عنوان مقاله:

(Design, Modeling, Implementation and Experimental Analysis of ۶R Robot (TECHNICAL NOTE

محل انتشار:

ماهنامه بین المللی مهندسی, دوره 21, شماره 1 (سال: 1387)

تعداد صفحات اصل مقاله: 14

نویسندگان:

A. Habibnejad - *Engineering, Tarbiat Modarres University*

M. H. Korayem - *Mechanical Engineering, Iran University of Science & Technology*

خلاصه مقاله:

Design, modeling, manufacturing and experimental analysis of a six degree freedom robot, suitable for industrial applications, has been described in this paper. The robot was designed on the assumption that, each joint has an independent DC motor actuator, with gear reduction and measuring sensor for angular joint position. Mechanical design of the robot was done using Mechanical Desktop and manufacturing process plan, the mechanical parts of the robot was developed. Kinematics and dynamics modeling of the robot was done using Mathematical and also MATLAB Robotics Toolbox and ADAMS software. The results from the kinematics and dynamics solution of the robot which was done mathematically, using Mathematical software, have been compared with the developed models of the robot, using MATLAB and ADAMS software for verification. An efficient geometric algorithm for the inverse kinematics problem of the robot was proposed. Finally, Experimental analysis and operational performance tests, including pose and path accuracy/repeatability of the robot's end-effecter, according to ISO ۹۲۸۳ standard was completed and the .results are presented below

کلمات کلیدی:

۶R Robot, Dynamics, Kinematics, Design, Modeling, Manufacturing, Experimental analysis, Test