

Computer simulation technique for two degree of freedom agriculture robot arm

ABSTRACT

In this research, a structure of pneumatic robot with consisted a pneumatic cylinder for linear movement and a pneumatic motor for rotation movement was used. Air pump pressure was fixed to 5 bar, and the time taken for pneumatic cylinder and pneumatic motor to reach from minimum to maximum position were recorded and inserted into FOR....NEXT programming loop in Visual Basic V6 for achieve real time simulation of the robot movement. The workspace of robot simulation on computer was scaled with the real workspace of robot on the real environment. Clicking the image target on graphical of user interface (GUI), the robot will move and grab the selected target according for a real time mode condition. From the result, the accuracy of real time simulation using this method was consider high if the robot actuate by electric follow by hydraulic and pneumatic. To develop real time 3-Dimensional (3-D) robot simulation is very hard, anyway 2-D simulation become easier and realistic for any real time simulation for robot that only had 2 degree of freedom.