ROBOTIC FROG

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Abstract

Many definitions have been suggested for what we call a robot. The word may conjure up various levels of technological sophistication, ranging from a simple material handling device to a humanoid. The image of robots varies widely with researchers, engineers, and robot manufacturers. Amphibious robotics category comes under it. As like in normal robots these robots doesn't use wheels to travel. It imitates the techniques which animals use for locomotion. In this project, the mechanism which uses by the frog is imitated. Frogs are generally recognized as exceptional jumpers. Their muscles have passive flexibility. They are first stretched while the frog is still in the crouched position, then they are contracted before being stretched again to launch the frog into the air. The forelegs are folded against the chest and the hind legs remain in the extended, streamlined position for the duration of the jump.Here, the mechanism uses in hind legs is imitated and through that the robot can do its locomotion. Two hind legs of the robot are controlled by two servo motors and signals are given by two limit switches. That is like when a frog needs to jump, signals gives to muscles of the legs and through their muscles it jumps forward. To have a jump with an angle, they give energy to their muscles with a time delay. This can be done by giving time delay for two servo motors. The mechanism which uses for the robot was successful and as further developments controlling the angle and distance can be done through servo controlling.

Keywords: amphibious robotics, imitation, locomotion