600/1000MW turbines and the excitation system of the 1000MW nuclear power unit.

- Presents cutting-edge technologies of the excitation system from a unique engineering perspective
- Offers broad appeal to power system engineers who require a better understanding of excitation systems
- Addresses hydro-turbines, pumped storage units, steam turbines, and nuclear power units
• Provides an interdisciplinary examination of a range of applications

• Written by a senior expert in the area of excitation systems

Written by an author with over 50 years' experience, Design and Application of Modern Synchronous Generator Excitation Systems is an excellent text that offers an interdisciplinary exposition for professionals, researchers, and academics alike.

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**ABOUT THE AUTHOR**

**Jicheng Li, Professor**, is Senior Engineer and Consultant Research Fellow of the National Key Laboratory of Power Systems, Tsinghua University, China. He is one of the expert panel members for the excitation system bid evaluation for the major hydropower projects represented by the Three Gorges, Longtan, Jinghong, and Lawaxi hydropower plants in China.

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