

Cleaning Photovoltaic Panels using Robots

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Abstract: - The increasing interest in the exploitation of renewable energies like photovoltaic systems stems from the high costs associated with conventional energy sources and environmental awareness. The scheme needs to have suitable clearing circumstances for effective application of photovoltaic panels for reduce obstruction incidence solar radiation. This study is intended to present a market analysis on the use of robots for photovoltaic panel cleaning tasks.

Keyword: - Renewable energy, Photovoltaic panel, Clean

- **Introduction:** -

In photovoltaic systems, electronic instruments called photovoltaic cells are placed on sunlight sensitive screens and convert energy between two levels of semiconductors by electron stream. Therefore it is necessary to have free access to the photovoltaic cells of the photovoltaic panel for operated at their maximum efficiency without loss of energy. Due to regular washing of photovoltaic panels, practical and effective alternatives have been created so that they can preserve their energy capacity.

- **Methodological Procedure:** -

The photovoltaic panels [1]–[4] are being cleaned through air by this robot. The Solar brush UAV[5]–[8] is consisting of four propeller pairs and a nose with a particular substance to clean the boards. The robot[9], [10] also contains detectors for detecting washing robot positions mounted on each side and tools for evaluating the dust amount of the solar panels[11]–[13]. A small robot which autonomously cleanses various panels.



Fig. 1. Solarbrush UAV Robot.

- **Conclusion: -**

Photovoltaic boards effectiveness is immediately influenced by dirt placed on them. The regular washing of the boards is therefore essential in attempt to function as efficiently. The development of a manipulator robot coupled in a fixed guide in such a way that the cleaning performance of the panels with vertical movements.

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