Design and development of jumping mechanism

Abstrak

This paper presents preliminary design for the development of a jumping mechanism. A jumping mechanism offers numerous advantages for efficient locomotion to climb the stairs, to explore the rugged terrain, including dealing with obstacles. Two designs of the jumping robot, with telescopic leg and articulated leg are proposed. These designs have a same mechanism that constraints the motion to the plane in order to be easy for monitoring and controling . To measure the angular horizontal position of these robots, a rotary potentiometer is mounted on the center of planarizer. To measure the hight of jumping, a distance infrared sensor is mounted on the upper body of these robots. To measure the body tilt, two distance infrared sensor are mounted on the lower body of these robots. Finally, the experiments with these robot prototypes have demonstrated jumping and hopping in different height, lenght and speed.