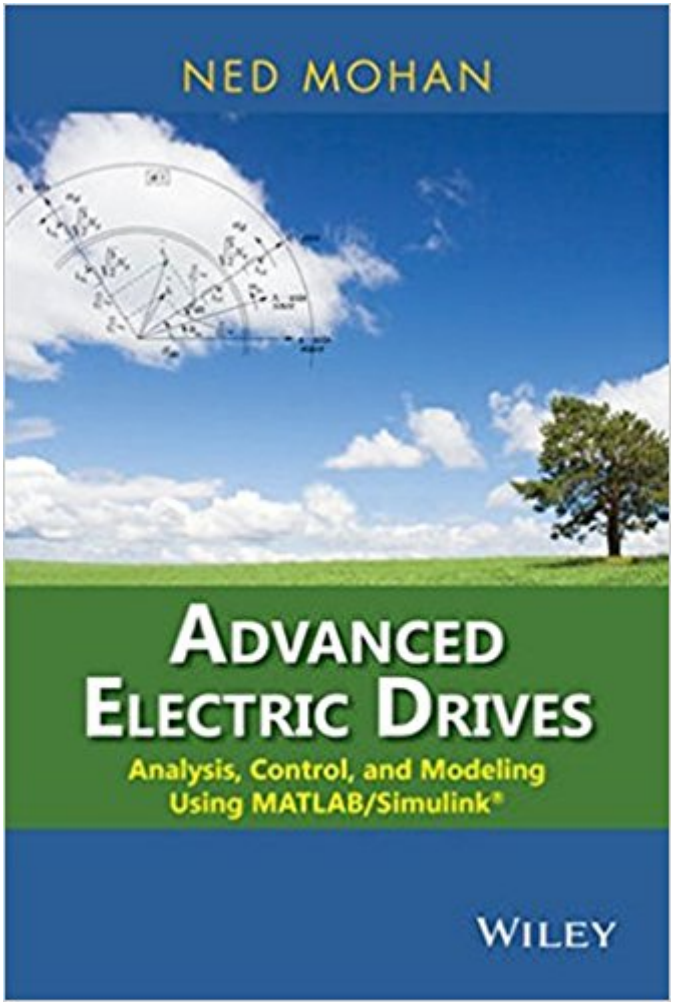
Advanced Electric Drives: Analysis, Control, And Modeling Using MATLAB / Simulink



Synopsis

With nearly two-thirds of global electricity consumed by electric motors, it should come as no surprise that their proper control represents appreciable energy savings. The efficient use of electric drives also has far-reaching applications in such areas as factory automation (robotics), clean transportation (hybrid-electric vehicles), and renewable (wind and solar) energy resource management. Advanced Electric Drives utilizes a physics-based approach to explain the fundamental concepts of modern electric drive control and its operation under dynamic conditions. Author Ned Mohan, a decades-long leader in Electrical Energy Systems (EES) education and research, reveals how the investment of proper controls, advanced MATLAB and Simulink simulations, and careful forethought in the design of energy systems translates to significant savings in energy and dollars. Offering students a fresh alternative to standard mathematical treatments of dq-axis transformation of a-b-c phase quantities, MohanÃ¢â ¬â„¢s unique physics-based approach Ã¢â ¬Å“visualizesÃ¢â ¬Â• a set of representative dq windings along an orthogonal set of axes and then relates their currents and voltages to the a-b-c phase quantities. Advanced Electric Drives is an invaluable resource to facilitate an understanding of the analysis, control, and modelling of electric machines. Ã¢â ¬Â¢Ã Â Gives readers a Ã¢â ¬Å“physicalÃ¢â ¬Â• picture of electric machines and drives without resorting to mathematical transformations for easy visualization
Ã¢â ¬Â¢Ã Â Confirms the physics-based analysis of electric drives mathematically
Ã¢â ¬Â¢Ã Â Provides readers with an analysis of electric machines in a way that can be easily interfaced to common power electronic converters and controlled using any control scheme
Ã¢â ¬Â¢Ã Â Makes the MATLAB/Simulink files used in examples available to anyone in an accompanying website Ã¢â ¬Â¢Ã Â Reinforces fundamentals with a variety of discussion questions, concept quizzes, and homework problems

Book Information

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Customer Reviews

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Ned Mohan is the Oscar A. Schott Professor of Power Electronics at the University of Minnesota. A holder of numerous patents in the field, Mohan is the author of four other books published by Wiley, and is a member of the National Academy of Engineering.

Amazing content and Matlab files...

Unfortunately, I do not recommend the book. I think the author has trÃƒÂ-ed to oversimplify the analysis and in the process has lost and confuss several important concepts. I found it very difficult to follow the straight forward concepts I am familiar with and which are much better explained in other books.I bought the book thinking of using it in the electrical machines drives course I teach.

very good book for students which are studying electrical machines, i recommend this book since it is very illustrative, i mean there are a lot of schematics which helps you to understand whats going on.....In addition, there was some errors in some of the equations but the writer is sending the corrections along with the book (i.e. very small typical mistakes which happens when you typing very fast on the computer keyboard).thanks

Advanced Electric Drives: Analysis, Control and Modeling using SimulinkExcellent book for clear the physical picture of the advance control of the Electrical Drive, It is difficul to understand without this book, because avaliable material tell about the mathematics.

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