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Collana	Studies in Systems, Decision and Control, , 2198-4182 ; ; 75
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Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Part I: Electric Drives and Motion Control -- Part II: Electric Drives and Fault-Tolerant Control -- Part III: Design and Control of Power Converters.
Sommario/riassunto	This contributed volume is written by key specialists working in multidisciplinary fields in electrical engineering, linking control theory, power electronics, artificial neural networks, embedded controllers and signal processing. The authors of each chapter report the state of the art of the various topics addressed and present results of their own research, laboratory experiments and successful applications. The presented solutions concentrate on three main areas of interest: · motion control in complex electromechanical systems, including sensorless control; · fault diagnosis and fault tolerant control of electric drives; · new control algorithms for power electronics converters. The chapters and the complete book possess strong monograph attributes. Important practical and theoretical problems are deeply and accurately presented on the background of an exhaustive state-of the art review. Many results are completely new and were never published before.

Well-known control methods like field oriented control (FOC) or direct torque control (DTC) are referred as a starting point for modifications or are used for comparison. Among numerous control theories used to solve particular problems are: nonlinear control, robust control, adaptive control, Lyapunov techniques, observer design, model predictive control, neural control, sliding mode control, signal filtration and processing, fault diagnosis, and fault tolerant control.