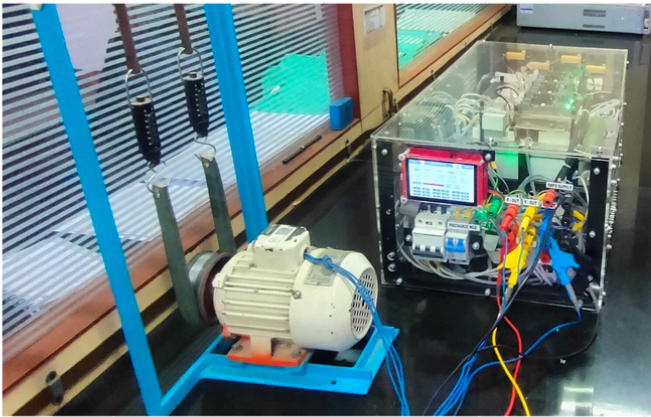


3 Phase Induction Motor drive for E Vehicles



Induction Motor Drive

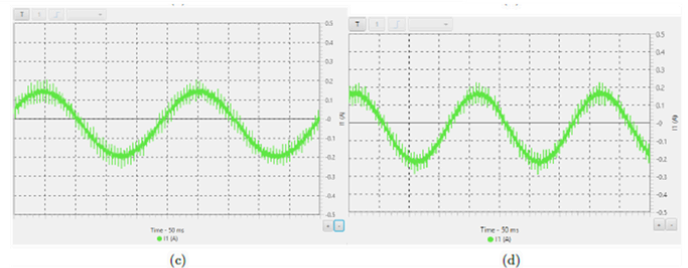
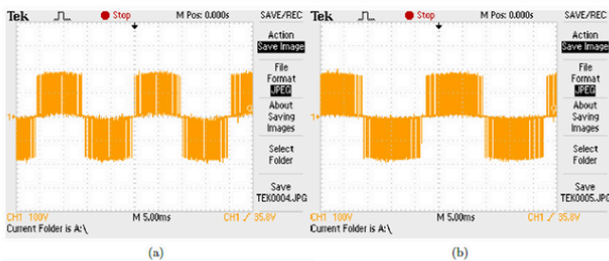
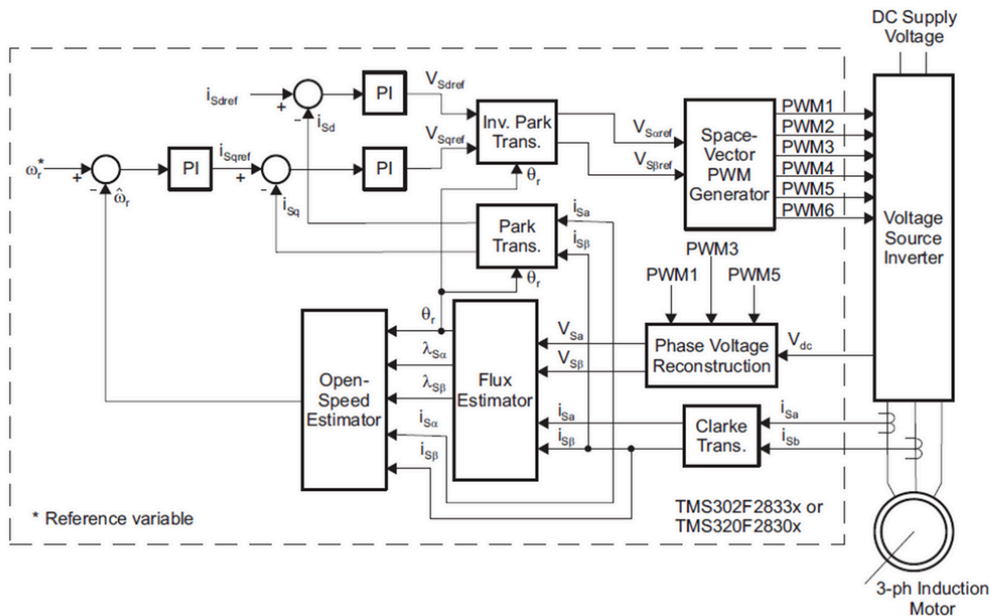
Problem Statement

- 2 Wheeler / 3 Wheeler EVs use permanent magnet based motors
- Dependency on other countries for import of rare earth material
- Increase in cost of permanent magnet
- IM controller for 50 V (for 72 V battery pack) higher current is not available as commercial solution in the market

Objective:

- To design and develop indigenous AC motor controller for IM
 - Controller capable of supplying 80 A current continuously and 180 A for 2 minutes
 - FOC based control software for delivering this current with high torque and low slip.

Field Oriented Controlling Scheme



Output Signal obtained from VSC system to maintain constant V/f ratio

(a) voltage at 50 Hz (b) voltage at 40 Hz

(c) current at 50 Hz (d) current at 40 Hz

Application: 2 / 3 Wheeler EV drive