International J.of Multidispl.Research & Advcs. in Engg.(IJMRAE), ISSN 0975-7074, Vol. 3, No. II (April 2011), pp. 153-168

\_\_\_\_\_

## ANALYSIS DESIGN AND PERFORMANCE CHARACTERISTICS OF SWITCHED RELUCTANCE MOTOR

## ABDUL AHAD SHAIK, UDAY KUMAR R. Y., K. S. R. DEEPIKA AND SHAIK NISAR AHMED

## Abstract

Switched Reluctance Motor (SRM) is coming up as an alternative selection for variable speed drives in many automobile and industrial application. Its construction is simple and rugged. Its higher efficiency, high torque to inertia ratio and thermal toughness are some of the salient advantages of SRM. However, the SRM has not gained prominent importance in many practical applications, because of its few disadvantages like large torque ripple, acoustic noise and proper design. In this paper, the step by step design procedure of SRM is explained based on the previous literature available, for preliminary design. Finally the overall modifications and validations are carried out using finite element methods .Based on the design validations a proto type has been developed for automobile application .The experimental method verification of the motor winding inductance at different rotor positions from un-aligned to aligned position and ,the static flux linkage characteristics are also presented as they play an vital role in design verification and performance calculation of an switched reluctance motors (SRM's). The simulation results obtained are having good conformity with the experimental results.

C Ascent Publication House: http://www.ascent-journals.com

**Keywords:** Motor design optimization, Motor-CAD, ANSOFT MAXWELL, Static flux linkage characteristics, Inductance calculation.