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| Autore | Andújar Márquez José Manuel |
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| Soggetti | Electric power distribution Renewable energy sources Energy storage Wind power Solar energy Energy Grids and Networks Renewable Energy Mechanical and Thermal Energy Storage Wind Energy Solar Thermal Energy |
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| Nota di contenuto | Introduction -- Energy Storage systems: Fundamentals and Classification -- Batteries. Analysis, modelling and applications -- Hydrogen-based storage. Analysis, modelling and applications -- Technical comparative -- Discussion. |
| Sommario/riassunto | This book examines different energy storage technologies, empowering the reader to make informed decisions on which system is best suited for their specific needs. Decarbonization is a crucial step towards a sustainable future, and renewable energy plays a vital role in making this transition possible. However, the intermittency of some sources such as wind and solar energy requires the use of energy storage |

systems. The book contains a detailed study of the fundamental principles of energy storage operation, a mathematical model for real-time state-of-charge analysis, and a technical analysis of the latest research trends, providing a comprehensive guide to energy storage systems. From battery storage systems to hydrogen storage systems, this book provides the tools to effectively manage energy and ensure that excess energy is utilized during times of deficit and signposts the likely future development and lines of research enquiry for each technology discussed. The book is of interest to researchers and professionals in energy, and engineers interested in the transition to more sustainable energy systems.
