

Design and Manufacturing of Solar Panel Cleaning Robot

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Abstract: *With growing costs of electricity and concern for the environmental impact of fossil fuels, implementation of eco-friendly energy sources like solar power are rising. The main method for harnessing solar power is with arrays made up of photovoltaic (PV) panels. Accumulation of dust and debris on even one panel in an array reduces their efficiency in energy generation considerably and emphasizes the need to keep the panels' surface as clean as possible. The goal of our project is to create an automated solar panel cleaner that will address the adverse impact of soiling on commercial photovoltaic cells. Specifically, we hoped to create a device that increases the maximum power output of a solar panel by 10% (recovering the amount of power lost). Furthermore, autonomous cleaning robots are often only economical on a larger scale due to both installation costs and the fact that custom-made parts are needed to fit the plant.*

Keywords: Solar Panel

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