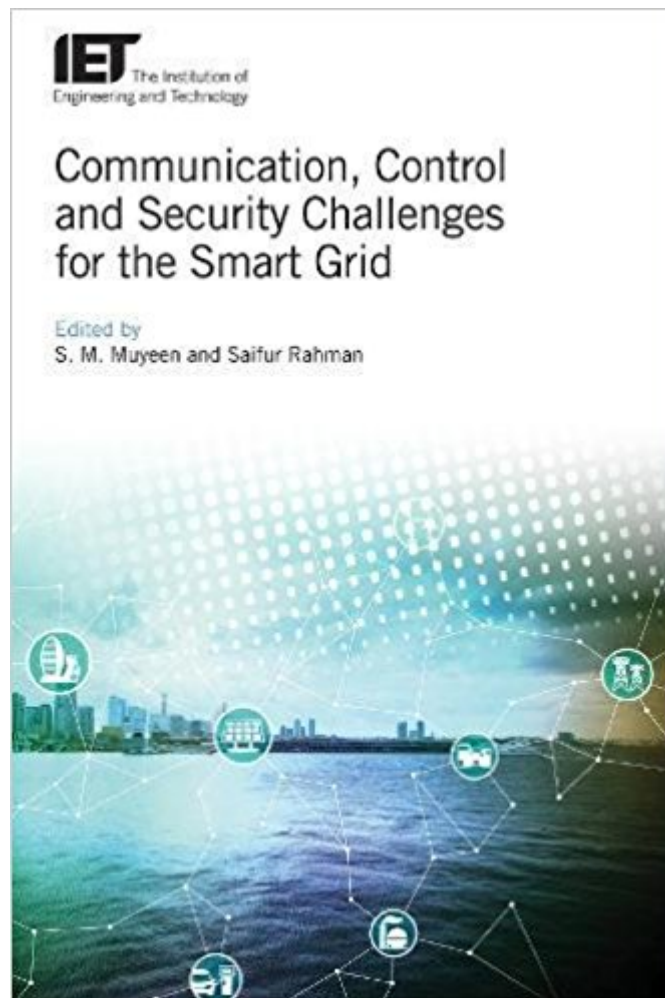




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Communication, Control And Security Challenges For The Smart Grid (Iet Power And Energy)



Synopsis

The Smart Grid is a modern electricity grid allowing for distributed, renewable intermittent generation, partly owned by consumers. This requires advanced control and communication technologies in order to provide high quality power supply and secure generation, transmission and distribution. This book outlines these emerging technologies. This essential reading focuses specifically on security and control aspects of the smart grid. It covers various related topics including smart grid architecture; communications and networking features; measuring and sensing devices; and smart transmission and distribution. Particular emphasis is placed on security, reliability, and stability features. Different control aspects of smart grid are also covered. Each chapter includes examples, case studies, simulations and experimental results, making this a practical and essential resource for professional researchers and advanced students alike. Topics covered include:

- * An introduction to smart grid architecture
- * Smart grid communications and standards
- * Measurement and sensing devices for smart grids
- * Smart transmission and wide area monitoring system
- * Bad data detection in smart grids
- * Optimal energy management in smart grids
- * Communication and control for the smart grid
- * Smart consumer systems
- * Importance of energy storage systems in smart grids
- * Control and optimisation for integration of plug-in vehicles in smart grids
- * Multi-agent based control of smart grids
- * Compressive sensing for smart grid security and reliability
- * Optimum placement of FACTS devices in smart grids
- * Security analysis of smart grid
- * Smart grid security policies and regulations

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Customer Reviews

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