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Authors:

Shreyasi Chakraborty

Nilanjana Mukherjee

Rashmi Biswas

Tanushree Saha

Astika Mohinta

Neha Kumari Modi

Dip Prakash Samajdar

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Abstract

The renewable sources of energy are becoming one of the utmost priorities of the present day world due to their innumerable advantages. In particular, solar energy is progressing as a potential inexhaustible and non-polluting energy source to suffice our ever-increasing energy requirements. However, the solar panels which are the fundamental solar-energy conversion components are fixed at a certain angle and are not able to track the sunlight direction with diurnal and seasonal changes. This limits the area of exposure of sunlight on solar panels and efficiency of the solar tracking system involving solar panels. We have developed a solar tracking system using a combination of micro-controller, stepper motor and light dependent resistors (LDR's) with the primary aim of improving the power efficiency of the solar panels. The main component of this tracker is AT89S52 micro-controller which is programmed to detect the sunlight with the help of LDRs and then actuate the stepper motor to position the solar panel in such a way so that it gets the maximum sunlight. Thus this system can achieve maximum illumination and can reduce the cost of electricity generation by requiring minimum number of solar panels with proper orientation with the sunlight. This work is an application development done in college project.

Refer

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Index Terms

Computer Science

Power Systems

Keywords

Solar Tracker Ldrs Stepper Motor At89s52 Solar Panel