Abstract

Ahmed Khamies El-Shenawy

The Construction of Autonomous Electric Vehicle for Land mine Detection and Localization

This paper presents the hardware system integrating of an electric vehicle for Land mine detection. The Vehicle is fully automated to fulfill three main objectives: 1) Detect the Land mines 2) Drive through the landmines and 3) store the landmines location. The vehicle consists of two main robotics configurations. Firstly a car like robot to provide the maneuverability in desert environment, where the landmines are found. Secondly, a robotic arm with 2 Degrees of Freedom (2DOF) to provide the scanning for Landmines on the surface of 50 cm length and rotation of 180 degrees. The kinematics modeling description is provided along with the overall control structure. The hardware implementation is also explained in addition to the demonstration of experimental results to illustrate the system performance.