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**ABSTRACT**

The project reveals the digital closed loop control system for speed control of DC motor using PWM technique. In present days the power semiconductor devices have completely revolutionized the control of drives especially in the area of control usage of Thyristors IGBT’s power MOSFET etc., was increased

The digital circuit can be interfaced to microcontroller. So that the speed can be controlled by Microcontroller there by making speed control of DC motor even more easily. PWM technique to the digital circuit drives the components correspondingly speed will change.

The project basically consists of micro controller MCS 51 series 89c52 and motor driver, thermal sensor, comparator, key pad, 16X2 dot matrix LCD display and rotation feedback sensor (optical encoder). The program is written in micro controller to take the input values from the user, and then rotates the motor by placing 50% duty cycle pulse on the motor. The motor is rotated at X RPM speed, can be detected by using feedback sensor and micro controller. If the speed is above the specified speed then the micro controller continuously reduces the duty cycle till the speed comes to a predetermined level. If the detected speed is less than the pre determined speed then the micro controller continuously increases the duty cycle till the determined level. The micro controller keeps on tracking the determined speed by varying duty cycle in a closed loop control