ABSTRACT

The design and implementation of power electronic and drive laboratory manual for existing Leybold's equipment is described in this thesis report. The objective for this report is to make laboratory experiment manual for the student to use during their study. This module will then be able to help students with some hands-on experience and to improve their understanding with the theory learned in the classroom.

In this thesis, there are five experiment modules created using existing equipment from IULI laboratory. The first module is about introduction to universal inverter. By using universal inverter connected to a squirrel cage we will study the control characteristic of the motor. The second module is about introduction to industrial frequency converter. Similar to experiment using universal inverter, we are using squirrel cage motor with the industrial frequency converter. The experiment is done to observe and learn the control characteristic of motor. The third, forth and fifth experiment was carried out using COM3LAB equipment. Using COM3LAB Electrical Machine I electric board and the master unit, we will study about DC machine, rotating field machine and stepper motor.