1. Record Nr. UNINA9910811411103321

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Titolo	Predictive control of power converters and electrical drives / / Jose Rodriguez Perez and Patricio Cortes
Pubbl/distr/stampa	Chichester, West Sussex ; ; Hoboken, N.J., : John Wiley & Sons, Ltd., 2012
ISBN	1-119-94264-0 1-280-58858-6 9786613618412 1-119-94144-X 1-119-94145-8
Edizione	[1st edition]
Descrizione fisica	1 online resource (250 p.)
Collana	Wiley - IEEE ; ; 44
Altri autori (Persone)	EstayPatricio Cortes
Disciplina	621.3815/322
Soggetti	Electric driving - Automatic control Electric current converters - Automatic control Predictive control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Matter -- Introduction. Introduction -- Classical Control Methods for Power Converters and Drives -- Model Predictive Control -- Model Predictive Control Applied to Power Converters. Predictive Control of a Three-Phase Inverter -- Predictive Control of a Three-Phase Neutral-Point Clamped Inverter -- Control of an Active Front-End Rectifier -- Control of a Matrix Converter -- Model Predictive Control Applied to Motor Drives. Predictive Control of Induction Machines -- Predictive Control of Permanent Magnet Synchronous Motors -- Design and Implementation Issues of Model Predictive Control. Cost Function Selection -- Weighting Factor Design -- Delay Compensation -- Effect of Model Parameter Errors -- Appendix A: Predictive Control Simulation Three-Phase Inverter -- Appendix B: Predictive Control Simulation Torque Control of an Induction Machine Fed by a Two-Level Voltage Source Inverter -- Appendix C: Predictive Control Simulation Matrix Converter -- Index.
Sommario/riassunto	The application Model Predictive Control (MPC) controls electrical

energy with the use of power converters and offers a highly flexible alternative to the use of modulators and linear controllers. This new approach takes into account the discrete and nonlinear nature of the power converters and drives and promises to have a strong impact on control in power electronics in the coming decades.Predictive Control of Power Converters and Electrical Drives provides a comprehensive overview of the general principles and current research into MPC and is ideal for engineers, specialists and researchers needing: . a straightforward explanation of the theory and implementation of predictive control;. analysis on classical converter control methods and electrical drives control methods;. application examples and case studies demonstrating how control schemes have been implemented;. practice in running their own MATLAB(R) simulations through the companion website.With the information provided, power electronics specialists will be able to start applying this new control technique. This book will help electrical, electronics and control engineers, R&D engineers, product development engineers working in power electronics and drives, and industry engineers of power conversions and motor drives. It is also a complete reference for university researchers, graduate and senior-level undergraduate students of electrical and electronics engineering, academic control specialists, and academics in electrical drives.URL: www.wiley.com/go/rodriguez_control.