Design of an automatic voltage stabilization system for a three-phase AC generator

Duong Ngoc Minh

Abstract: This topic focuses on designing and implementing an automation system to stabilize the voltage of three-phase AC generators, meeting the need to enhance operational performance and improve the reliability of electrical systems. The context of the topic is defined by the necessity of strict voltage management in an increasingly complex energy environment. The objective of the research is to build a comprehensive solution encompassing both theoretical and experimental studies, aimed at improving power quality and overall system stability. The research methodology is based on a combination of modern control algorithms with automated measurement tools, ensuring high accuracy and wide applicability in practice. The expected outcome of this topic is a flexible and efficient system for managing the voltage of three-phase AC generators, making a significant contribution to the sustainable development of the energy industry.

Keywords: Automation system, Voltage control, Three-phase generator