

# EMG BASED ROBOTIC ARM

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## **Dedication**

This project is dedicated to the handicapped people and especially to the number of security forces who die each year as a result of terrorist activities around the globe. We would also like to pay gratitude to our parents for constant support and prayers throughout the course of this project which enabled us to complete this project efficiently and in time.

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## Abstract

EMG based robotic arm is an artificial robotic arm that's can work exactly the same as the human arm movement with the help of Electromyography signals. Electromyography signal are usually measured in micro volts. People who lost their arm in any accident or due to any diseases the prosthetic arm will used to replace as the function of prosthetic arm will same as the other human arm perform normally.

Using muscle sensor v3 kit placed 3 electrodes on the human muscle. Extract the analog signal, amplify and convert to digital and send signals to Arduino. Further the servo motors are connecting with the Arduino. After setting the position of each motor, these motors are able to move in different angle. Two parts of project communicate wireless. Transmitter is placed on one phase and receiver at the other phase end. So that signal send from one phase to other. The transmitter and receiver communicate in binary data in form of 0 and 1.

0 = move upward

1 = move downward

In order to make project simpler, and easily understandable, we collect simple raw data (voltage) and work on that. And the main objective is to make project simple and light-weighted arm.