

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JNANA SANGAMA", BELAGAVI - 590018



2021-2022

A PROJECT REPORT ON  
"DRYING FOOD PRODUCTS BY USING SOLAR HEAT  
ENERGY"

SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENT FOR THE AWARD OF THE  
DEGREE OF

BACHELOR OF ENGINEERING

IN

ELECTRICAL & ELECTRONICS ENGINEERING

SUBMITTED BY

SUPRIYA A	(ISV17EE012)
GAVISIDDAPPA	(ISV18EE003)
NETHRANANDA K N	(ISV18EE006)
RAKESH S	(ISV18EE008)

UNDER THE GUIDANCE OF:

Mrs. SHWETHA T.M M.TECH., MISTE  
Asst. Professor Dept. Of E&EE  
SIET, Tumakuru

HOD:

Mr. G. H. RAVI KUMAR M. Tech, MISTE  
HOD Dept. of E&EE  
SIET, Tumakuru



*N. Srinivas Kumar*  
PRINCIPAL  
SIET, TUMAKURU



Department of Electrical & Electronics Engineering

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Affiliated to VTU Belagavi, Approved by AICTE New Delhi, an ISO 9001:2015 Certified Institution)

SIRA ROAD, TUMAKURU-572106

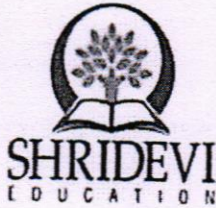


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An ISO 9001:2015 certified Institution

SIRA ROAD, TUMKURU-572106

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



CERTIFICATE

This is to certify that the project work entitled "DRYING FOOD PRODUCTS BY USING SOLAR HEAT ENERGY" has successfully carried out by SUPRIYA A (ISV17EE012), GAVISIDDAPPA (ISV18EE003), NETHRANANDA K N (ISV18EE006) & RAKESH S (ISV18EE008) bonafied students of Shridevi Institute of Engineering and Technology in partial fulfilment for the award of degree Bachelor of Engineering in Electrical & Electronics of the Visvesvaraya Technological University, during the year 2021-2022. It is certified that any corrections/suggestions indicated in the Internal Assessment, have been incorporated in the report. The project has been approved, as it satisfies the academic requirements in respect of project prescribed for the said degree.

Signature of the Guide

Mrs. SHWETHA T.M  
Asst. Professor  
Dept. of E&EE

Signature of the HOD

Mr. G.H RAVIKUMAR  
H.O.D  
Dept. of E&EE

Signature of the Principal

Dr. NARENDRA  
VISWANATH  
Principal,  
SIET

External Viva

Name of the  
Examiners:

1. G. H. RAVIKUMAR
2. Tanuja K.S

PRINCIPAL  
SIET., TUMAKURU.

Signature with date

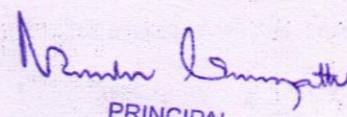
G. H. Ravine 22.7.22

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## ABSTRACT

The solar drying system utilizes solar energy to heat up air and to dry any food substance loaded, which is beneficial in reducing wastage of agricultural product and helps in preservation of agricultural product. Based on the limitations of the natural sun drying e.g. exposure to direct sunlight, liability to pests and rodents lack of proper monitoring, and the escalated cost of the mechanical dryer, this project presents the design, construction and performance of a hybrid solar dryer for food preservation. In the dryer, the heated air from a separate solar collector is passed through a grain bed, and at the same time, the drying cabinet absorbs solar energy directly through the transparent walls and roof. The results obtained during the test period revealed that the temperatures inside the dryer and solar collector were much higher than the ambient temperature during most hours of the day-light. The temperature rise inside the drying cabinet was up to 74% for about three hours immediately after 12.00 PM (noon). The dryer exhibited sufficient ability to dry food items reasonably rapidly to a safe moisture level and simultaneously it ensures a superior quality of the dried product. This will take only 2-3 days instead of 7-8 days of drying.

  
PRINCIPAL  
SIET., TUMAKURU.