

Solar Powered Smart Multifunctional Floor Cleaning Robot

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Abstract: *The conventional floor cleaning machines is most widely used in airport platforms, railway platforms, hospitals, bus stands, malls and in many other commercial places. These devices need an electrical energy for its operation and not user friendly. In India, especially in summer, there is power crisis and most of the floor cleaning machine is not used effectively due to this problem, particularly in bus stands. Hence it is a need to develop low cost, user friendly floor cleaning machine. In this project, an effort has been made to develop a solar powered mobile operated floor cleaning machine so that it can be an alternative for conventional floor cleaning machines. In this work, modelling and analysis of the floor cleaning machine was done using suitable commercially available software. The conventionally used materials were considered for the components of floor cleaning machine. From the finite element analysis, we observe that the stress level in the mobile operated floor cleaning machine is within the safe limit. Automated floor cleaning machines are commonly used in developing countries since many years because of high cost of labor, time, efforts and affordability. The concept is not popular in developing or emerging economic countries. Reasons for non-popularity are cost of machine and operational charges in terms of power tariff. This article is based upon on our innovative project to design, development and manufacturing of semi-automatic solar powered mobile operated floor cleaning machine which will work on solar energy, mobile communication, battery or electricity. A semi-automatic floor cleaning machine is developed by keeping basic consideration for less energy consumption, machine as well as operational cost reduction, reduce the human effort, environment friendly and easy to handle. Base of the project was to use renewable energy which is abundant in most of the countries, will have less environmental impact and easy to construct for commercial scale in future.*

Keywords: Solar Energy, Floor Cleaning Mechanism, Air dryer etc

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