**DEVELOPMENT OF MULTIPURPOSE ROBOTIC ARM**

**Submitted by**

ROHIT KANTODE, ROHIT PILARE, SURAJ HIREKHAN, RAHUL PATHRABE

**REG NO- ME 162**

**Department of Mechanical Engineering**

UMRER COLLEGE OF ENGINEERING, UMRER

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Email : [07rohitpilare12@gmail.com &](mailto:07rohitpilare12@gmail.com%20&) [gsahare20@gmail.com](mailto:gsahare20@gmail.com)

Mobile. No : 9404109256, 7588772

**ABSTRACT**

Robotics is the science of designing and building robots suitable for real life applications in automated manufacturing and non manufacturing environments. Robots are means of performing multifarious tasks for man’s welfare in the most planned and integrated manner, maintaining their own flexibility to do any work, effecting enhanced productivity, guaranteeing quality, assuring reliability and ensuring safety to the workers.

Our project entitled as “Design and fabrication of development of multipurpose robotic arm ” deals with detailed study and development of an intelligent robot that can be operated on automation to detect, pick and place object from a source location to the destination.

The robot comprises of mechanical components like links, gears, etc, electronic components like microcontroller, Load sensors, driver circuit etc and use of computer language like C.

The robot is equipped to perform the task in autonomous mode. In the autonomous mode the robot performs the task of locating the objects on its own by using sensors, picks the object from source and drops it at the destination without any human intervention. The ATMEGA 16 microcontroller processes the data and sends signals to the various ports and to L293D drive circuit which drives the robot gears. The sensors send a feedback to the microcontroller through the feedback system.

Now-a-days, industrial robot is been custom made by various companies which serves companies of different sectors in fulfilling the very specific demand, such as welding, painting, fabricating microchips, etc. Usually these robots are provided with actuators at each joint for simplicity and reliability. This paper introduces a new concept of a concentric driven serial chain manipulator where seven motor is used to supply the power required by the robot to do all the required motion or multipurpose robot or manipulator.

**Keywords**

Robotics, Robotic arm, Robotic Link, Robotic joint, Robotic circuit, Microcontroller, Load sensors, End Effecter, Gripper, Pick & Place robot arm, Manipulator, Guide ways, Gripper, motors, voltage regulator.