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Sommario/riassunto

This book consists of two parts. The first part studies selected recent developed strategies of control and management for renewable energy resources. The strategies of control are tested in the presence of unbalance power, voltage faults, frequency deviation, wind speed variation and parametric uncertainties. The second part is especially focused on study of hybrid photovoltaic (PV)-Concentrated solar power (CSP) coupled to a thermal storage system. It gathers a set of chapters covering recent survey literature, modelling and optimization of hybrid PV-CSP power plants. In this part, a detailed model of hybrid PV-CSP with thermal storage system is presented and smart optimization techniques like particle swarm optimization (PSO) and genetic algorithm (GA) are also described and used to optimally design the hybrid PV-CSP renewable energy system. The book would be interesting to most academic undergraduate, postgraduates, researchers on renewable energy systems in terms of modeling, optimization and control, as well as the satisfaction of grid code requirements. Also, it provides an excellent background to renewable energy sources, it is an excellent choice for energy engineers, researchers, system operators, and graduate students. This book can used as a good reference for the academic research on the smart grid, power control, integration of renewable energy sources, and related to this or used in Ph.D study of control, optimisation, management problems and their application in field engineering.