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Electronics & Telecommunication Engineering Department



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OFFICIAL SPONSORSHIP LETTER

I write to confirm that the students **RUTUJA UMESH PATIL, NIVEDITA MADHU SHRIPURAM PRATIKSHA CHANDRAKANT PATIL, NIKITA DAVAL KABADE** of Nagesh Karajagi Orchid College Of Engineering & Technology, Project name **SOLAR TRACKING** system is in receipt of Official Financial and Technical Sponsorship from **SHAMS ENERGY**.

Under the project guide **Prof. Snehal Manmane** from **NKOCE** and **Shaikh Ayesha** from **SHAMS ENERGY**.



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A
MINI PROJECT REPORT
ON
SOLAR TRACKING SYSTEM

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

PRADNYA NIKETAN EDUCATION SOCIETY, PUNE.
NAGESH KARAJAGI ORCHID COLLEGE OF ENGINEERING & TECHNOLOGY,
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(AFFILIATED TO Dr. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE)
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Abstract: Solar energy is by far among the best sources of energy from every perspective. But harvesting solar energy efficiently is not very easy because of the fact that relative to the earth the sun is moving. Due to the Earth's rotation, the Sun rises and falls every day. More solar energy is collected by the end of the day if solar receivers are installed with a sun tracker system. Hence this project represents the tracking system for solar photovoltaic panel to extract maximum solar energy. The solar radiations are collected by solar panel. This energy is then stored in a battery. The battery is connected to the water purification unit.

The proposed solar tracking system consists of two LDR sensors which senses maximum solar power. The output of LDR sensors are given to the microcontroller. Arduino UNO microcontroller is the heart of this system that takes decision according to the algorithm and tilts the panel towards the direction of maximum energy. DC motor is used to rotate the solar panel. The output of solar panel is stored into the battery for further use. In this system the solar power is used to purify the water and water treatment is based on evaporation and condensation concepts. The process of using evaporation to purify water is called distillation. Commercial distilled water is made by boiling the water and condensing the steam. Contaminated water is heated up by solar energy, which sustains the separation of unwanted contents from evaporating water. Then one can store this purified evaporated water.

This proposed solar tracking system helps to improve the performance of solar panel by 20-25% than fixed panel. As the solar energy is utilized for water purification, this system also helps for household water treatment effectively. The system is easy to install and cost effective