Unit Name: Power Electronics Practical 1

Title

DC Chopper-based speed control of small DC Motor

Details

The experimental set up consists of a Four-quadrant IGBT based chopper driver model. PEC-16HV3 .The ac supply in fed to the setup through an isolation transformer and it is rectified to dc for its use. The PWM converters generate pulse-modulated signal that are compared with the base signal and are fed to OPTO.

Delay logic is provided to gate drivers and thus the signal obtained is the gating signal for the IGBTs in the four-quadrant chopper. Once the IGBTs are triggered they are used in pairs to control the speed of the dc motor.

DC motor Specification: 220V, 2.2A, 1420 rpm Shunt type single phase. Another set up consisted of half bridge rectifier consisting of thyristor wherein the speed control for the same DC motor was carried out using the firing angle of the thyristor.