1. Record Nr. UNINA9910483180103321

Autore	Zhang Ridong
Titolo	Model Predictive Control [[electronic resource]] : Approaches Based on the Extended State Space Model and Extended Non-minimal State Space Model / / by Ridong Zhang, Anke Xue, Furong Gao
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2019
ISBN	981-13-0083-6
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (xv, 137 pages) : illustrations
Disciplina	629.8
Soggetti	Systems theory Mathematical optimization Control and Systems Theory Systems Theory, Control Calculus of Variations and Optimal Control; Optimization Energy Efficiency
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Model Predictive Control Based on Extended State Space Model -- Predictive Functional Control Based on Extended State Space Model -- Model Predictive Control Based on Extended Non-Minimal State Space Model -- Predictive Functional Control Based on Extended Non-minimal State Space Model -- Model Predictive Control Under Constraints -- PID Control Using Extended Non-minimal State Space Model Optimization -- Closed-loop System Performance Analysis -- Model Predictive Control Performance Optimized by Genetic Algorithm -- Industrial Application -- Further Ideas on MPC and PFC Using Relaxed Constrained Optimization.
Sommario/riassunto	This monograph introduces the authors' work on model predictive control system design using extended state space and extended non-minimal state space approaches. It systematically describes model predictive control design for chemical processes, including the basic control algorithms, the extension to predictive functional control, constrained control, closed-loop system analysis, model predictive control optimization-based PID control, genetic algorithm

optimization-based model predictive control, and industrial applications. Providing important insights, useful methods and practical algorithms that can be used in chemical process control and optimization, it offers a valuable resource for researchers, scientists and engineers in the field of process system engineering and control engineering. .