VECTOR-CONTROLLED STRATEGIES FOR THREE PHASE INDUCTION MOTOR DRIVE SYSTEM

Thesis presented in partial fulfillment for the award of the

Bachelor of Electrical Engineering (Honours)

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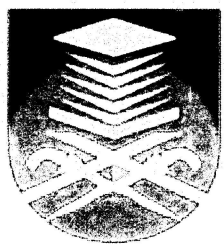

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"May Allah bless and reward them for their generosity"

ABSTRACT

This paper investigates the vector control of a 3 phase induction motor drive to implement low-cost systems for low-power application. The vector control is based upon field orientation concepts that have been adapted for this type of machine. A part of the control systems is implemented by PI controller. The implementation of vector-control techniques has enabled induction motor drives to be used for high dynamic performance applications. In this control scheme, a d-q coordinates reference frame locked to the rotor flux space vector is used to achieve decoupling between the motor flux and torque. They can thus be controlled separately by stator direct-axis current and quadrature-axis current respectively. All simulation was done using MATLAB and Simulink version 7.0.

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