

STUDY ON EFFECT OF SLIT ROTOR POLES TO THE SWITCHED RELUCTANCE  
MOTOR PERFORMANCE

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## **ABSTRACT**

Switched Reluctance motor is a type of reluctance motor in which the operation is depending on the reluctance torque produced. SRM is popular for modern motors as it only uses switching system and does not have to be an input power to power up the motor. The main purpose of this project is to improve the efficiency of the SRM. The slitting technique will be used on the rotor pole to create a small fringe to each of the rotor pole and this will be done in FEMM and the model of SRM will be designed in FEMM too. A script file will be used to animate the stepping function for the SRM and allow to see the flux distribution. The current and inductance value can be obtained from the results of the simulation. The motor model used is a 6/6 poles switched reluctance motor which all phases will be turn on at once. The optimum output can be produced by having modification to the rotor poles of maximum five slit.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 INTRODUCTION**

This chapter will discuss on about the project background, the problem of the project, and the objectives of the project and the project scope.

### **1.2 PROJECT BACKGROUND**

Switched Reluctance Motor, SRM possesses some of the advantages that features and make it more preferred motor as to its commonly used motor existing today. The rotor is aligned whenever diametrically opposite stator poles are excited. In a magnetic circuit, the rotating member prefers to come to the minimum reluctance position at the instance of excitation. While two rotor poles are aligned to the two stator poles, another set of rotor poles is out of alignment with respect to a different set of stator poles. Then, this set of stator poles is excited to bring the rotor poles into alignment. Likewise, by sequentially switching the currents into the stator windings, the rotor is rotated. The movement of the rotor, hence the production of torque and power, involves switching of currents into stator windings when there is a variation of reluctance; therefore, this variable speed motor drive is referred to as a switched reluctance motor drive [1].