KSCST

Karnataka State Council for Science and Technology

Indian Institute of Science Campus, Bengaluru - 560 012

Telephone: 080-23341652, 23348848, 23348849 ♦ **Telefax:** 080-23348840

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Mr. H. Hemanth Kumar
Executive Secretary

Ref: 7.1.01/SPP/953

16th March 2020

The Principal,
Alva's Institute of Engineering and Technology,
Moodbidri - 574 225.

Dear Sir/Madam,

Sub : Sanction of Student Project - 43rd Series: Year 2019-2020
Your Project Proposal Reference No. : ***43S_BE_3060***

Ref : Your Project Proposal entitled " ***DESIGN AND FABRICATION OF SOLAR DRYER WITH THE APPLICATION OF FORCED CONVECTION***

We are pleased to inform that your student project proposal referred above, has been approved by the Council under "Student Project Programme - 43rd Series" with a budgetary break-up as detailed below:

Student / s	Mr. Kevin Joseph Lobo	**Budget**	
	Mr. Karthik S Mendon	**Particulars**	**Amount (Rs.)**
	Mr. Shravan	Materials/Consumables	4,000.00
	Mr. B S Abhishek Acharya	Labour	500.00
Guide/s	Prof. K V Suresh	Travel	-
	-	Miscellaneous	500.00
Department	Mechanical Engineering	Report	500.00
		Total	**5,500.00**
	Five Thousand Five Hundred Rupees Only		

The following are the guidelines to carryout the project work :

a) The project should be performed based on the objectives of the proposal sent by you.

b) The project should be completed in all respects and one copy of the hardbound report along with softcopy of the full report in a CD (.pdf format) should be submitted to KSCST.

c) Any change in the project title and objectives, etc., or students is liable to rejection of the project and the amount sanctioned needs to be returned to KSCST.

d) Please quote your **project reference number printed above** in all your future correspondences.

e) **Important:** After completing the project, 2 to 3 page write-up (synopsis) needs to be sent by e-mail [spp@kscst.iisc.ernet.in] and should include following :

1) Title of the project
2) Name of the College & Department
3) Name of the students & Guide(s)
4) Keywords

PRINCIPAL
Alva's Institute of Engg. & Technology
Moodbidri - 574 225

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI 590018

A project report on

DESIGN AND FABRICATION OF SOLAR DRYER WITH THE APPLICATION OF FORCED CONVECTION

Submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

By

SHRAVAN	4AL15ME102
KARTHIK S MENDON	4AL16ME019
KEVIN JOSEPH LOBO	4AL16ME020
B S ABHISHEK ACHARYA	4AL16ME703

Under the Guidance of

Prof. K.V. Suresh

Professor

Department of Mechanical Engineering

ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY

MOODBIDRI-574225, KARNATAKA

2019 – 2020

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY (FONT18)

Mijar, Moodbidri D.K. -574225 – Karnataka(FONT14)

DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

Certified that the project work entitled "DESIGN AND FABRICATION OF SOLAR DRYER WITH THE APPLICATION OF FORCED CONVECTION" is a bona fide work carried out by

SHRAVAN	4AL15ME102
KARTHIK S MENDON	4AL16ME019
KEVIN JOSEPH I OBO	4AL16ME020
B S ABHISHEK ACHARYA	4AL16ME703

are bonafide student of Mechanical Engineering Alva's Institute of Engineering and Technology in partial fulfillment for the award of BACHELOR OF ENGINEERING in MECHANICAL ENGINEERING of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2019–2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Prof. K.V. Suresh	**Dr. Satyanarayan**	**Dr.Peter Fernandes .**
Project Guide	**Head of the Department**	**Principal**

External Viva

Name of the Examiners	**Signature with Date**
1. D.R.Kothari	D K Kothari
2. Gopal Krishna . U . B.	

ABSTRACT

Food is a basic need for all human beings along with air and water. Food problem arises in most developing countries mainly due to the inability to preserve food surpluses rather than due to low production. Agricultural yields are usually more than the immediate consumption needs, resulting in wastage of food surpluses during the short harvest periods and scarcity during post-harvest period. Hence, a reduction in the post-harvest losses of food products should have considerable effect on the economy of these countries. More than 80% of food is being produced by small farmers in developing countries. These farmers dry food products by natural sun drying, an advantage being that solar energy is available free of cost, but there are several disadvantages which are responsible for degradation and poor quality of the end product. Certain variety of food products are not supposed to be dried by natural sun drying because they lose certain basic desirable characteristics. Experiments carried out in various countries have clearly shown that solar dryers can be effectively used for drying agricultural produce. It is a question of adopting it and designing the right type of solar dryer .A forced convection solar dryer was designed and fabricated. The thermal performance of the solar dryer under prevailing weather conditions was experimentally investigated. The system consists of a hollow cylindrical solar air heater connected to a drying chamber. A blower was used to force the heated air to the drying chamber. Drying experiments were performed for different kind of vegetable and fruits.

In this Project Research we study the efficiency of the solar dryer with respect to different time and temperature and analyzing the controlling of temperature in the solar dryer chamber.

Keywords: Design and Construction, Fabrication and Operation of Solar Dyer