

1. Record Nr.	UNINA9910254163903321
Titolo	Fractional Order Control and Synchronization of Chaotic Systems // edited by Ahmad Taher Azar, Sundarapandian Vaidyanathan, Adel Ouannas
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-50249-2
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XII, 877 p. 468 illus., 175 illus. in color.)
Collana	Studies in Computational Intelligence, , 1860-949X ; ; 688
Disciplina	003.857
Soggetti	Computational intelligence Control engineering Electrical engineering System theory Computational Intelligence Control and Systems Theory Communications Engineering, Networks Systems Theory, Control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1 Comparative Study on Fractional Order PID and PID Controllers on Noise Suppression for Manipulator Trajectory Control.- Chapter 2 Control of the Temperature of a Finite Diffusive Interface Medium using the CRONE Controller.-Chapter 3 Grey Predictor Assisted Fuzzy and Fractional Order Fuzzy Control of a Moving Cart Inverted Pendulum.-Chapter 4 H Design with Fractional-Order PID Type Controllers.-Chapter 5 On the Electronic Realizations of Fractional-Order Phase-Lead-Lag Compensators with OpAmps and FPAA's -- Chapter 6 Robust Adaptive Supervisory Fractional Order Controller for Optimal Energy Management in Wind Turbine with Battery Storage.- Chapter 7 Robust Adaptive Interval Type-2 Fuzzy Synchronization for a Class of Fractional Order Chaotic Systems -- Chapter 8 Optimal Fractional Order Proportional-Integral-Differential Controller for Inverted Pendulum with Reduced Order Linear Quadratic Regulator.-

Chapter 9 Towards a Robust Fractional Order PID Stabilizer for Electric Power Systems.-Chapter 10 Application of Fractional Order Controllers on Experimental and Simulation Model of Hydraulic Servo System.

Sommario/riassunto

The book reports on the latest advances in and applications of fractional order control and synchronization of chaotic systems, explaining the concepts involved in a clear, matter-of-fact style. It consists of 30 original contributions written by eminent scientists and active researchers in the field that address theories, methods and applications in a number of research areas related to fractional order control and synchronization of chaotic systems, such as: fractional chaotic systems, hyperchaotic systems, complex systems, fractional order discrete chaotic systems, chaos control, chaos synchronization, jerk circuits, fractional chaotic systems with hidden attractors, neural network, fuzzy logic controllers, behavioral modeling, robust and adaptive control, sliding mode control, different types of synchronization, circuit realization of chaotic systems, etc. In addition to providing readers extensive information on chaos fundamentals, fractional calculus, fractional differential equations, fractional control and stability, the book also discusses key applications of fractional order chaotic systems, as well as multidisciplinary solutions developed via control modeling. As such, it offers the perfect reference guide for graduate students, researchers and practitioners in the areas of fractional order control systems and fractional order chaotic systems.
