PROJECT REPORT

ON

AUTOMATIC SOLAR TRACKING SYSTEM

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AUTOMATIC SOLAR TRACKING SYSTEM

ABSTRACT

Energy is the prime factor for the development of a nation. An enormous amount of energy is extracted, distributed, converted, and consumed in the global society daily. Eighty-five per cent of energy production is dependent on fossil fuels. The resources of the fossil fuels are limited and their use results in global warming due to emission of greenhouse gases (GHGs). To provide a sustainable power production and continuous power resources for the future generations, there is a growing demand for energy from renewable sources, such as solar, wind, geothermal, and ocean tidal waves. Renewable energy (RE) sources are the best-proven sources of energy. Solar energy is one of the most abundant resources of RE. Energy from sun is perceptibly environmentally advantageous in all respects. There are many different ways of generating electricity from the sun's energy. The most popular are photovoltaic (PV) panels, where silicon solar cells convert solar radiation to electricity. Keeping the PV-panels perpendicular to the sun's radiation maximizes the output. The systems that are utilized for this movement are called solar trackers. The solar trackers are also required for concentrating solar power applications to function. The power incident on a photovoltaic (PV) module depends not only on the power contained in the sunlight, but also on the angle between the module and the sun. When the absorbing surface and sunlight are perpendicular to each other, the power density on the surface is equal to that of the sunlight (in other words, the power density will always be at its maximum when the PV module is perpendicular to the sun). The amount of solar radiation incident on a tilted module surface is the component of the incident solar radiation which is perpendicular to the module surface.

CONTENTS

TOPIC	PAGE NO
1. INTRODUCTION	1
2. EMBEDDED SYSTEMS	18
3. BLOCK DIAGRAM	25
4. BLOCK DIAGRAM DESCRIPTION	26
5. HARDWARE DESCRIPTION	28
6. SOFTWARE DESCRIPTION	50
7. CIRCUIT DIAGRAM	56
8. WORKING	57
9. PCB FABRICATION	59
10.PCB LAYOUT	66
11.SOFTWARE PROGRAM	68
12.FINAL PRODUCT IMAGE	77
13.ADVANTAGES	79
14.DISADVANTAGES	80
15.APPLICATIONS	81
16.CONCLUSION	82
17.REFERENCE	83