Abstract

In this thesis, a kinematic design and simulation of a (four degrees of freedom) robot manipulator arm is carried out using several types of theories, computer program and also a simple physical model is built and tested.

The design was made using both direct and inverse kinematic analysis.

A Computer program is developed and written with "Ms Access" to solve the direct (forward) solution and in verification of the inverse kinematic solution.

The results of inverse and direct kinematic solution became approximately equal.

Also a simulation study was done using "solid work graphical package". This study is also compared with the kinematic solutions and was also used to verify the accuracy of the design.

A physical model was built in the central work shop of the College of technology at Karrary University. The model has been built in scale (0.66:1) using mild steel sheet for the links and "cars- windows glass motors" were used as actuators.