REPORT OF
DESIGN ENGINEERING
(PHASE I)

DC POWERED GRASS CUTTER

SUBMITTED BY:

DAVIDSON GEORGE (MBC18EC012)
JABIN BABU (MBC18EC020)
ELIAS PRINCE (MBC18EC014)
ALWIN GEORGE (MBC18EC006)

FACULTY IN-CHARGE – TOM J KURIAKOSE

HoD ECE

WORKING

The electric grass cutter is mainly depended on DC power. Here rotation of motor is used to convert electric energy to mechanical energy.

Here the blade is fixed to a dc powered motor, which is permanently fixed to the PVC pipe. Now the motor, which is fixed in the pipe is now connected to a one way switch, by the means of wire.

Now the switch is connected to our dc power source which is a 9 volt battery. And the rest is done accordingly.

As we turn the switch ON, dc power from the battery goes via the switch reaches the motor, which in turn rotates the blade .

ADVANTAGES

- Simple construction and low cost
- Ease of us
- No fuel cost
- No pollution

DISADVANTAGES

- Blade failure
- Manually operated
- Difficult to operate in thick bushes

APPLICATIONS

- For house gardens
- For playgrounds
- For small farms

CONCLUSION

The output of this project can be improved by increasing reduction of cost, increasing the efficiency of the blades and Increasing battery and motor voltages. We can implement speed control circuit for more reliable and stable operation. Due to the power demand we choose the dc power source. So there is no running cost. The DC motor is operated in low power with high efficiency. It will be very much useful for the user. This project concludes that the DC motor is used to convert electrical to mechanical energy. The DC motor maintains in a constant speed in the condition of the load applied. The DC motor speed can be able to maintain constant and the performance can be done in proper manner.

REFERENCES

[1] "The Design of Equalizer Windings for Lap-Wound DC Machines", Alaric Pagel, Member, IEEE, Alan S. Meyer, and Charles F. Landy, Senior Member, IEEE. IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, VOL. 37, NO. 4, JULY/AUGUST 2001.

[2] Wikipedia

[3]Google

[4]Youtube

REPORT OF DESIGN PROJECT (PHASE II)

MBC

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING AND TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

SEMESTER 5

DESIGN PROJECT

(ME341)

MOTORIZED VEGETABLE CUTTER

Ashwin R - MBC17ME010

Leo Philips - MBC17ME032

Richu Harees - MBC17ME040

Roshin Roy Thomas - MBC17ME042

FACULTY IN-CHARGE - |BIJU CHACKO/LIBIN V KORAH

Department of
Mechanical Engineering
Mar Baselios Christian College of
Engineering & Technology
Peermade - 685 531

19/11/25

Head of Department
Mechanical Engineering
MBC College of Engineering & Technology
Peermade, Idukki - 685 531

ABSTRACT

Automation was the rage of the engineering world. The investigation on the existing vegetable cutting machine reviews the following drawbacks such as high investment cost, the contamination, additional manpower and time consumption caused by manual processing. The setup involves a hopper arrangement and the pressure block is actuated by a pneumatic cylinder, and has a reciprocatory motion along the vertical length of casing, while the cutting grid remains fixed.

The air supply to the cylinder is controlled by a solenoid actuated DCV, which is controlled by a microcontroller. The entry of vegetable into the grid apparatus is controlled using a pneumatic cylinder along with a single bar mechanism. The vegetables are feeded via inclined tube. A tray is placed at the bottom of the apparatus to collect the vegetable pieces after processing. Variable pressure setting for cutting different vegetables is carried out by the microcontroller.

The intricacy involved with such a system is the type of vegetables it can process. The system is advantageous in the fact that existing automation is high in cost, and the power consumption is high. The proposed work is benefitted by pneumatic power, which is abundant. The above mentioned cutter has some demerits with regards to its operation. First of all, the vegetable feeding is not automatic, and a person has to devote his time to feed the vegetable one by one, till the required quantity is cut. Most important of all, is the initial investment on the cutter. The cutter is approximately priced at a range of $ 3500, inclusive of shipping cost and taxes. It is a high investment, for those who run a mid-level catering business.

Therefore, considering all these demerits, the idea for a pneumatics powered cutter is conceived. Some of the key problems, which were identified for the initiation of this work, are high cost of the existing automated system.

REVAMPING OF WASHING MACHINE TO WASH AND DRY CAPSICUM GENUS CHILLI PEPPER OR RED CHILLIES

PROJECT REPORT

Submitted by

ABIN AJI JOHN	**MBC15ME003**
EDWIN JACOB MANOJ	**MBC15ME016**
MANU GEORGE	**MBC15ME034**
THOMAS THAMPI	**MBC15ME054**

to

APJ Abdul Kalam Technological University

in partial fulfilment of the requirements for the award of the Degree

of

Bachelor of Technology

in

Mechanical Engineering

Department of Mechanical Engineering

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING & TECHNOLOGY PEERMADE

MAY, 2019

DECLARATION

I undersigned hereby declare that the project report "Revamping of Washing machine to wash and dry capsicum genuschilli pepper or Red chillies", submitted for partial fulfillment of the requirements for the award of degree of Bachelor of Technology of the MG University/ APJ Abdul Kalam Technological University, Kerala, is a bonafide work done by us under supervision of Prof. Rojin Mathews

This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

Place: Peermade

Date: 28/04/2019

ABIN AJI JOHN
EDWIN JACOB MANOJ
MANU GEORGE
THOMAS THAMPI

Department of
Mechanical Engineering
Mar Baselios Christian College of
Engineering & Technology
Peermade - 685 531

DEPARTMENT OF MECHANICAL ENGINEERING
MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING AND TECHNOLOGY PEERMADE

MBC

CERTIFICATE

This is to certify that the report entitled **"Revamping of Washing Machine to Wash and Dry Capsicum Genus chilli pepper or Red chillies"** submitted by **Abin Aji John** (MBC15ME003), **Edwin Jacob Manoj** (MBC15ME016), **Manu George** (MBC15ME034), **Thomas Thampi** (MBC15ME054) to APJ Abdul Kalam Technological University in partial fulfilment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science and Engineering is a bonafide record of the project work carried out by them under my guidance and supervision.

28/04/2019

Prof. Rojin Mathews
Guide
Dept. of Mechanical Engineering

Prof.Ashif S, Prof.Manikandan S
Project Coordinator
Dept. of Mechanical Engineering

190428

Dr.Roja Abraham Raju
Head of Department
Dept. of Mechanical Engineering

Head of Department
Mechanical Engineering
MBC College of Engineering & Technology
Peermade, Idukki - 685 531

Place: Peermade
Date: 28/04/2019

Department of
Mechanical Engineering
Mar Baselios Christian College of
Engineering & Technology
Peermade - 685 531

ACKNOWLEDGEMENT

The success and final outcome of this project required a lot of guidance and assistance from many people and I am extremely privileged to have got this all along the completion of my project. All that I have done is only due to such supervision and assistance and I would not forget to thank them.

I respect and thank the **Management** of **Mar Baselios Christian College of Engineering and Technology** for providing me an opportunity and platform for doing the project work.

I am extremely thankful to our beloved **Principal, Dr. Pradeep C** for providing such a nice support and facilities to carry out this project.

I am extremely indebted to our Head of the Department **Dr. Roja Abraham Raju,** Professor & Head, Department of Mechanical Engineering, for his valuable suggestions and encouragement during the course of my project work.

I owe my deep gratitude to our project guide **Mr. Rojin Mathews** Asst. Professor, Department of Mechanical Engineering who took keen interest on our project and guided us all along, till the completion of our project work by providing all the necessary information for developing a good system.

I am thankful to and fortunate enough to get constant encouragement, support and guidance from all the faculty members of Department of Mechanical Engineering, which helped us in successfully completing our project work. Also, I would like to extend our sincere esteems to all staff in laboratory for their timely support.

ABIN AJI JOHN

EDWIN JACOB MANOJ

MANU GEORGE

THOMAS THAMPI

ABSTRACT

Red chilly is the most important edible spice in Indian cuisine, which is available in both fresh and dried form. Most of the dried chilies are transformed into powder form for the ease of use. Commercially available red chilly contains impurities such as dust, pesticides, pest and insect poops etc. So, it is necessary to wash the chilly before our consumption. Drying of chilly is also another important operation, where the water activity on the product is maintained to improve storage life so that it is not spoilt by microbes. The conventional way of cleaning red chilies is by hand washing and drying by means of solar radiation. This has some limitations such as requires human effort, large open area and finally it is weather dependent. In this paper, we are introducing a washer cum dryer mechanism as a solution to the above-mentioned problem

CONTENTS

Title	Page No.
Acknowledgements	iii
Abstract	iv
List of Tables	iv
List of Figures	v
CHAPTER 1	
INTRODUCTION	
1.1 General Background	1
1.2 Open sun drying	3
CHAPTER 2	
LITERATURE SURVEY	8
2.1 Theoretical Investigations	8
CHAPTER 3	
METHODOLOGY	12
3.1 Modelling	12
3.2 System description	12
3.3 Components of experimental setup	14
3.3.1 Washer	14
3.3.2 Dryer system	15
3.4 Experimental procedure	16
CHAPTER 4	
RESULTS AND DISCUSSION	17
CHAPTER 5	
CONCLUSION AND FUTURE SCOPE	22
REFERENCES	23

JOURNAL PUBLICATIONS

International Journal of Applied Engineering Research ISSN 0973-4562 Volume ?? Number ? (2019) pp. 0000-0000

Revamping of Washing machine to wash and dry capsicum genuschilli pepper or Red chillies

Rojin Mathews[1], Abin Aji John[2], Edwin Jacob Manoj[3], Manu George[4], Thomas Thampi[5]

[1]Asst Professor, Mar Baselios Christian College Of Engineering and Technology, Peermade, Idukki, Kerala
[2,3,4,5]UG Scholar, , Mar Baselios Christian College Of Engineering and Technology, Peermade, Idukki, Kerala

Abstract

Red chilly is the most important edible spice in Indian cuisine, which is available in both fresh and dried form. Most of the dried chilies are transformed into powder form for the ease of use. Commercially available red chilly contains impurities such as dust, pesticides, pest and insect poops etc. So, it is necessary to wash the chilly before our consumption. Drying of chilly is also another important operation, where the water activity on the product is maintained to improve storage life so that it is not spoilt by microbes. The conventional way of cleaning red chilies is by hand washing and drying by means of solar radiation. This has some limitations such as requires human effort, large open area and finally it is weather dependent. In this paper, we are introducing a washer cum dryer mechanism as a solution to the above-mentioned problem.

Keywords: Spice washer; Spice dryer; Effective washing; Temperature controlled hot air distribution for drying;

Introduction

Chillies are the ripe fruits of the species of genus Capsicum that is produced and consumed in various parts of the world, not only for its culinary qualities but also for its nutritional content and potential industrialization. Chillies, which contain high moisture content of 65% to 80% depending on whether partially dried on the plant or harvested while still succulent. It is essential to reduce the moisture content and provide aeration to the chillies after harvesting to avoid development of microflora and subsequent loss of quality or total spoilage. Traditionally, fresh chillies are preserved by drying the fruits immediately after harvest under the sun without any special treatment. [3]

Traditionally, fresh chillies are preserved by drying the fruits immediately after harvest under the sun without any special treatment. Sun drying of chillies remains the most widely practiced method throughout Asia, Africa, and Central and South America. The chillies are spread out in the sun on a hard dry ground/ concrete floor/flat roof of a house in thin layers. Partial removal of moisture is drying. The term drying is generally used for drying under the influence of nonconventional energy sources like sun and wind. [2] A word closely related to drying is dehydration. Dehydration is the process of removal of moisture by application of artificial heat under controlled conditions of temperature, humidity and air flow. The main objective of drying is removal of free water from fruits and vegetables to the extent where microorganisms don't survive and reproduce. . Thus, reduction in water content controls the biological and chemical forces respectively which act upon fruits and vegetables facilitating preservation of these perishable have described the conventional processing methods of chillies and have reviewed the research and developmental studies carried out in India and abroad to develop suitable postharvest technologies for this important cash crop. [1]

For the culinary purposes the chilly available in the market is dried and contains moisture content about 10% to 20%.It may be used whole or powdered depending on the purpose. The commercially available chilly contain impurities such as fungus, chemicals, animal and insect poops etc. so it is necessary to wash the chilly before consumption. For making chilly in the powder form it is initially washed and then dried under open sun. The traditional open-sun drying method, which is economic but nevertheless has inherent limitations, such as high losses due to inadequate drying and attacks from fungi, insects, birds, rodents and weather dependent. Additionally, there may be structural damage such as shrinkage, stiffness, loss of volatile compounds and nutrients, lower water uptake during dehydration, rain damage, time consuming and requires more human effort.

Drying processes range from open sun drying to industrial drying. In most of the developing countries, use of fossil fuels for drying of agricultural products has not been practically feasible due to unaffordable costs to majority of the farmers. On the other hand, traditional open sun drying practiced on a large scale in the rural areas of the developing countries suffers from high product losses due to inadequate drying, fungal growth, encroachment of insects, birds and rodents, etc. Properly designed solar dryers may provide a much-needed appropriate alternative for drying of some of the agricultural products in developing countries. [4] Mechanical drying is

National Conference on Advances in Mechanical Engineering (NCAME-2019),10th May, 2019
Department of Mechanical Engineering, Mar Baselios Christian College of Engineering and Technology,Idukki

mainly used in industrial countries and is not applicable to small farms in developing countries due to high investment and operating costs.

Here in this mechanism, we are introducing a washer cum dryer. Effective time for drying of chilly can be considerably reduced and it is independent of weather condition. The main objective of the experiment is controlled temperature inside the chamber and controlled rotation of the drum.

Methods

By presenting a suitable schematic layout with sufficient data the experimental set up can be generated.The system includes washer, dryer, dimmer, vacuum pump, temperature controlling module. The technical characteristics of the components are follows

Component	Specifications
Washing machine	4 ltr , 750 W
Dryer	2000 W
Blower	12V, 2A
Dimmer	1500W
Contactor	240V, 25A
Thermostat1	85-270V AC/DC

Table 1 – Technical characteristics of equipment

The washer consist of two drums, outer is fixed and inner is rotating. The speed of the drum is controlled by a dimmer. The water intake is done by a solenoid valve and water is carried away by vacuum pump.

Schematic layout of Experimental set up

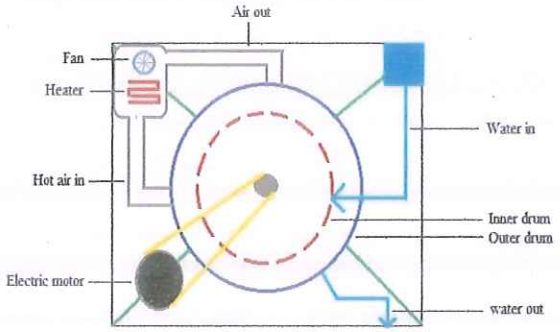


Fig 1 –Schematic layout.

This schematic layout represents a pre model of experimental set up. Inner being rotated by an electric motor transmitting power with the help of a belt drive. Water in and out is carried using solenoid valve and vacuum pump. After washing drying is carried out using a heating coil and blower system. The temperature inside the chamber is controlled by a thermocouple and contactor. The speed of the universal motor was controlled by a dimmerstat. The hot air from the dryer made to flow into the drum by a blower and it circulates inside the drum which increases the temperature inside the drum.

Components of Experimental set up

Dryer system

Dryer system consist assembly of blower, heating coil inside an iron frame and temperature controller cum indicator. The nichrome element was used as heating coil. Most resistance wire heating elements use nichrome 80/20 wire or strip. Nichrome being an ideal material, because it has relatively high resistance and forms an adherent layer of chromium oxide when it heated. The heating chamber is located in front of the dryer and hot air blows into the chamber directly. A copper-constantan thermocouple connected to a thermostat was provided in the outer drum to sense the temperature inside the drying chamber and act accordingly to supply/cut off the power to the heating coil.

Fig 2 – Dryer system

Washer

The washer consist assembly of rotating and fixed drums, water intake system, vacuum pump and dimmer. The rotary drum was placed inside the fixed drum and it run by a motor-pulley arrangement. The fixed drum is supported by springs and fixtures. The main purposes of the fixed drum are supporting the rotary drum and prevent splashing of water during washing. Water in to the drum was controlled by solenoid valves. Solenoid valve which serves as

elecromechanical device in which the solenoid uses an electric current to generate a magnetic field and there by operate a mechanism which regulates the fluid flow in the valve. The water after washing was carried away by vacuum pump. The dimmer was used to control the rpm of the rotating drum by controlling the voltage of the electric motor. Generally, they are resistance coil serves as a potentiometer does. In resistance type when the knob in zero position the voltage drop across the resistance is maximum and output voltage will be minimum, when the knob kept at maximum position voltage directly connected to the motor.

Fig 3: Washing system

Experimental procedure

Dry weight of chilly was determined by drying the chilly under open sun. At the end of two consecutive measurements, samples were considered totally dry on condition that it can be powdered in a flour mill. And this value is compared with ours. To carry out our experiment, 200 g of chilly were used for drying. The chilly is initially washed inside the rotating drum for a few minutes and the water is drained out. Then the drum is allowed to spin at higher rpm to drain out the remaining water. After draining, the dryer system is switched on and along with the drum is rotated at lower rpm. The experiments were conducted at 50°C, 55°C and 60°C set temperatures. As the drying temperature reached a set value thermostat cut the supply of heating coil.

Fig 4: Experimental setup

Result and Discussion

For conducting the experiment we have taken 200g of chilly initially, after washing the weight has increased to 254g. Here 54g of water has been absorbed by the chilly after washing. Variation in moisture content is a function of drying time, and the hot air flow variation had a strong role in conveying evaporated water from product surface and reducing drying time. On supplying 50°C of hot air, it took about 1hr and 20 min to dry the chilly. On second trail by supplying 55°C of hot air, it took 1hr and 5 min to dry the chilly. On the final trial by supplying 60°C of hot air, it took only about 50 min to dry the chilly completely. On analyzing we were able to find out that on increasing temperature cause reduction in the drying time. But we cannot exceed the temperature beyond 60°C as it may lose the quality of the chilly.

Sl No	Drying temperature	Wet weight	Dry weight	Drying time
1	50°C	255 g	185g	1hr 20min
2	55°C	248g	190g	1hr 5min
3	60°C	253g	173g	50min

Table 2 - Experimental result of dryer

In natural sun drying it takes 5hr and 30min for drying the chilly. The drying rate was significantly higher at dryer than that of open sun drying. The maximum drying rate is obtained at 60°C. By use of this dryer, the drying time for chilly is considerably reduced. Fig 5 shows drying temperature versus drying time. As it can be seen that drying time was reduced with increase in temperature. The experiment with drying temperature 60°C has lowest drying time and experiment with lowest drying temperature has highest drying time. The contactor cut off the supply of heating coil to obtain set temperature of drying air. So, drying air temperature fluctuations did not occur. Also, the total energy consumption was reduced using this control technique.

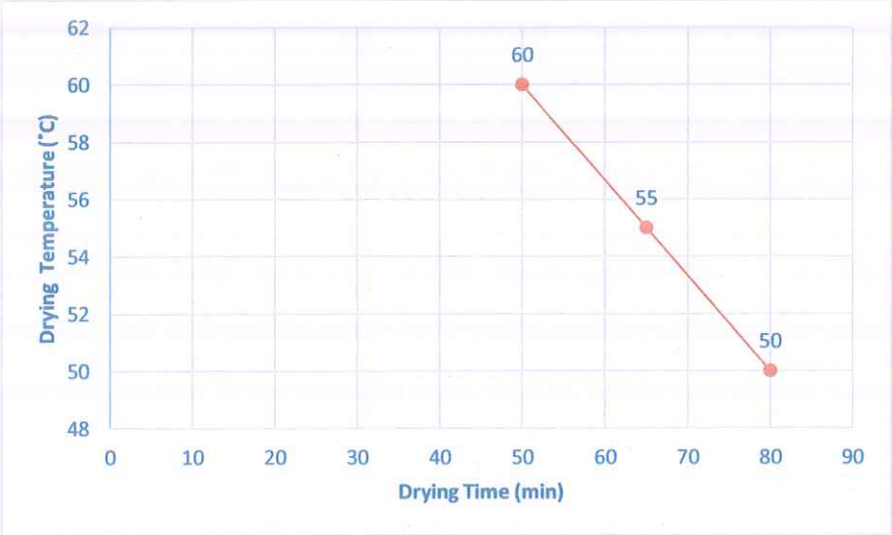


Fig 5 – Drying temperature v/s drying time

To determine the drying rate in open sun, 200g of chilly was used. The chilly was washed by hand and kept under open sun for drying. The temperature of the sun was not constant. In the first experiment it took 5hr and 30 mins to dry the chilly and the average temperature was 33°C. In the second experiment it took 6hr to dry the chilly. The experiments were conducted at different days and the average temperature on those days were 30°C, 31°C and 33°C. by analyzing the results the drying time is dependent on the weather condition.

Table 3 shows the experiment result and it shows the wet and dry weight of chilly. The rate of evaporation depend on the availability of wind, presents of clouds and other weather conditions. The fig 6 shows graph of drying temperature under open sun versus drying time. From the graph it was clear that when temperature increases the drying time decreases but the change was small. Compared to that of dryer, the drying time is significantly higher for open sun drying.

SL No	Temperature	Wet weight	Dry weight	Drying time
1	30°C	255g	190g	380mins
2	31°C	258g	183g	360mins
3	33°C	250g	180g	330mins

Table 3 – Experimental result of open sun drying

0000

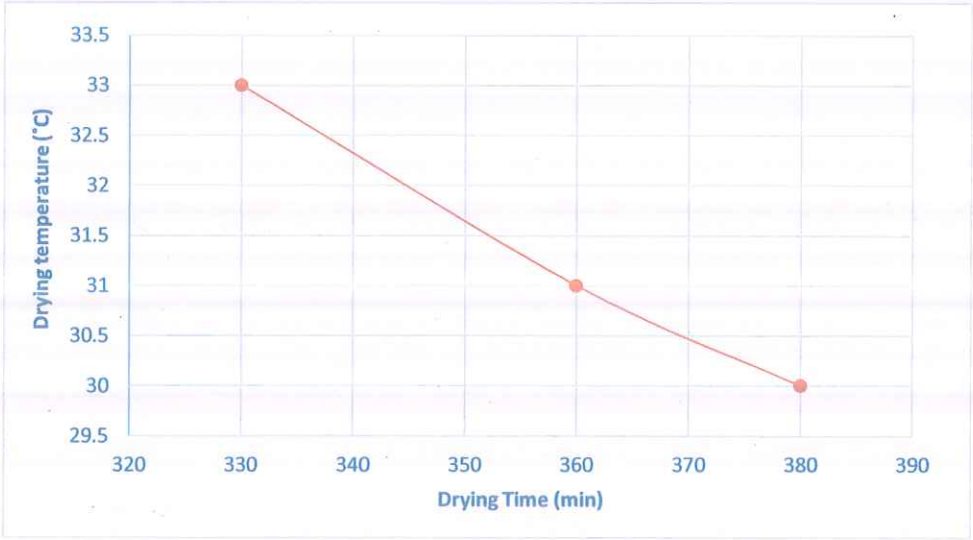


Fig 6 – Drying temperature v/s drying time of open sun

Table 4 shows the energy consumption of the system. The energy consumption varies from 500W to 800W depending upon the drying time and drying temperature. The experiment with temperature 50°C taken the maximum energy because the drying time for the experiment was high and experiment with temperature 60°C taken the minimum energy due to lower drying time. From the table it is clear that as drying time increases the energy consumption also increases it is due to heater and drum needs to work for more time. And as the drying temperature increase the energy consumption decreases because the heater only works for shorter time. The fig 7 shows the graph between drying temperature and energy consumed.

From the graph 7 the experiment with temperature 50°C consumes maximum energy and experiment with 50°C consumes minimum energy. The difference is due to their variation in drying time. Fig 8 shows the graph between energy consumed per hour versus drying temperature. From the graph it was clear that for a specific period of time the energy consumption is same for the three set of temperature. The experiments with temperature 50°c, 55°C and 60°C takes same amount of energy for one hour. This is due to the reason that the effect of maintaining the temperature at each experiment was same, the supply to the heating coil is adjusted to maintain the temperature and is same for all set of temperatures

Sl No	Drying Temperature(°C)	Drying time(hrs)	Energy meter Reading(Kwh)
1	50	1hr 20mins	0.8
2	55	1hr 05mins	0.65
3	60	50mins	0.5

Table 4 – Energy consumption

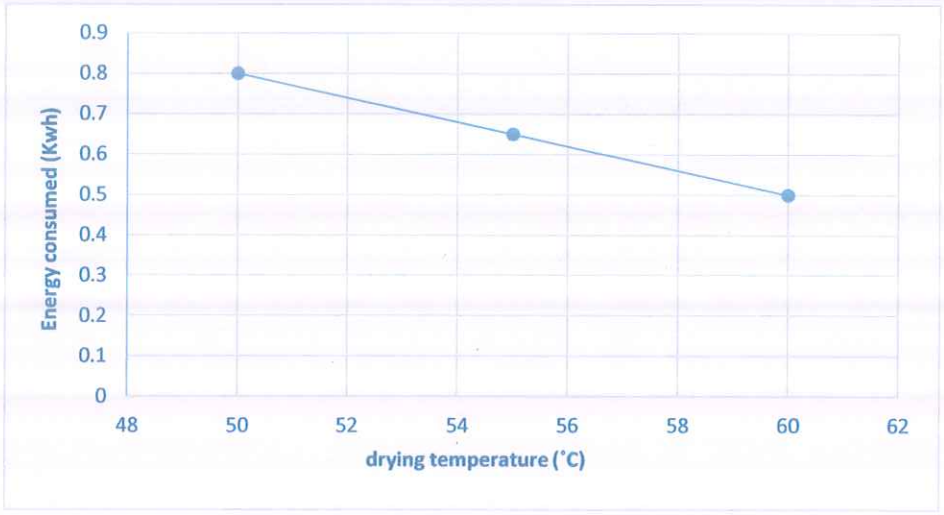


Fig 7 – Energy consumed v/s drying temperature

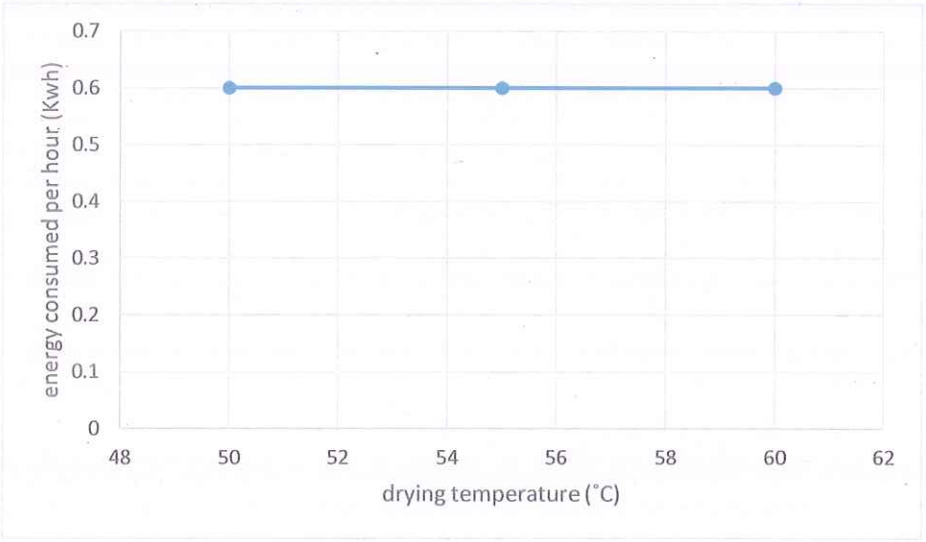


Fig 8 – Energy consumed per hour v/s drying temperature

Conclusion

From the above two experiments it was found that the dryer is more efficient and more convenient than open sun drying. The drying time was significantly higher in open sun while compared to the dryer. Open sun drying has various limitations like, improper drying, it is weather dependent, attacks from insects, birds and fungi. While the dryer system was independent of weather and it took much lesser time to dry the chilly. From this observation, it can conclude that our experimental setup was more efficient than open sun drying and will have better contribution in the households and in flour mills for washing and drying the chilly. It is more efficient and economical.

Future Scope

In this existing model with suitable modifications other crops can also be dried by varying the temperature and air flow. The velocity of the air blown inside can be controlled and maintained for better drying operation. Ensuring constant suitable temperature is prevailed inside the chamber so that the crop get dried sooner. After studying the characteristics of each crop and along with programmed software it can be able to run the whole system automatically

National Conference on Advances in Mechanical Engineering (NCAME-2019),10th May, 2019
Department of Mechanical Engineering, Mar Baselios Christian College of Engineering and Technology,Idukki

Reference

[1] Venkata Satish Kuchil, Ravi Guptal and Dilip Singh Kachwaya. "A review on dehydration of chilli" Plant Archives Vol. 14 No. 2, 2014 pp. 637-642.

[2] Vivek Tomar , G.N. TiwariBrian Norton. "Solar dryers for tropical food preservation: Thermo physics of crops, systems and components" 2017

[3] S. Kaleemullah , R. Kailappan. "Modelling of thin-layer drying kinetics of red chillies" Journal of Food Engineering 76 (2006)

[4] Pallav Purohit, Atul Kumar, Tara Chandra Kandpal. "Solar drying vs. open sun drying: A framework for financial evaluation". Solar Energy 80 (2006)

[5] Margarita Castillo Télleza, Isaac Pilatowsky Figueroab, Erick César López Vidañab, Omar Sarracino Martínezc, Geovanni Hernández Galvez. "Dehydration of the red chilli (C using an indirect-type forced convection solar dryer" 08.2016

[6] M.A. Hossain , B.K. Bala. "Drying of hot chilli using solar tunnel drier" Solar Energy 81 (2007)

[7] D. K. Rabha, P. Muthukumar, C. Somayaji. "Experimental Investigation of Thin Layer Drying Kinetics of Ghost Chill Pepper. Dried in a Forced Convection Solar Tunnel Dryer" Renewable Energy (2016),

[8] Mustafa Aktas, Ataollah Khanlari , Burak Aktekeli , Ali Amini. "Analysis of a new drying chamber for heat pump mint leaves dryer" 2016

[9] Leon, M, Kumar, S, Bhattacharya, S.C. "A comprehensive procedure for performance evaluation of solar food dryers" 2002

[10] Hossain, M.A., Woods, J.L., Bala, B.K. "Optimisation of solar tunnel drier for drying of chilli without color loss". 2005

Department of
Mechanical Engineering
Mar Baselios Christian College of
Engineering & Technology
Peermade - 685 531

verified
28/04/19
Rajin Mathew
AP- MED

190428
Head of Department
Mechanical Engineering
MBC College of Engineering & Technology
Peermade, Idukki - 685 531

NEWSPAPER REPORT

പിഎസ്‌സി പരീക്ഷാ തട്ടിപ്പിലെ പങ്കാളിത്തം സമ്മതിച്ച് പോലീസ് ഉദ്യോഗസ്ഥൻ

പത്തനംതിട്ട ജനറൽ ആശുപത്രി സോഫ്റ്റ്‌വേർ വിവരങ്ങൾ ചോർത്തി

സർക്കാർ/ പൊതുമേഖല/ സ്വകാര്യ സ്ഥാപനങ്ങളിൽ ടെക്നീഷ്യൻ അപ്രന്റിസ് പരിശീലനം

പാലായിൽ ലോക്സഭാ തെരഞ്ഞെടുപ്പിന്റെ തനിയാവർത്തനമാകും: മുല്ലപ്പള്ളി

മുളക് കഴുകി ഉണങ്ങാൻ യന്ത്രം

സ്പെഷലിസ്റ്റ് അധ്യാപകർ സെക്രട്ടേറിയറ്റ് മാർച്ച് നടത്തി

മോഷ്ടാവെന്ന് കരുതി ബസ് ഡ്രൈവറെ ആൾക്കൂട്ടം തല്ലിക്കൊന്നു

പ്രളയം: അടിയന്തര സഹായമായി ഇതുവരെ 21.73 കോടി രൂപ അനുവദിച്ചു

paper.deepika.com

This is a newspaper clipping showing a socially relevant new machine designed by students of mechanical department of MBCCET to dry capsicum genus chilli pepper or red chillies.

CERTIFICATES OF STUDENTS WHO HAVE PARTICIPATED IN VARIOUS COMPETITIONS ACROSS THE STATE.

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
&
KERALA STATE COUNCIL FOR SCIENCE, TECHNOLOGY AND ENVIRONMENT

CERTIFICATE OF PARTICIPATION

KTU TECHFEST 2019

This is to certify that Shri./~~Kumari~~/Smt. RAHUL P SANTHOSH of MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING has exhibited the innovation titled ELECTRICITY PRODUCTION FROM FOOD WASTE LEACHATE USING MICROBIAL FUEL CELLS in the contest/~~exhibition~~ category of KSCSTE TEKON as part of KTU TECHFEST 2019 jointly organised by APJ Abdul Kalam Technological University and Kerala State Council for Science, Technology and Environment from 15 -17 February 2019 and hosted by Government Engineering College Trichur.

Dr. Usha Titus IAS
Vice Chancellor,
APJ Abdul Kalam
Technological University,
Kerala.

Dr. Pradeep Kumar S.
Member Secretary,
Kerala State Council for
Science, Technology
& Environment.

Dr. Jayanand B.
Principal,
Government
Engineering College
Trichur.

No. :
Date: 17/02/2019

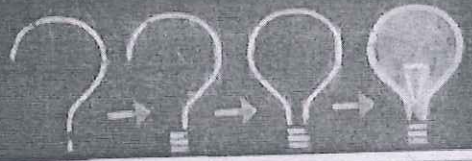
VARIOUS COMPETITIONS HELD INSIDE THE COLLEGE FOR INNOVATIVE MINDS

MAR BASELIOS CHRISTIAN
COLLEGE OF ENGINEERING & TECHNOLOGY

KUTTIKKANAM, PEERMADE

"An idea may not be big, it's about making it accomplished"

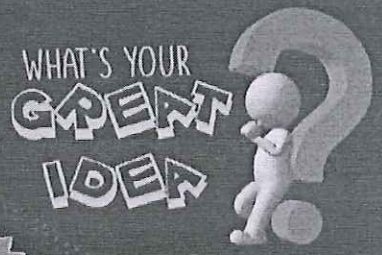
CiTE presents



CREATIVE SPARK-2016

THE COMPETITION FOR BIG THINKERS

competition closes on 25th October 2016



EXCLUSIVELY FOR MBC STUDENTS

PRIZES WORTH 10K

If your IDEA is

- Innovative
- Implementable
- Having social impact

HOW TO APPLY?

Apply online: www.mbcpeermade.com
or
Drop the participation form in the drop box

Prof. Arjun Hari M
(Chief coordinator)

Department coordinators: Prof. Bilu Susan Babu (CE), Prof. Soumya Sara Koshy (CSE), Prof. Geethos Ninan (ECE), Prof. Gijo Yoyaky (EEE), Prof. Stephen George (ME)

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING AND TECHNOLOGY

CENTRE FOR INNOVATIVE TECHNOLOGY AND ENTREPRENEURSHIP (CiTE)

MBC/CiTE/1004/2017 01.03.2017

NOTICE

The following ideas has been selected as the Best Ideas in the Creative Spark 2016 conducted by CiTE during the month of October 2016.

Title of the Idea	Name of the Student	Department
Robust network traffic classification with high security	Jesso Ben Thomas	S8-CSE
Magnetic gear	Joel Shajan Varghese	S4-EEE
ATM without ATM card	Nithin Varghese	S6-ECE

The winners will be awarded cash prize with a merit certificate on 3rd March 2017 during the Inaugural function of Swastika 17.

Principal

To be read in all Classes.

Copy to

Principal Office
Bursar
All HoD's
Office
CiTE Office
Notice Boards

CiTE CREATIVE SPARK 2018
WINNERS

CHEST NO	NAME	TITLE	Semester
Computer Science and Engineering Department			
CS-1	Divya Merin Alex	Crop disease detection using machine Learning	S6
Electronics and Communication Engineering Departmet			
EC-7	Hannah Mary Wilson	Elephant reppellant device	S8
EC-6	Greeshma G	Automated blood flow alerting system for negative pressure wound therapy	S8
Electrical and Electronics Engineering Department			
EE-2	Vishal Chacko	Semi humanoid robot	S6
Mechanical Engineering Department			
ME-3	Abin Aji John	Machinery to wash and dry some specific edibles	S6
Civil Engineering Department			
CE-2	Amal J.S. Luke	Energy Production from food waste using microbial fuel cell	S8

JUDGES	Signature
Dr. Anoop K.J.	
Dr. Roja A.R.	
Prof. Jobin Varghese	
Dr. Teena Joseph	
Prof. Manoj Nallanathel	

16/3/19

CiTE Coordinator : Dr. Anoop T.R.

PRINCIPAL

NATIONAL LEVEL PROJECT COMPETITION FOR INNOVATIVE MINDS ACROSS THE COUNTRY

From,

Prof. Geethos Ninan

AZTECS Coordinator

ECE Department

MBCCET, Peermade

To,

The Principal

Mar Baselios Christian College of Engineering And Technology

Peermade, Idukki, Kerala.

Pin – 685531

Subject: National Level Project Competition **NAVRITI'18** hosted by AZTECS(Dept. Association, ECE) in association with **Swastika '18.**

Respected sir,

Department of ECE wants to organize a National Level Project Competition NAVRITI'18 hosted by AZTECS (Dept. Association, ECE) in association with Swastika '18 on 8th Feb 2018. We need to start the online application and invite various institutions for the participation. So I request you to give me the permission to conduct the same and also your great support for making the event successful.

Thanking you,

Yours faithfully,

06-01-2018

Prof. Geethos Ninan

Forwarded and Recommended

Head of Department
Electronics & Communication Engineering
Mar Baselios Christian College of
Engineering & Technology
Peermade - 685 531

Permission granted

Internal Quality Assurance Cell

Association of Electronics and Communication Engineers (AZTECS)

Department of Electronics & Communication Engineering

Report on NAVRITI 2018

- As part of Swastika'18, the national level techno-cultural fest, AZTECS organised the the National Level Technical Fest NAVRITI'18.
- 30 projects were shortlisted from around 50 project participation requests received.
- 28 participants from various colleges in kerala participated in the competition.
- The First Prize was for the project Mixed Mode Solar Dryer with Thermal Energy Storage , from Amal Jyothi College of Engineering, Kanjirappally.
- The project Aqua-Gen (water powered generator) , from Royal College of Engineering and Technology, Thrissur got the second Prize.
- The total budget for the event is estimated to be Rs. 32,0000/-

Geethos Ninan

Almaria Joseph

(AZTECS Coordinators)

Elias Janson K

(Head of the Department)

Head of Department
Electronics & Communication Engineering
Mar Baselios Christian College of
Engineering & Technology
Peermade - 685 531

MAR BASELIOS CHRISTIAN
COLLEGE OF ENGINEERING & TECHNOLOGY
KUTTIKKANAM, PEERMADE

NATIONAL LEVEL PROJECT COMPETITION

NAVRITI'18

INTRODUCE INNOVATE IMPLEMENT

Certificate of Excellence

This is to certify that JIJO JOSE of Amal Jyothi College of Engineering, Kanjirappally has won 1st position in NAVRITI'18, National Level Project Competition held as part of SWASTIKA'18, National Level Techno Cultural Fest at Mar Baselios Christian College of Engineering and Technology, Peermade on 8th February 2018.

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING & TECHNOLOGY PEERMADE - 685 531

Saju Alex
Student Co-ordinator

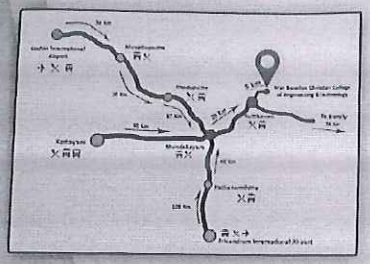
Dhaniesh J Danam
Staff Co-ordinator

Dr. Pradeep C
Principal

NATIONAL CONFERENCE DETAILS (SAMPLE - MECHANICAL ENGINEERING DEPARTMENT)

HOW TO REACH

The MBCCET campus is situated in a hillstation in Idukki District ,Kerala. It is about 3500 ft above sea level and surrounded by lush green tea plantations.The campus is located at a distance of 76 km from kottayam railway station and 132 km from cochin international airport



WHO SHOULD PARTICIPATE

Faculties from academic institutions, research scholars, PG /UG scholars, researchers working in research laboratories, technocrats from industries will be benefitted.

PARTICIPATION BENEFITS

Apart from learning about the different aspects of mechanical engineering, this conference will provide a common platform for knowledge sharing, networking, collaborations and opportunity to interact with the eminent academicians, technocrats, scientists and engineers to their area of expertise and expand your horizon in the recent developments pertaining to mechanical sciences

FOR REGISTRATION

Website : www.mbcpeermade.com

PAYMENT DETAILS

Online Transaction / Demand Draft in favor of "MBC College of Engineering and Technology", payable at SBI Peermade, Acc No: 67044847222, Branch: SBI Peermade, IFSC Code: SBIN0070109

REGISTRATION FEE

UG Student	Rs.1500
PG/Research Scholar	Rs.2500
Faculty	Rs.3000
Industrialist	Rs.3500

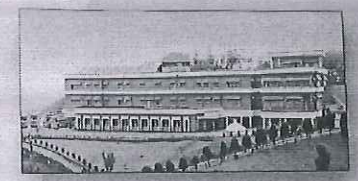
For More Details Please Contact

Prof. Biju Chacko - 9567620923
Prof. Stephen George - 7558908683

NATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING 2019

10TH MAY 2019

(NCAME-2019)



ORGANISED BY:

Department of Mechanical Engineering

Mar Baselios Christian College of Engineering and Technology

Kuttikkanam, Peermade

ABOUT MBCCET

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING & TECHNOLOGY
KUTTIKKANAM, PEERMADE, IDUKKI DIST. KERALA-685 531

Mar Baselios Christian College of Engineering & Technology, Kuttikanam, Peermade, is a self-financing institution for professional Education, affiliated to A P J Abdul Kalam Technological University and approved by All India Council for Technical Education (AICTE), New Delhi. The College is owned and managed by the Malankara Orthodox Syrian Church, which plays a paternal role in the institutions establishment and operations. The institution focuses on offering baccalaureate degree programs in various Engineering streams.

In 2001, the College started functioning as a new generation Engineering College. Since its inception in the year 2001, the College has been on a steady path of growth and up-gradation. Our aim is to provide our students with the best possible facilities and the right training. We emphasize on teaching excellence and wholesome learning experience and strive towards making MBC a premier educational institution. With the various batches of students already passed out with flying colors, the College is well on to fulfil its long term objective of being a centre of excellence as far as quality education and student life is concerned.

NCAME 2019

The NCAME 2019 invites high quality research papers in the areas of Mechanical Engineering. The primary goal of the conference is to change the ideas in the existing areas, encourage academic and industry interaction to promote collaborative research activities involving scientists, engineers, professionals, researchers and students.High quality research papers are invited on the following areas, but not limited to :

- CAD/CAM
- Additive Manufacturing
- Materials & Composites
- CFD
- Modeling & Simulation
- Thermofluids & Energy
- Automotive Engineering

Peer reviewing will be done by eminent experts in respective research areas. At least one author should register for each accepted paper and it has to be presented in the conference. Only presented papers in the conference will be published in the Scopus indexed journal (FME Transactions) / UGC Approved journal (International Journal of Applied Engineering Research)

Instructions regarding submission of manuscript will be updated shortly over the institute website. Papers can be submitted via email at ncame19@mbcpeermade.com

IMPORTANT DATES:

• Abstract Submission:	2nd April 2019
• Full Paper Submission:	8th April 2019
• Acceptance notification:	17th April 2019
• Camera Ready Paper:	26th April 2019
• Last date of registration:	2nd May 2019
• Conference date:	10th May2019

CHIEF PATRON

His Holiness Baselios Marthoma Paulose II, President

PATRONS

Er. Roy V Vairmaon, (Director),

V. Rev. Fr. John Chirathilattu Cor Episcopa, (Board Member)

Mr. Sajan George (Board Member)

Dr. Pradeep C, Principal

Mr. K A Abraham, Bursar

ADVISORY COMMITTEE

Dr. S Anil Lal, CET Trivandrum

Dr. Rajkumar M. R, CET Trivandrum

Dr. K. Karuppasamy, Anna University Regional Campus

Dr. Deepu J. Babu, EPFL Valais Wallis Switzerland

Dr. Rajesh Baby, HoD ME, SJCET Pala

Mr. M Vivegananth, Senior Engineer Mahindra and Mahindra Limited, Chennai

CONVENOR

Dr. Roja Abraham Raju

ORGANIZING SECRETARIES

Prof. Biju Chacko

Prof. Stephen George

All correspondence should be addressed to
Dr. Roja Abraham Raju
(Head Of The Department)
Department of Mechanical Engineering
MBCCET peermade
Idukki,Kerala-685531
+919447349195
http://mbcpeermade.com
rojaabrahamraju@mbcpeermade.com

NCAME'19 MBCCET

The First National Conference on Advances in Mechanical Engineering (NCAME 2019) was successfully hosted by the Department of Mechanical Engineering of MBCCET on 10th of May 2019 in our college. The aim of the Conference was to provide a platform for Researchers, Engineers, Academicians and Industry Professionals to explore the research ideas and innovations to the society and also to identify future research needs in various areas of Mechanical Engineering. The Conference focused on the new trends and innovations in Mechanical Engineering.

The inauguration ceremony started by 9.00 AM in the morning. The function was presided over by the principal of the college Dr.Pradeep C. Dr.Biju Augustine P, our chief guest inaugurated the function. The keynote address was given by Dr.Rajkumar M.R. The conference was conducted on 3 venues. Each venue had a panel of 2 judges and best paper awards were given in each venue. The event concluded with the vote of thanks by the coordinator by 4.00 PM

All the accepted articles were published in Conference proceedings. Selected papers based on the quality were published in UGC indexed journals. We received about 70 technical papers from all over India, out of which 50 papers were selected by a group of technical reviewers for presentation in the conference. In that 42 registered to take part in the conference. After the second review by the technical committee of various journals, the 26 papers which met their standards were published in the UGC Approved Journal-International Journal of Applied Engineering Research.

Co-ordinator

HoD ME

Head of Department
Mechanical Engineering
MBC College of Engineering & Technology
Peermade, Idukki - 685 531


NCAME-19

NCAME-2019

National Conference on Advances in Mechanical Engineering

MY LORD AND MY GOD

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING AND TECHNOLOGY
PEERMADE

This is to certify that Prof./Dr./Smt./Mr./Ms.

Rahul Reji

has presented a Paper on Advanced grinder fixture to sharpen tools, cutters and drills

in the **National Conference on Advances in Mechanical Engineering - 2019** held at Mar Baselios Christian College of Engineering and Technology, Kuttikkanam on 10th May 2019.

Organizing Secretary Convenor Principal

ASSOCIATION OF RADIANT MECHANICAL ENGINEERS

VALUE ADDED COURSES
(SAMPLE CERTIFICATES)

AMBIT AUTOMATION
First Floor, Raja Arcade, Pullepady,
Chitoor Road, Cochin - 682035
Web : www.ambitautomation.in
Email : info@ambitautomation.in
Mob : +91 799 42 55 999

CERTIFICATE
OF PARTICIPATION

This is to certify that

Amal Sabu

Has successfully completed the Workshop held at

Mar Baselios Christian College of Engineering and Technology

on "Heating Ventilation and Air Conditioning (HVAC)

conducted between July 23 to July 27, 2018.

This certificate is issued by

BIBIN KUMAR M
Academic Head

AMBIT AUTOMATION
CHITTOOR ROAD, PIN-682035

PARVATHI ANAND
Director

Serial No. 79515

Register No. 23965

राष्ट्रीय टैकनोलजी एवं ट्रेनिंग परिषद्

National Council for Technology and Training

(An autonomous organization recognized by Govt. of India-New Delhi)

Certificate

The academic council of National Council for Technology and Training certify that

Mr/Ms CYRIL KURIAKOSE KURIAN *has successfully completed the course in* PG Diploma in Manufacturing Design using CATIA *of* 1 Month *duration, on this the* 17th *day of* May 2019 *with grade* A+ *from our affiliate* BIMIT CAD and BIM Training Services *and is thus awarded the certificate issued under our seal on* 10.06.2019

CLASSIFICATION OF GRADES		
PERCENTAGE OF MARKS	GRADE	REMARKS
90% and above	A+	Excellent
[illegible]	A	Very Good
[illegible]	B+	Good
[illegible]	B	Fair

Office of the Central Board of Examinations
National Council for Technology and Training
New Delhi, India

CHAIRMAN
BOARD OF EXAMINATIONS

VERIFY ONLINE

EXTENSION ACTIVITIES

LED ASSEMBLING WORKSHOP

An LED assembling workshop conducted by NSS