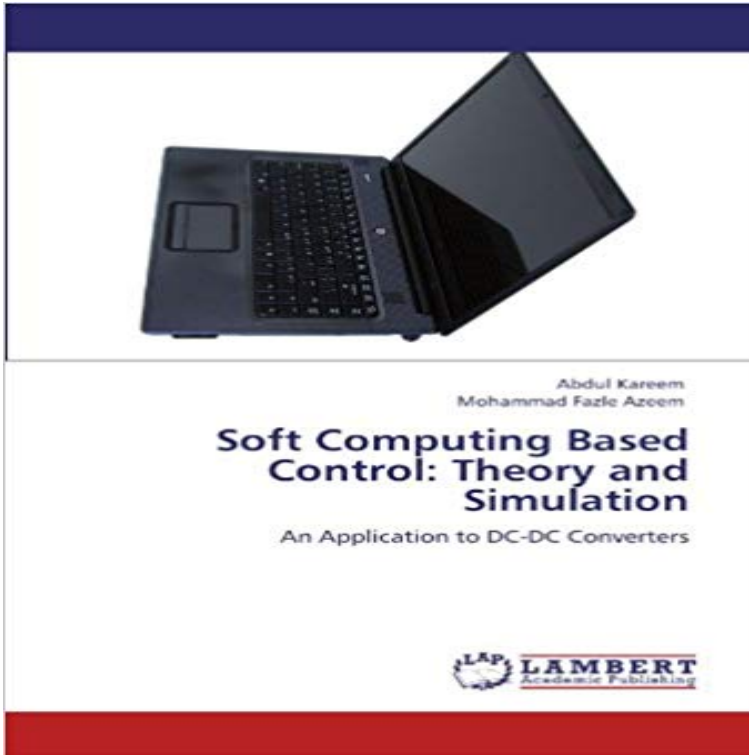


Soft Computing Based Control: Theory and Simulation: An Application to DC-DC Converters



Most physical plants are nonlinear in nature and coupled with uncertain dynamics due to external disturbances or unmodeled nonlinearities or even unpredictable faults. In many cases, a good response of complex and highly nonlinear real process is difficult to obtain by applying conventional techniques based on linear mathematical models of the process. The performance of the conventional controller deteriorates as the operating point changes. Also, non-linear dynamical systems are difficult to control due to the unstable and even chaotic behaviors and uncertainties that may occur in these systems. In the present industrial scenario, it is required to have automatic control with good performance over a wide operating range with simple design and implementation. The application of Soft Computing techniques is a good alternative for controlling non-linear dynamical systems with uncertainties in real-world problems. This book deals with Soft Computing based algorithms for the control of dynamic uncertain systems. In this book, the design of algorithms with DC-DC Converter as an example are discussed. Also, the simulations based on Matlab/Simulink are presented.

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