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Altri autori (Persone)	ChakrabortySudipta SimoesMarcelo G KramerWilliam E
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Nota di contenuto	1.Introduction -- 2.Fundamentals of Power Electronics -- 3. Photovoltaic Power Electronics -- 4.Wind Power Generation -- 5.Small Hydroelectric Systems -- 6.Fuel Cell System -- 7.Variable Speed Power Generation -- 8.Microturbines -- 9.Battery Energy Storage System (BESS) -- 10.Fast Response Energy Storage systems -- 11. Modular Power Electronics -- 12.Resource Aggregation Using Microgrids -- 13.Power Electronics for Smart Distribution Grids -- 14. Advanced Electric Vehicles -- 15.Multi-Agent Technology for Power System Control.
Sommario/riassunto	While most books approach power electronics and renewable energy as two separate subjects, Power Electronics for Renewable and Distributed Energy Systems takes an integrative approach; discussing power electronic converters topologies, controls and integration that are specific to the renewable and distributed energy system applications. An overview of power electronic technologies is followed by the introduction of various renewable and distributed energy resources that includes photovoltaics, wind, small hydroelectric, fuel cells,

microturbines and variable speed generation. Energy storage systems such as battery and fast response storage systems are discussed along with application-specific examples. After setting forth the fundamentals, the chapters focus on more complex topics such as modular power electronics, microgrids and smart grids for integrating renewable and distributed energy. Emerging topics such as advanced electric vehicles and distributed control paradigm for power system control are discussed in the last two chapters. With contributions from subject matter experts, the diagrams and detailed examples provided in each chapter make *Power Electronics for Renewable and Distributed Energy Systems* a sourcebook for electrical engineers and consultants working to deploy various renewable and distributed energy systems and can serve as a comprehensive guide for the upper-level undergraduates and graduate students across the globe.

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