

1. Record Nr.	UNINA9910743255503321
Autore	Zhao Ling
Titolo	Pneumatic Servo Systems Analysis : Control and Application in Robotic Systems / / by Ling Zhao, Yuanqing Xia, Hongjiu Yang, Jinhui Zhang
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2022
ISBN	981-16-9514-8 981-16-9515-6
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (325 pages)
Collana	Advances in Industrial Control, , 2193-1577
Disciplina	629.8045
Soggetti	Automatic control Robotics Automation Mechatronics Control, Robotics, Automation Control and Systems Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Control Methods for Pneumatic Servo Systems -- Platform Introduction -- Linear Feedback Control -- Nonlinear Feedback Control -- Sliding Mode Control -- Platform Introduction -- Back-stepping Control.
Sommario/riassunto	This book focuses on pneumatic servo systems analysis, control and application in robotic systems. The pneumatic servo systems are composed by pneumatic artificial muscles or cylinders, which are two important pneumatic actuators in industrial application. The active disturbance rejection control technique is used effectively to solve strong nonlinearity and uncertain factors for the pneumatic servo systems. Nonlinear feedback control, back-stepping control, finite-time control, sliding mode control and several other control laws are proposed to make the pneumatic servo systems have better control performances. The book establishes a fundamental framework for this topic, while emphasizing the importance of integrated analysis. The book is intended for undergraduate and graduate students who are interested in this field and engineers working on the applications of

pneumatic servo systems. Advances in Industrial Control reports and encourages the transfer of technology in control engineering. The rapid development of control technology has an impact on all areas of the control discipline. The series offers an opportunity for researchers to present an extended exposition of new work in all aspects of industrial control.
