

VISVESVARAYA TECHNOLOGICAL UNIVERSITY  
 "JNANA SANGAMA", BELGAVI-590018 KARNATAKA



Mini Project Report (18ECMP68)

ON

**"SINGLE AXIS SOLAR TRACKING SYSTEM"**

Submitted in partial fulfillment of the requirement for the award of degree

BACHELOR OF ENGINEERING

IN

ELECTRONICS & COMMUNICATION ENGINEERING

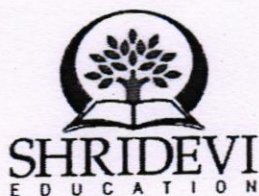
Submitted by:

LOKESHWARI KOTI B S (USN: 1SV19EC016)

GOWRAMMA S (USN: 1SV19EC012)

Under the Guidance of:

Dr. Pradeep K.G. M.B.E., M.Tech., Ph.D  
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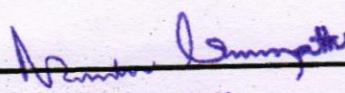


DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
 SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Recognized by govt. of Karnataka, Affiliated to VTU, Belagavi and approved by AICTE, New Delhi)

Sira Road, Tumkur-572106

2021-2022

  
 PRINCIPAL  
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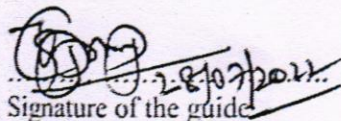
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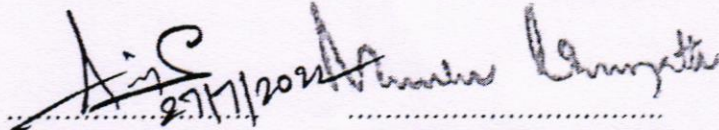
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## Certificate

This is to Certified that the mini project work (18ECMP68) entitled "SINGLE AXIS SOLAR TRACKING SYSTEM" has been Successfully carried out by LOKESHWARI KOTI B S (USN: 1SV19EC016) ,GOWRAMMA S (USN: 1SV19EC012), a bonafide students of Shridevi Institute of Engineering and Technology, Tumkur- 572106, in partial fulfillment for the award of Bachelor Of Engineering in Electronics & Communication Engineering of the Vishvesvaraya Technological University, Jnana Sangama, Belagavi -590018, during the academic year 2021-2022. It is certified that all corrections/suggestions indicated for internal assessments have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirement with respect to the mini project work prescribed for the said Bachelor Of Engineering degree.

  
Signature of the guide

Dr. Pradeep K G M  
Associate professor  
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Signature of the HOD

Prof. Aijaz Ahamed Sharief  
HOD  
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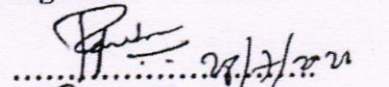
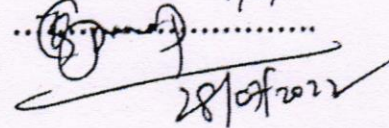
Signature of the principal  
Dr. Narendra Viswanath  
Principal  
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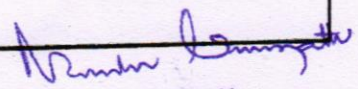
### EXTERNAL VIVA

Name of examiners:

1... Raghavendra D  
2... Dr. Pradeep K. G. M

Signature with date:

  
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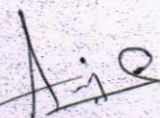
  
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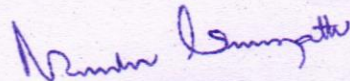
## ABSTRACT

Of all the renewable energies, solar energy is the only energy gained its popularity and importance quickly. Through the solar tracking system, we can produce an abundant amount of energy which makes the solar panel's workability much more efficient. Perpendicular proportionality of the solar panel with the sun rays is the reason lying behind its efficiency. Pecuniary, its installation charge is high provided cheaper options are also available. This project is discussed all about the design and construction mechanism of the prototype for the solar tracking system having a single axis of freedom.

The main control circuit is based upon UNO microcontroller. Programming of this device is done in the manner that the LDR sensor, in accordance with the detection of the sun rays, will provide direction to the SERVO Motor that in which way the solar panel is going to revolve. Through this, the solar panel is positioned in such a manner that the maximum amount of sun rays could be received. In comparison with the other motors, SERVO motor is the simplest and the suave one, the torque of which is high and speed of which is slow enough. We can program it for changing the direction notwithstanding the fact that it rotates only in one direction subject to exception as far as programming is concerned. 1985, first time ever it was witnessed for production of the silicon solar cells with an efficiency of 20%. Though a hike in the efficiency of the solar panel had a handsome increase still perfection was a far-fetched goal for it. Below 40%, most of the panels still hover to operate. Consequently, peoples are compelled to purchase a number of panels in order to meet their energy demands or purchase single systems with large outputs. Availability of the solar cells types with higher efficiencies is on provided they are too costly to purchase. Ways to be accessed for increasing solar panel efficiencies are a plethora in number still one of the ways to be availed for accomplishing the said purpose while reducing costs, is tracking. Tracking helps in the wider projection of the panel to the Sun with increased power output. It could be single axis tracker. Commercially single tracker is cheaper to use through booming of power is considerable and therefore a minuscule increase in the price is worthy and acceptable, provided maintenance cost should float around on an average level.

  
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