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Título: Permanent Magnet Synchronous And Brushless Dc Motor Drives

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Despite two decades of massive strides in research and development on control strategies and their subsequent implementation, most books on permanent magnet motor drives still focus primarily on motor design, providing only elementary coverage of control and converters.

Addressing that gap with information that has largely been disseminated only in journals and at conferences, Permanent Magnet Synchronous and Brushless DC Motor Drives is a long-awaited comprehensive overview of power electronic converters for permanent magnet synchronous machines and control strategies for variable-speed operation. It introduces machines, power devices, inverters, and control, and addresses modeling, implementation, control strategies, and flux weakening operations, as well as parameter sensitivity, and rotor position sensorless control. Suitable for both industrial and academic audiences, this book also covers the simulation, low cost inverter topologies, and commutation torque ripple of PM brushless DC motor drives. Simulation of the motor drives system is illustrated with MATLAB® codes in the text.

This book is divided into three parts_fundamentals of PM synchronous and brushless dc machines, power devices, inverters; PM synchronous motor drives, and brushless dc motor drives. With regard to the power electronics associated with these drive systems, the author:

Explores use of the standard three-phase bridge inverter for driving the machine, power factor correction, and inverter control

Introduces space vector modulation step by step and contrasts with PWM

Details dead time effects in the inverter, and its compensation

Discusses new power converter topologies being considered for low-cost drive systems in PM brushless DC motor drives

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This reference is dedicated exclusively to PM ac machines, with a timely emphasis on control and standard, and low-cost converter topologies. Widely used for teaching at the doctoral level and for industrial audiences both in the U.S. and abroad, it will be a welcome addition to any engineer's library.

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