1. Record Nr. UNINA9910254313803321

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Titolo	Introduction to Multicopter Design and Control / / by Quan Quan
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2017
ISBN	981-10-3382-X
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XXVI, 384 p. 205 illus., 128 illus. in color.)
Disciplina	629.1331352
Soggetti	Robotics Automation Automatic control Aerospace engineering Astronautics Robotics and Automation Control and Systems Theory Aerospace Technology and Astronautics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- PART I DESIGN -- Basic Composition -- Configuration and Structural Design -- Modeling and evaluation of propulsion system -- PART II MODELING -- Coordinate system and attitude representation -- Dynamic model and parameter identification -- PART III ESTIMATION -- Sensor model and calibration -- Observability and Kalman filter -- State estimation -- PART IV CONTROL -- Stability and Controllability -- Low-Level Flight Control -- Position Control based on SemiAutonomous Autopilot -- PART V DECISION -- Mission Decision-Making -- Health Evaluation and Failsafe -- Outlook.
Sommario/riassunto	This book is the first textbook specially on multicopter systems in the world. It provides a comprehensive overview of multicopter systems, rather than focusing on a single method or technique. The fifteen chapters are divided into five parts, covering the topics of multicopter design, modeling, state estimation, control, and decision-making. It differs from other books in the field in three major respects: it is basic and practical, offering self-contained content and presenting hands-on

methods; it is comprehensive and systematic; and it is timely. It is also closely related to the autopilot that users often employ today and provides insights into the code employed. As such, it offers a valuable resource for anyone interested in multicopters, including students, teachers, researchers, and engineers.