

Automatic Solar Panel Cleaning Robot

Aishwarya Rathod, Rani More, Rutuja Ghadage, Mohini Gaikwad Dr. Mrs. D. A. Tamboli

Department of Electrical Engineering

SVERI's College of Engineering, Gopalpur, Pandharpur, Maharashtra, India.

Abstract: Solar energy, which is one of the renewable energy sources, has an important role in meeting the increasing electrical energy demand of our globe. Extracting maximum energy from the sun continuously reduces installation costs and makes it easier to meet the demand for peak electrical power. Physical condition such as muddy rain, snow, and dusting take place between the solar panel and the sun. This situation results in a reduced electric power extraction level that affects the cost of production. The efficiency and rate of production can be increased technically with a clean solar panel surface. Therefore, it is also very important to keep the solar panels clean as well as the maximum power point tracking devices. In this study, a solar panel cleaning robot (SPCR) has been designed and tested in real time. The designed dual-motor and crawler robot moves horizontally and the cleaning brush runs on the vertical axis. In addition, the length of the solar panel array can be detected by position switches to keep the SPCR in the desired working area.

Keywords: Solar, Clean Energy, Solar Cleaning, Robot, Mobile Robot. etc

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