Power Electronics for Renewable and Distributed Energy Systems



Edited by Sudipta Chakraborty, Marcelo G. Simões, and William E. Kramer Springer-Verlag, London, 2013, 609 pages,

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ower electronics play an important role in the development of modern smart grids as well as renewable and distributed energy systems. Therefore, this new book edited and coauthored by a world-renowned team of specialists in this area is a great asset to industry. The editors have invited key people from their research area to share their perspective, and the foreword is written by a leading researcher in renewable energy systems, Prof. Frede Blaabjerg from Aalborg University, Denmark.

The book *Power Electronics for Renewable and Distributed Energy Systems* is divided into 15 chapters:

1) "Introduction"—Marcelo G. Simões and Sudipta Chakraborty

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- 2) "Fundamentals of Power Electronics"—Edison R.C. da Silva and Malik E. Elbuluk
- 3) "Photovoltaic Power Electronics"—Felix A. Farret
- 4) "Wind Power Generation"—Mohit Singh, Eduard Muljadi, Vahan Gevorgian, and Surya Santoso
- 5) "Small Hydroelectric Systems"— Felix A. Farret, Marcelo G. Simões, and Ademar Michels
- 6) "Fuel Cell System"—Fei Gao, Mohammad Kabalo, Marek S. Rylko, Benjamin Blunier, and Abdellatif Miraoui
- "Variable-Speed Power Generation"—Wlodzimierz Koczara and Grzegorz Iwanski
- 8) "Microturbines"—Stephen Gillette and Mark Gilbreth
- 9) "Battery Energy Storage System"—Stan Atcitty, Jason Neely, David Ingersoll, Abbas Akhil, and Karen Waldrip
- 10) "Fast Response Energy Storage Systems"—Juan M. Carrasco, Eduardo Galván, Sergio Vázquez, Luis García-Tabarés, and Marcos Lafoz
- 11) "Modular Power Electronics"—Sudipta Chakraborty
- 12) "Resource Aggregation Using Microgrids"—Giri Venkataramanan and Sandeep Bala
- 13) "Power Electronics for Smart Distribution Grids"—Danilo I. Brandão, Renata Carnieletto, Phuong H. Nguyen,

Paulo F. Ribeiro, Marcelo G. Simões, and Siddharth Suryanarayanan

- 14) "Advanced Electric Vehicles"— Giampaolo Carli, Arash Shafiei, and Sheldon S. Williamson
- 15) "Multi-Agent Technology for Power System Control"—Robin Roche, Fabrice Lauri, Benjamin Blunier, Abdellatif Miraoui, and Abderraf ìâa Koukam.

All of the chapters are well written and richly illustrated, and the material is easy to read. A table of contents, hundreds of references (presented in each chapter), and an index are also included.

Power Electronics for Renewable and Distributed Energy Systems is a valuable tool for graduate researchers, practicing engineers, and scientists working in renewable and distributed energy systems. The book provides the needed technical background of each subject. Therefore, it is also suitable for senior undergraduates and master's level students of electrical engineering and power systems and faculty members interested in modern power electronic energy systems.

> —Marian P. Kazmierkowski Warsaw University of Technology, Poland

