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| Autore | Li Yan |
| Titolo | Cyber-Physical Microgrids / / by Yan Li |
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| ISBN | 3-030-80724-X |
| Edizione | [1st ed. 2022.] |
| Descrizione fisica | 1 online resource (207 pages) |
| Collana | Energy Series |
| Disciplina | 621.31 |
| Soggetti | Electric power distribution<br>Cooperating objects (Computer systems)<br>Electric power production<br>Energy policy<br>Energy and state<br>Energy Grids and Networks<br>Cyber-Physical Systems<br>Electrical Power Engineering<br>Energy Policy, Economics and Management |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Overview of Cyber-Physical Microgrids -- Photovoltaic -- Micro-Turbine -- Power Electronics Interfaces -- Modeling of Microgrids -- Stability Analysis of Microgrids -- Cyber-Communication Network for Microgrids -- Cyber-Attacks and Defense in Microgrids -- Appendix. |
| Sommario/riassunto | This textbook provides students with an overview of cyber-physical microgrid networks and an in-depth introduction to photovoltaics, batteries, flywheel, supercapacitor, micro-turbines, wind generation, power-electronic interfaces, modeling and stability analysis of microgrids, and cyber-communication networks and security. The text helps upper-level undergraduate and graduate students gain a foundational understanding of microgrids and renewable energy, and offers an introduction to the frontier of theoretical research and practical applications of cyber-physical systems, paving the way to uncover and understand the operational mechanism of cyber-physical |

microgrids. The book includes examples and test systems throughout for problem-solving and will be an essential resource for students, researchers, and professionals in power engineering. Explains the dynamic modeling of typical renewable energy resources; Demonstrates the theoretical analysis of microgrid stability and security; Includes extensive examples to explain complicated dynamic control and theoretical analysis.