54. Title: Reduction of torque ripple in double inverter fed wound rotor induction machine

Inventor: Prof. Amit K. Jain, Department of Electrical Engineering

Key Words: Wound rotor induction machine, switching logic, torque ripple

Domain: Power Generation & Distribution

Summary: A system for controlling a torque ripple in a double inverter fed wound rotor induction machine (WRIM) is developed. The control system changes the pulse width modulation (PWM) sequence to generate a switching logic for the stator and rotor side inverter. The varying switching PWM sequences can be applied to either of the stator or rotor side inverters. As a result, the torque ripple reduces.

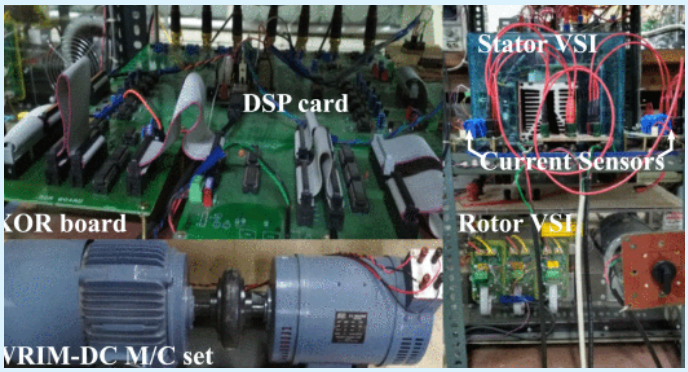

Diagram: schematic of system for controlling torque ripple

Advantages:

» Torque ripple is reduced throughout the operation of the machine irrespective of the frequency constraint

» Valid for machines with any number of turns ratio between stator and rotor

Applications: Residential, commercial and industrial settings in pumps, compressors, small fans, mixers, etc.

Scale of Development: A functional prototype is developed and tested in laboratory.

Technology Readiness Level: 4

IP Status: Granted Indian Patent 399399