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Nota di contenuto	Introduction -- Mathematical Preliminaries -- Permanent Magnet Brushed DC-Motor -- Permanent Magnet Synchronous Motor -- Induction Motor -- Switched Reluctance Motor -- Synchronous Reluctance Motor -- Bipolar Permanent Magnet Stepper Motor -- Brushless DC-Motor -- Magnetic Levitation Systems and Microelectromechanical Systems -- Trajectory Tracking for Robot Manipulators Equipped With PM Synchronous Motors -- PID Control of Robot Manipulators Equipped with SRMs.
Sommario/riassunto	This book introduces a passivity-based approach which simplifies the controller design task for AC motors. It presents the application of this novel approach to several classes of AC motors, magnetic levitation systems, microelectromechanical systems (MEMS) and rigid robot manipulators actuated by AC-motors. The novel passivity-based approach exploits the fact that the natural energy exchange existing between the mechanical and the electrical subsystems allows the natural cancellation of several high order terms during the stability analysis. This allows the authors to present come of the simplest controllers proposed in scientific literature, but provided with formal stability proofs. These simple control laws will be of use to

practitioners as they are robust with respect to numerical errors and noise amplification, and are provided with tuning guidelines. Energy-based Control of Electromechanical Systems is intended for both theorists and practitioners. Therefore, the stability proofs are not based on abstract mathematical ideas but Lyapunov stability theory. Several interpretations of the proofs are given along the body of the book using simple energy ideas and the complete proofs are included in appendices. The complete modeling of each motor studied is also presented, allowing for a thorough understanding. 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.