

**SWITCHED RELUCTANCE GENERATOR
PERFORMANCE SIMULATION**

**This thesis is presented in partial fulfilment for the award of the
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**NOR RAHIZA BT. ABD. RAHIM
Department of Electrical Engineering
MARA Institute of Technology
40450 Shah Alam
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ABSTRACT

This project concentrates on the simulation study of Switched Reluctance (SR) Generator. The objective is to determine the suitable operating conditions of Switched Reluctance Generator. Two phases 4 / 6 sub-kW SR Generator, 800W and 6000 rpm are used in study at various speeds and output power . The various combinations of switch-on (alpha) and switch-off advanced angle (beta) has used to control the generator. Torque and power output of the generator at various operating conditions are simulated and results summarised.

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Nor Rahiza Bt Abd Rahim

MARA Institute Of Technology

Shah Alam

SELANGOR DARUL EHSAN

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CHAPTER 1

1. INTRODUCTION.

The Switched Reluctance (SR) Generator very simple construction, low cost, reliable, very flexible in control and to some extent fault tolerant. They consist of a stator with excitation windings and a magnetic rotor with saliency.

Torque is produced by the tendency of the rotor to align with the stator. The position of the rotor must be known in order to properly energize the phase windings to generator power. Rotor position sensor is used to provide an indication of rotor position. The study is based on two generators BRC120 and BRC100 previously constructed. BRC100 was designed to operate with maximum flux density of 1.2 Wb/m^2 whereas BRC120 was designed to operate at $1.2 \times 1.2 \text{ Wb/m}^2$.

This project is simulation of SR Generator for finding the suitable point to operate of these generators like torque and flux linkage current characteristics based on various the switch-on advanced (alpha) and switch-off advanced (beta) angle combinations.