

Abstract—

This paper addresses control of commutation of switched reluctance (SR) motor without the use of a physical position detector. Rotor position detection schemes for SR motor based on magnetisation characteristics of the motor use normal excitation or applied current /voltage pulses. The resulting schemes are referred to as passive or active methods respectively. The research effort is in realizing an economical sensorless SR rotor position detector that is accurate, reliable and robust to suit a particular application. An effective and reliable means of generating commutation signals of an SR motor based on inductance profile of its stator windings determined using active probing technique is presented. The scheme has been validated online using a 4-phase 8/6 SR motor and an 8-bit processor.

Keywords—

Position detection, rotor position, sensorless, switched reluctance, SR.