

# Motor Rotation Using Arduino Uno

**Abstract**—It shows gradual increase and decrease of speed of DC motor. To achieve that we use analogWrite function. AnalogWrite uses pulse width modulation (PWM), turning a digital pin on and off very quickly with different ratio between on and off, to create variation in motor speed.

## 1 COMPONENTS REQUIRED:

- 1) Arduino board
- 2) DC Motor
- 3) L293D motor driver IC
- 4) Breadboard
- 5) Wires

## 2 CIRCUIT CONNECTION:

- 1) Refer the pin diagram of L293D motor driver IC

Arduino/IDE/MotorControl/Figures/pin.jpg

- 2) Connect external 9V battery to the Vcc2 pin of L293D motor driver IC
- 3) Connect Vcc1 pin to 5V output on Arduino.
- 4) The input and enable pins(ENA, IN1, IN2) of the L293D IC are connected to three Arduino digital output pins(9, 8, 7).
- 5) Connect a motor to across OUT1 & OUT2 pins of L293D motor driver IC.

Arduino/IDE/MotorControl/Figures/wiring.jpg

- 6) Go to arduino IDE and Write the the following code

Arduino/IDE/MotorControl/Codes

- 7) Click on Compile and Upload the code to Arduino board.
- 8) Now you can see the variation in the motor speed.