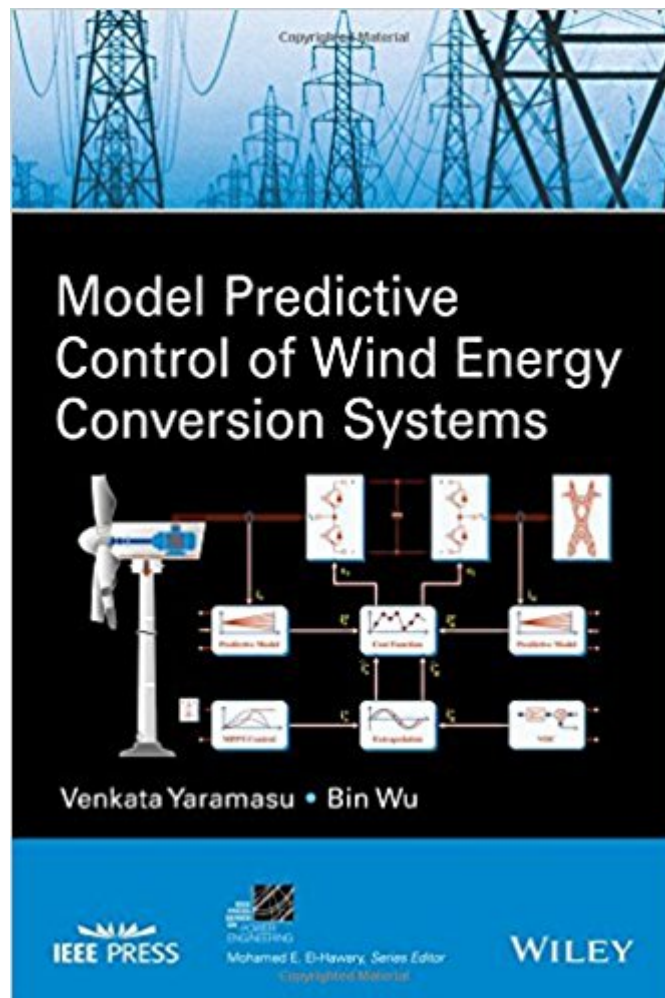


The book was found

Model Predictive Control Of Wind Energy Conversion Systems (IEEE Press Series On Power Engineering)



Synopsis

Model Predictive Control of Wind Energy Conversion Systems addresses the predictive control strategy that has emerged as a promising digital control tool within the field of power electronics, variable-speed motor drives, and energy conversion systems. The authors provide a comprehensive analysis on the model predictive control of power converters employed in a wide variety of variable-speed wind energy conversion systems (WECS). The contents of this book includes an overview of wind energy system configurations, power converters for variable-speed WECS, digital control techniques, MPC, modeling of power converters and wind generators for MPC design. Other topics include the mapping of continuous-time models to discrete-time models by various exact, approximate, and quasi-exact discretization methods, modeling and control of wind turbine grid-side two-level and multilevel voltage source converters. The authors also focus on the MPC of several power converter configurations for full variable-speed permanent magnet synchronous generator based WECS, squirrel-cage induction generator based WECS, and semi-variable-speed doubly fed induction generator based WECS. Furthermore, this book: Analyzes a wide variety of practical WECS, illustrating important concepts with case studies, simulations, and experimental results Provides a step-by-step design procedure for the development of predictive control schemes for various WECS configurations Describes continuous- and discrete-time modeling of wind generators and power converters, weighting factor selection, discretization methods, and extrapolation techniques Presents useful material for other power electronic applications such as variable-speed motor drives, power quality conditioners, electric vehicles, photovoltaic energy systems, distributed generation, and high-voltage direct current transmission. Explores S-Function Builder programming in MATLAB environment to implement various MPC strategies through the companion website Reflecting the latest technologies in the field, Model Predictive Control of Wind Energy Conversion Systems is a valuable reference for academic researchers, practicing engineers, and other professionals. It can also be used as a textbook for graduate-level and advanced undergraduate courses.

Book Information

Series: IEEE Press Series on Power Engineering

Hardcover: 512 pages

Publisher: Wiley-IEEE Press; 1 edition (December 19, 2016)

Language: English

ISBN-10: 1118988582

ISBN-13: 978-1118988589

Product Dimensions: 7.5 x 1.2 x 10.1 inches

Shipping Weight: 2 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #878,597 in Books (See Top 100 in Books) #32 in Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Alternative & Renewable > Wind #311 in Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Fossil Fuels #4814 in Books > Science & Math > Nature & Ecology > Conservation

Customer Reviews

Venkata Yaramasu is currently working as an Assistant Professor of Electrical Engineering in the School of Informatics, Computing, and Cyber Systems, Northern Arizona University, USA. He has published more than 50 peer-reviewed technical papers including 22 journal papers, and 10 technical reports for the industry. Dr. Yaramasu worked closely with Rockwell Automation, Toronto Hydro, Hydro One, Natural Sciences and Engineering Research Council of Canada, Wind Energy Strategic Network and Connect Canada, and completed 8 industrial projects in Power Electronics, Electric Drives and Renewable Energy. Dr. Yaramasu is recipient of over 15 awards for research and teaching excellence. Bin Wu is currently a Professor in the Department of Electrical and Computer Engineering, Ryerson University, Canada and is the Senior NSERC/Rockwell Automation Industrial Research Chair in Power Electronics and Electric Drives. Dr. Wu has published more than 350 peer-reviewed technical papers, two Wiley-IEEE Press books, and holds more than 30 issued and pending patents in power electronics, adjustable-speed drives and renewable energy systems. He is a Fellow of the Institute of Electrical and Electronic Engineers (IEEE), Engineering Institute of Canada (EIC), and Canadian Academy of Engineering (CAE). Dr. Wu is a Registered Professional Engineer in the Province of Ontario, Canada.

[Download to continue reading...](#)

Model Predictive Control of Wind Energy Conversion Systems (IEEE Press Series on Power Engineering) Doubly Fed Induction Machine: Modeling and Control for Wind Energy Generation (IEEE Press Series on Power Engineering) Energy Harvesting: Solar, Wind, and Ocean Energy Conversion Systems (Energy, Power Electronics, and Machines) Solar Power: The Ultimate Guide to Solar Power Energy and Lower Bills: (Off Grid Solar Power Systems, Home Solar Power System) (Living Off Grid, Wind And Solar Power Systems) Power Conversion and Control of Wind Energy Systems Wind Power Basics: The Ultimate Guide to Wind Energy Systems and Wind Generators

for Homes Industrial Power Distribution (IEEE Press Series on Power Engineering) Electric Power System Basics for the Nonelectrical Professional (IEEE Press Series on Power Engineering) Power System Harmonics and Passive Filter Designs (IEEE Press Series on Power Engineering) Wind Power Guide - how to use wind energy to generate power (OneToRemember Energy Guides Book 1) IEEE Guide to the Collection and Presentation of Electrical, Electronic, Sensing Component, and Mechanical Equipment Reliability Data for Nuclear-Pow (IEEE Std 500-1977) Off-Grid Living: How To Build Wind Turbine, Solar Panels And Micro Hydroelectric Generator To Power Up Your House: (Wind Power, Hydropower, Solar Energy, Power Generation) Electrical Insulation for Rotating Machines: Design, Evaluation, Aging, Testing, and Repair (IEEE Press Series on Power Engineering) Cash in the Wind: How to Build a Wind Farm Using Skystream and 442SR Wind Turbines for Home Power Energy Net-Metering and Sell Electricity Back to the Grid Cash In The Wind: How to Build a Wind Farm with Skystream and 442SR Wind Turbines for Home Power Energy Net Metering and Sell Electricity Back to the Grid Model Predictive Control of High Power Converters and Industrial Drives Wind Energy Basics: A Guide to Home and Community-Scale Wind-Energy Systems, 2nd Edition Wind Energy Basics: A Guide to Home and Community Scale Wind-Energy Systems Solar Energy: The Physics and Engineering of Photovoltaic Conversion, Technologies and Systems CMOS Circuit Design, Layout, and Simulation, 3rd Edition (IEEE Press Series on Microelectronic Systems)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)