

**DEVELOPMENT OF AUTOMATIC CLEANING PV MODULES  
SYSTEM**

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## **ABSTRACT**

Renewable energy is one of benefit system to environment and society. In Malaysia photovoltaic suitable to become a new energy because with sunny circumstances in Malaysia. Array is important to give solar power and convert to direct current but to get the maximum solar power and maximum efficiency ,accumulation of dust and debris must be gone on the surface of solar panel. The power output reduces as much as 50% in a month ,if the module is not clean as possible. The main objective of this paper is to present development and test a prototype of automatic cleaning PV modules whereby it is can give better performance of electrical and as facility to consumers. In order to regularly clean up the module automatically per day has been designed. This system controlled by programmable logic control (PLC) which to control stepper motor . The method to cleaning the PV modules is water channel using valve as a medium to water flows and sliding brushes has been developed. In this project is presented for cleaning on surface of PV module in automatically with 30 degree of angle of the PV module.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 BACKGROUND OF STUDY**

Renewable energy industry like photovoltaic has become prevalent market around the world .In a solar parks has an excepted lifetimes around 20-25 years ,A long period of PV solar operation should some services such as cleaning PV solar panel be required to keep quality and maximum power output of PV solar [1]. The accumulation of dust and debris is major problem on PV solar because of that efficiency and solar power will reduces 50% in a month it is also can occur in cloudy day its negative affect the performance of PV solar by the shading the front surface[2].