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Sommario/riassunto

A practical, hands-on guide to capturing the potential of DFIM technology. Doubly Fed Induction Machine (DFIM)-based wind turbines have proven to be a cost-effective, efficient, and reliable method for generating power. Readers interested in DFIM technology can turn to this text to discover not only the current state of the technology and future directions for research and development, but also learn the tools they need to devise their own innovations and solutions. Doubly Fed Induction Machine offers clear mathematical descriptions of basic dynamic DFIM models as well as a detailed steady-state analysis. The authors provide a more sophisticated model of a DFIM that takes into account grid disturbances such as voltage dips and balance disruptions. The second part of the book surveys DFIM control strategies. Readers will learn about standard solutions used by wind turbine manufacturers, new developments designed to improve the behavior of high-power wind turbines, as well as hardware-based solutions that address faulty grid scenarios. The book concludes with a

forecast of the future of DFIMs. This book is an ideal, practical reference for engineers, researchers, and students interested in fully learning the power generation capabilities of DFIM technology. This book helps readers grasp and apply complex concepts by using numerous aids throughout including: Diagrams and graphs. Step-by-step calculations. Illustrations and photos of DFIM components and systems.
