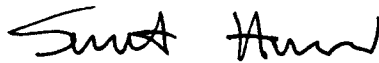


THESIS TITLE : ADJUSTABLE SPEED DRIVE SYSTEMS FOR A WOUND - ROTOR
INDUCTION MOTOR USING SLIP ENERGY RECOVERY

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Abstract

This paper presents the study and design of speed control systems for a wound - rotor induction motor. The slip energy recovery is utilized to improve the efficiency of the motor as compared to a conventional rotor - resistance control technique. The Static Scherbius Drive circuit, complemented by a power factor correction technique is presented. The speed of the motor can be controlled in the range of 10-50 percent slip, taking the load torque from no-load to rated value. For fast dynamic response, the dc link current is controlled to the optimum setting. Experimental results show an increase in the efficiency of the proposed control technique as compared to that obtained from a conventional rotor - resistance control by 20 percents.