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Titolo	Adaptive hybrid control of quadrotor drones // Nihal Dalwadi, Dipankar Deb, and Stepan Ozana
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ISBN	981-19-9744-6
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (188 pages)
Collana	Studies in Systems, Decision and Control, , 2198-4190 ; ; 461
Disciplina	629.1326
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Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1: Introduction -- Chapter 2: Disturbance Observer-Based Backstepping Control of Tail-sitter UAVs -- Chapter 3: Energy Efficient Bi-Quadrotor Powered by Li-ion Battery for Payload Delivery -- Chapter 4: Adaptive Backstepping Controller Design Of Quadrotor Biplane For Payload Delivery -- Chapter 5: Biplane Trajectory Tracking Using Hybrid Controller Based On Backstepping And Integral Terminal Sliding Mode Control -- Chapter 6: Observer Based Rotor Failure Compensation For Biplane Quadrotor With Slung Load -- Chapter 7: Dual Observer Based Adaptive Hybrid Controller For Hybrid UAV -- Chapter 8: Biplane Quadrotor With Total Rotor Failure: A Novel Approach.
Sommario/riassunto	This book discusses the dynamics of a tail-sitter quadrotor and biplane quadrotor-type hybrid unmanned aerial vehicles (UAVs) and, based on it, various nonlinear controllers design like backstepping control (BSC), ITSMC (Integral Terminal Sliding Mode Control), and hybrid controller (BSC + ITSMC). It discusses single and multiple observer-based control strategies to handle external disturbances like wind gusts and estimate states. It covers the dynamics of slung load with a biplane quadrotor and a control architecture to handle the effect of partial rotor failure with wind gusts acting on it. An anti-swing control to prevent damage to the slung load and a deflecting surface-based total rotor failure compensation strategy to prevent damage to the biplane quadrotor are also discussed in this book. The monograph will be helpful for undergraduate and post-graduate students as well as researchers in

their advanced studies.

2. Record Nr.	UNISA996207715403316
Titolo	2006 Annual Reliability and Maintainability Symposium
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Descrizione fisica	1 online resource
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Soggetti	Maintainability (Engineering)
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