Abstract

Background: Conventionally, the simulation of motor is quite complicated and can be a challenge for both undergraduate and postgraduate levels. However, some simulators like Matlab/Simulink previously implement several kinds of control models, that can be easily re-used with various motor control algorithms in conducting electrical machines courses.
Aims and Approach: In this paper, how to teach and simulate an adjustable speed drive of IM using Simulink blocks for an indirect field-oriented control algorithm is presented. The effectiveness of the adjustable IM drive is verified by simulation results at different operating conditions over a wide speed range.
Conclusion: The work presented has verified to be effective and valid for measuring IM drive parameters. Also, an educational tool in learning improvement of electrical machines course through the Simulink models for adjustable speed drive IM has provided. Moreover, all aspects of simulation implementation have been explored through the Simulink to give the student the opportunity to easy implement the IM drive.The system has been found to be well suited for simulation learning of the various motor control algorithms in advanced electrical machine laboratory for both undergraduate and postgraduate levels. The simulation results verify the effectiveness of the model.

Review

In this paper, the authors evaluate the effect and accessibility of IM motor simulators with implement of Matlab/Simulink for undergraduates and postgraduates, Based on the starting point, there should not be any steep requirements. In another way, simulators like Matlab supply a easy way that can be easily used by non-engineers, and the authors make a good lesson that must be appreciated.