

**A SIMULATION STUDY OF  
SWITCHED RELUCTANCE MOTOR (SRM) DRIVEN  
USING BINARY MODULATED EXCITATION**

**This thesis is presented in partial fulfillment for the award of the  
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**SAMSUDIN BIN KARSAN  
Faculty of Electrical Engineering  
UNIVERSITI TEKNOLOGI MARA  
40450 SHAH ALAM, SELANGOR**

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In the name of Allah S.W.T

Most Gracious Most Merciful

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## **ABSTRACT**

The switched-reluctance (SR) motor excels at the very low end of the speed-being able to provide high torques with excellent dynamic capability, and at very high speeds due to its robust rotor. SR systems are used in clothes washers, food processors, vacuums, power tools and other high-performance applications. The SR motor is a variable speed machine, many control schemes such as those employing PID, neural and fuzzy algorithms have been proposed. A recent reported modulation technique for induction motor is the binary modulation in which the input voltage is modulated by a binary sequence. Such modulation technique has the advantage of low-cost and simple implementation. No such application has been reported in the SR drive application. This paper describes a Simulink simulation model for switched reluctance (SRM) drive controlled by a binary modulated excitation. The model is used to evaluate the suitability of binary modulation in SR motor control. The binary modulation technique is found to be suitable for this purpose.

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