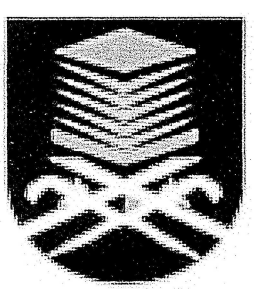
Dynamic Modeling of Induction Motor

Based On Stator Reference Frame

Thesis is presented in partial fulfillment for the award of the

Bachelor of Electrical Engineering (Hons)

UNIVERSITI TEKNOLOGI MARA



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ABSTRACT

Understanding of dynamic characteristics of the three-phase induction motor is essential for its high performance applications such as in production automation. The development of dynamic model of induction motor based on stator reference frame is discusses in this paper. D-q axis based modeling using stator reference frame is proposed to analyze the transient performance. The algorithm of the model is incorporated in MATLAB tools for the proposed project. Results obtained from the simulation include air gap torque, speed, actual stator and rotor current and magnitude of stator flux linkages. The reliability of the developed model is determined by comparisons. The results of analysis performed revealed that the obtained simulated results are comparable with that of the other known reliable results. Thus, this provides an indication that the developed model is useful for use in performing simulation and computation of performance characteristics of three-phase induction motor.

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