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Titolo	Advanced Control and Optimization Paradigms for Wind Energy Systems [[electronic resource] /] / edited by Radu-Emil Precup, Tariq Kamal, Syed Zulqadar Hassan
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Nota di contenuto	Nonlinear Modeling, Analysis and Simulation of Wind Turbine Control System With and Without Pitch Control as in Industry -- Distributed Cooperative Control of Wind Farms with On-site Battery Energy Storage Systems -- Sensitivity Analysis of Frequency Regulation Parameters in Power Systems with Wind Generation -- Wind Turbines Integration into Power Systems: Advanced Control Strategy for Harmonics Mitigation -- Power Conversion and Predictive Control of Wind Energy Conversion Systems -- Adaptive Guaranteed Performance Control of Wind Energy Systems -- Machine Learning and Meta-heuristic Algorithms For Renewable Energy: A Systematic Review -- Design of a supervisory control system based on fuzzy logic for a hybrid system comprising wind power, battery and ultracapacitor energy storage system -- Neural-based P-Q Decoupled Control for Doubly Fed Induction Generator in Wind Generation System -- An Indirect Adaptive Control Paradigm for Wind Generation Systems.
Sommario/riassunto	This book presents advanced studies on the conversion efficiency, mechanical reliability, and the quality of power related to wind energy systems. The main concern regarding such systems is reconciling the highly intermittent nature of the primary source (wind speed) with the

demand for high-quality electrical energy and system stability. This means that wind energy conversion within the standard parameters imposed by the energy market and power industry is unachievable without optimization and control. The book discusses the rapid growth of control and optimization paradigms and applies them to wind energy systems: new controllers, new computational approaches, new applications, new algorithms, and new obstacles.