

**VISVESVARAYA TECHNOLOGICAL  
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**AMICRO PROJECTREPORTON**

**“Solar Panel Cleaning Robot ”**

**Submitted By,**

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**DEPARTMENT OF MECHANICAL ENGINEERING**  
**CERTIFICATE**

This is to certify that the Micro-Project entitled "Solar Panel Cleaning Robot "  
has been Successfully Completed

By

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The bonafide students of Department Mechanical Engineering, Alva's Institute of Engineering and Technology, affiliated to VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI, during the academic year 2020-2021. It is certified that all corrections/suggestions indicated for Internal Assessment have been in incorporated in the report. The report has been approved as it satisfies the academic requirements in respect of Micro-Project work prescribed for Bachelor of Engineering.

**Mr. Hemanth Suvarna**  
**Project Guide**

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## 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. In recent years, many countries have established their energy policies based on solar energy, and researchers have been working on solar panel efficiency, maximum energy extraction from the sun, control and power electronics. The energy extracting from the sun is converted into electrical energy via solar panels. To extract continuously maximum energy level from the sun reduces installation costs and makes it easier to meet the demanded peak electrical power. Physical conditions such as muddy rain, snow and dusting place between the solar panel and the sun. This situation results the reduced electrical power extraction level which can be technically produced with 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 desired working area