PROJECT NAME: REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

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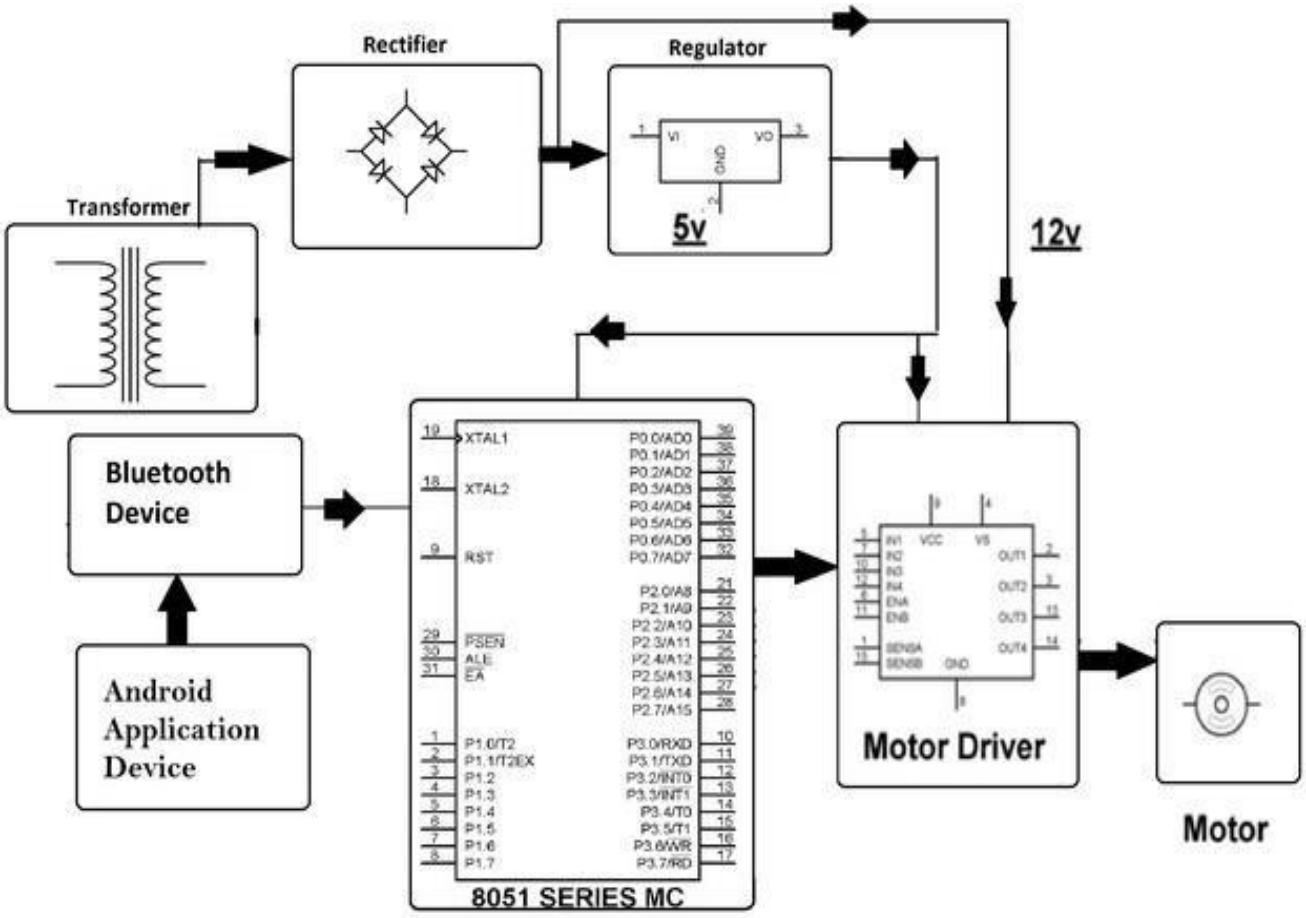
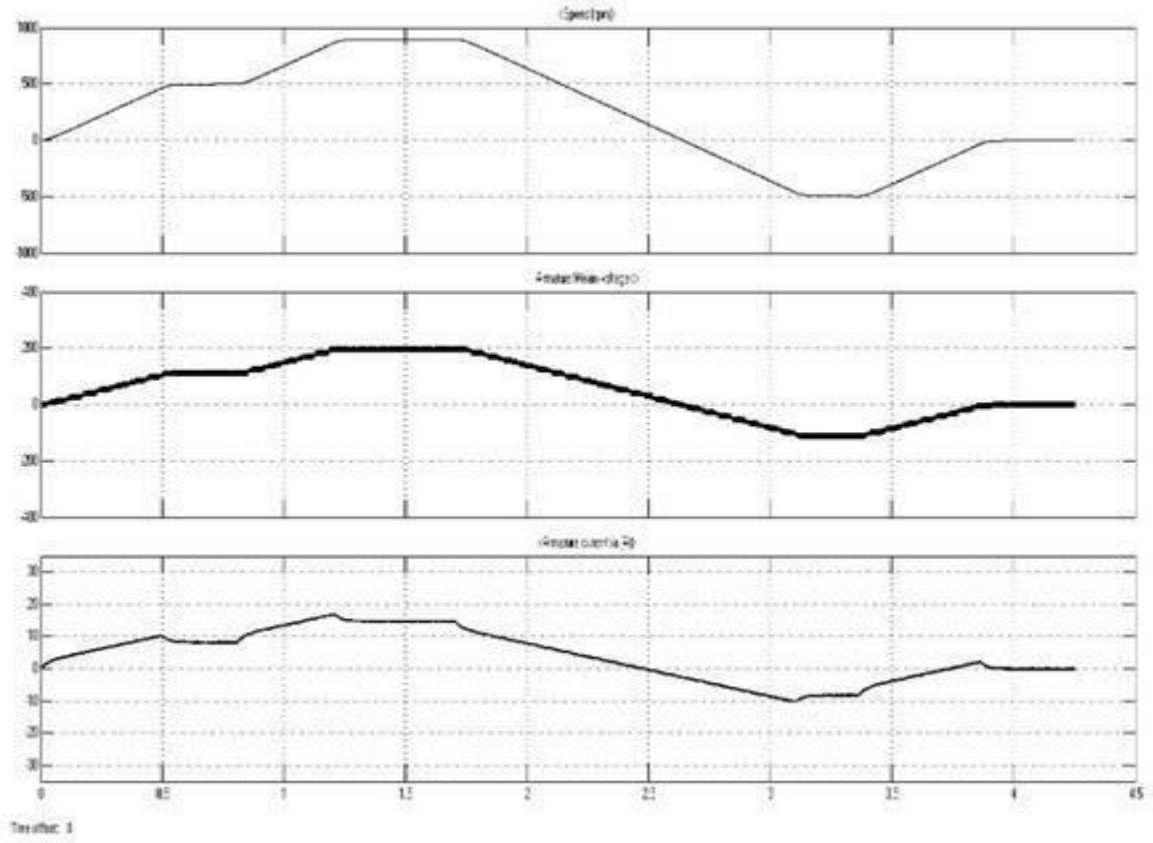
Configure the mobile app for Controlling motors using buttons

This system DC motor Controller by Android is developed to control the speed of the DC motor in both clockwise and anticlockwise direction. For this DC motor is interfaced to the 8051 microcontroller. A Bluetooth modem is used to receive direction commands and PWM commands. When an Android device sends commands, it is received by the Bluetooth modem which then sendsthe commands to the microcontroller. The microcontroller the controls the DC motor through motordriver. The entire system is powered by 12V transformer. LCD display is used to show the status and the speed of the DC motor. The android application is used to control the entire system. The start button is first clicked to start the motor and then the motor can run in both clockwise and anticlockwise direction. Simultaneously the status of the system is displayed on the LCD screen and also the speed of the DC motor is displayed on the screen. Thus the speed of the motor can be increased or decreased in clockwise or anticlockwise direction with the help of this android application.



Speed control of Four Quadrant Operation of DC motor

In this method there are two cascade PI control, comparing speed (ω) and current (*Ia*) as speed controlling and current controlling. First the actual speed(ω) of the motor is compared with a set speed (ω*). Second the current (*Ia**) which comes from speed controller is compared with actual armature current (*Ia*). Fig.1 is the schematic of Simulink diagram for the DC motor drive. The regulation switch produces the current reference, either as provided by the speed controller during speed regulation or computed from direct from the torque reference provided by the user during torque control.



illustrates the developed “Matlab-GUI” for the designed universal motor drive.

The GUI application comprised of 6 windows as main window and other five windows relevant to each motor controlling parts. Fig.3(a) shows the main screen which requires the users to select the motor to be operated. If user selects AC three phase motor, Fig.3(b) window is displayed on the screen. Then user can set the desired speed and push start button to start the relevant operation. If the user selects DC motor, user can select any controlling method from main window and can get relevant window such as Figure 3(c). These windows display the actual speed of the motor, voltage of the motor and current of the motor. When the stop button is selected, all the operations are stopped.