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Anand Nagar, Nellikuppam Main Road, S. Kumarapuram, Cuddalore - 607 109, Tamil Nadu.
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LIST OF RESEARCH GRANTS

Academic Year (2021-2022)

Name of the Research Project/ Endowment	Name of the Principal Investigator/ Co-investigator	Department of Principal Investigator	Amount Sanctioned INR in Lakhs	Duration of the Project	Name of the Funding Agency	Type (Government/non-Government)
FABRICATION AND INVESTIGATION OF HEAT PIPE SOLAR COLLECTOR USING ALUMINIUM OXIDE NANO MATERIAL AS WORKING FLUID	Er. G. SENTHILVEL	MECHANICAL ENGINEERING	0.075	6 Months	TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY	GOVERNMENT
MEDI-CARE ROBOT FOR SERVING PATIENTS USING ATMEGA2560 MICROCONTROLLER	Er. C. REIKHA	COMPUTER SCIENCE AND ENGINEERING	0.075	6 Months	TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY	GOVERNMENT
AN EARLY DETECTION SYSTEM OF MILK ADULTERATION USING ARTIFICAL INTELLIGENCE	Er. R. RAJENDRAN	ELECTRONICS AND COMMUNICATION ENGINEERING	0.075	6 Months	TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY	GOVERNMENT
PHOTONIC CRYSTAL WAVE GUIDE BASED OPTICAL ENCODER	Er.V.SUDHA	ELECTRONICS AND COMMUNICATION ENGINEERING	0.050	6 Months	ARUNAI CHARITABLE TRUST	NON-GOVERNMENT
MEDI CARE ROBOT FOR SERVING PATIENTS USING ATMEGA 2560 MICRO CONTROLLER	Er. S. RAMESH	COMPUTER SCIENCE AND ENGINEERING	0.050	6 Months	ARUNAI CHARITABLE TRUST	NON-GOVERNMENT
A NOVEL DESIGN AND FABRICATION OF ROAD SWEEPER BY USING PHOTOVOLTAIC SYSTEM	Er. J. JAYAKUMAR	ELECTRICAL AND ELECTRONICS ENGINEERING	0.050	6 Months	ARUNAI CHARITABLE TRUST	NON-GOVERNMENT
DEVELOPMENT ON HIGHWAY POWER GENERATION BY USING COMBINED VERTICAL AXIS WIND TURBINE	Er. K. KUMARAGURUBARAN	MECHANICAL ENGINEERING	0.050	6 Months	ARUNAI CHARITABLE TRUST	NON-GOVERNMENT
EXPERIMENTAL STUDY ON CONCRETE BY USING POLYPROPYLENE FIBRE REINFORCED POLYMER	Er. N. VIMALRAJ	CIVIL ENGINEERING	0.075	6 Months	MAJESTIC BUILDERS	NON-GOVERNMENT
EXPERIMENTAL STUDY ON CONCRETE BY USING GLASS FIBRE REINFORCED POLYMER	Er. R. DHIVYA	CIVIL ENGINEERING	0.075	6 Months	MAJESTIC BUILDERS	NON-GOVERNMENT
		Total Amount	**0.575**			

KRISHNASAMY COLLEGE OF ENGG. & TECH ★ CUDDALORE 607 109.

Dr.G.ELANGO, M.E.,Ph.D.,
PRINCIPAL
RISHNASAMY COLLEGE OF
GINEERING & TECHNOLOGY,
.Kumarapuram, Cuddalore

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TAMIL NADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai – 600 025
Ph : 044-22301428, Telefax : 044-22301552 www.tanscst.nic.in

Dr.R.Srinivasan, M.Sc., Ph.D.,F.I.C.S., M.A.C.S.(USA).,
Member Secretary

r.No.TNSCST/SPS/2021-2022/ 11.03.2022

To
The Principal
Krishnasamy College of Engineering and Tech
S.Kumarapuram, Cuddalore-607109

Sir/Madam,

Sub: TNSCST – Student Project Scheme (2021-2022) – approval intimation-grant release- reg

******

With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and seminar paper in time.

No	Guide Name and Institutional Address	Title of the Project	Students Name	Project Code	Amount
1 (4)	Mr.M.Velmurugan Assistant Professor, Dept. of Mechanical Engineering Krishnasamy College of Engineering and Tech S.Kumarapuram, Cuddalore-607109	Fabrication and investigatoin of heat pipe solar collector using aluminum oxide nano material as working fluid	S.Praveen N.Yuvaraj N.Dineshkumar	EME-0056	7500/-
2 (5)	Er.C.Reikha Associate Professor, Department of Computer Science and Engineering Krishnasamy College of Engineering and Tech Cuddalore-607109.	Medi-care robot for serving patients using ATMEGA2560microcontroller	B.Bhakyalakshmi, B.Pavithra, D.Priyadharshini, T.Sneha	CSE-0401	7500/-
3 (6)	Mr.R.Rajendran Assistant Professor, Department of ECE Krishnasamy College of Engineering and Tech Cuddalore-607109	An Early detection system of milk adulteration using artifical intelligence	S.Aarthy, R.Girija	EEE-1436	7500/-

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest.

Kindly send the utilisation certificate (format enclosed) and seminar paper (Ref.T&C-No.5&6) on completion of the project.

Thanking you,

Yours faithfully,

Member Secretary.

Encl: a) Terms & Conditions (T&C)
b) Format of Utilisation Certificate (UC)
c) Cheque for Rs. 22,500/- No: 207223 dt:11.03.2022

Copy to: The individual guides

Elango

Digitally signed by Elango
DN: c=IN, o=Personal, title=3550, pseudonym=ffdef84faf2e4a8eafafb08e322dfe7b, 2.5.4.20=2a7905a4396f4300f736fdf2e8fc6af0c43725b5b0a690b75e18192835875 37e, postalCode=607302, st=Tamil Nadu, serialNumber=978aa0d864f1622fab512498c042793859e565c25a736e14d921100 54bc0ee5d, cn=Elango
Date: 2024.07.22 17:45:56 +05'30'

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TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI-600 025

STUDENT PROJECT SCHEME 2021-2022

UTILISATION CERTIFICATE

1.	Name of the guide and address	:	**Mr. G. Senthilvel** Assistant Professor, Department of Mechanical Engineering Krishnasamy College of Engineering & Technology Nellikuppam Main Road, S. Kumarapuram Cuddalore-607 109.
2.	Name of the student(s)	:	N. Dinesh kumar S. Praveen N. Yuvaraj
3.	Title of the Project	:	Fabrication and Investigation of heat pipe solar collector using aluminium oxide Nano material as working fluid.
4.	Project code	:	EME-0056

It is certified that a sum of **Rs. 7500/-** sanctioned by the council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide

Signature of the HOD

Signature of the
REGISTRAR/PRINCIPAL/DEAN
With seal

Dr. G. ELANGO, M.E., Ph.D.
PRINCIPAL,
KRISHNASAMY COLLEGE OF
ENGINEERING & TECHNOLOGY,
KUMARAPURAM, CUDDALORE-607

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FABRICATION AND INVESTIGATION OF HEAT PIPE SOLAR COLLECTOR USING ALUMINIUM OXIDE NANO MATERIAL AS WORKING FLUID

N.DINESH KUMAR, N. YUVARAJ, S.PRAVEEN

Department of Mechanical Engineering, Krishnasamy College of Engineering and Technology, Cuddalore, Cuddalore -607109

Abstract

Heat pipe solar collectors (HPSCs) are heat exchangers that carry heat based on the phase change of the heat pipe working fluid. It is aimed to increase the operating temperature range of solar collectors by changing the phase of the working fluid in the heat pipe at low temperature. For this reason, it has become widespread to use Nanofluids obtained by mixing Nano sized metal oxide with base fluid in certain proportions in order to increase both the thermal conductivity of the solar heat pipe working fluids and to increase the specific heat closures. The main purpose of this study, which was conducted to evaluate the performance of HPSCs, is to increase performance, and an experimental study has been conducted in this direction. For this purpose, an HPSC designed and manufactured was used. Al_2O_3- water Nanofluids containing 2% nanoparticles were used in order to increase the performance. The experiments were carried out for pure water and Nanofluids mixed water, and their efficiency and strength were compared. The highest value of instantaneous efficiency was calculated.

Introduction

A heat pipe is a heat-transfer device that employs phase transition to transfer heat between two solid interfaces. The need for energy is increasing day by day in many countries, and the gap between production and consumption tends to open day by day. Among the most important reasons for this situation are as follows: factors such as population growth, technological development, industrialization, and increase in people's life comfort are at the top. Due to such an increase in energy demand and the widening of the difference between production and consumption, the efficient use of existing energy resources has become a very important issue for every country and has made countries take some precautions.

Motivation

Today widespread applicatiou of energy-saving equipment based on heat pipes makes a significant contribution to the task of resources saving. Heat pipes are widely used both to improve the outdated equipment, increase its efficiency, reliability and lifetime and in the creation of new high-quality and economic technology samples. Heat pipe solar collectors used in verity of application like heat exchanger.

Materials and Methods

Preparation of Nanofluids. Nanofluids are not a simple solid-liquid suspension. It should also provide the following features.

(i) Prepared suspension should be stable.
(ii) Clumping in the particles should be negligible,
(iii) The chemical properties of the fluid should not change over time.

The Nano fluids are prepared by two step method. The desired Nano particles are obtained first, and then, the Nano particles are dispersed into the basic fluid in a way that maintains its stability and homogeneity. Ultrasonic water baths is used to ensure homogeneous distribution.

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CERTIFICATE

This is to certify that **Mr. N. Dineshkumar**, Krishnasamy College of Engineering and Technology, Cuddalore-607 109 has successfully completed the project titled "Fabrication and investigatoin of heat pipe solar collector using aluminum oxide nano material as working fluid" in the Sector MECHANICAL ENGINEERING under STUDENT PROJECTS SCHEME sponsored by the Council during the academic year 2021-2022

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

GOVERNMENT OF TAMILNADU

CERTIFICATE

This is to certify that **Mr. N.Yuvaraj**, Krishnasamy College of Engineering and Technology, Cuddalore-607 109 has successfully completed the project titled "Fabrication and investigatoin of heat pipe solar collector using aluminum oxide nano material as working fluid" in the Sector MECHANICAL ENGINEERING under STUDENT PROJECTS SCHEME sponsored by the Council during the academic year 2021-2022

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

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This is to certify that **Mr. S. Praveen**, Krishnasamy College of Engineering and Technology, Cuddalore-607 109 has successfully completed the project titled "**Fabrication and investigatoin of heat pipe solar collector using aluminum oxide nano material as working fluid**" in the Sector MECHANICAL ENGINEERING under **STUDENT PROJECTS SCHEME** sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

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TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE CAMPUS, CHENNAI-600 025

STUDENT PROJECT SCHEME 2021-2022

UTILISATION CERTIFICATE

(TWO COPIES)

1. Name of the guide and address : Er. C. REIKHA, ASSOCIATE PROFESSOR & HOD I/C /CSE, KRISHNASAMY COLLEGE OF ENGINEERING & TECHNOLOGY, CUDDALORE

2. Name of the student(s) : B. BHAKYALAKSHMI
B. PAVITHRA
D. PRIYADHARSHINI
T. SNEHA

3. Title of the project : MEDI-CARE ROBOT FOR SERVING PATIENTS USING ATMEGA 256 MICROCONTROLLER

4. Project code : CSE - 0401

It is certified that a sum of Rs. 7,500 (Rupees SEVEN THOUSAND FIVE HUNDRED RUPEES ONLY) sanctioned by the Council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs. NIL remaining unutilized is refunded.

C. Reikha 24/5/22
Signature of the Guide

C. Reikha 24/5/22
Signature of the HOD

Signature of the
REGISTRAR/PRINCIPAL/DEAN
with seal

KRISHNASAMY COLLEGE OF ENGG. & TECH. CUDDALORE 607 109.

Dr. G. ELANGO, M.E.,Ph.D.
PRINCIPAL,
KRISHNASAMY COLLEGE OF
ENGINEERING & TECHNOLOGY,
S.KUMARAPURAM, CUDDALORE-607109

MEDI-CARE ROBOT FOR SERVING PATIENTS USINGATMEGA 2560 MICROCONTROLLER

Bhakyalakshmi.B, Pavithra.B, Priyadharshini.D, Sneha.T

Department of Computer Science and Engineering
Krishnasamy College of Engineering & Technology, Cuddalore.

Abstract

The COVID-19 creates a pandemic situation all over the world and treating the COVID-19 patients is really a challenging task. Huge number of Medicare officials and workers sacrifices their life during the treatment all over the world. This project work has been proposed to design to pay tribute the Medicare frontline officials and workers. This project employs autonomous intelligent robots can perform desired tasks in any type of environment without the continuous guidance of human. A line follower programmed to follow a specific path. A line following robot carries the medicine to the patient whenever they need it based on the predefined path that can be either visible on a black line on a white surface or vice-versa. An IR sensor remote is used by the nurse or technician, based on which the data is sent to the system or the robot. Based on the request the care taker robot will serve the patients accordingly. In this project ATMEGA 2560 microcontroller is used to deliver the requested provisions by the patients in the hospital. It uses three levels of feedback for path alignment, rotation offset and for avoiding obstacles. Since the path of the wards remains same in the hospitals, so a fixed path is defined and is loaded to the Firebird V through codes.

Introduction

A Robot is or virtual artificial agent a electromechanical machine which is guided by a computer program and electronic circuitry. Robotics is a branch of technology which deals with the design, construction, operation, and application of robots along with these computer systems are used for their control, sensory feedback, and information processing. These robots can take the place of humans in dangerous environments or even in manufacturing processes. Autonomous robots are particularly desirable in fields like hospitals, household maintenance (such as cleaning) and delivering goods and services. For programming the ATMEGA2560 Robot AVR Studio from ATMEL which is feature rich free to IDE (Integrated Development Environment) for the robot is used. In this project AVR studio from the ATMEL in which at the

back-end WIN AVR uses open-source C compiler. In this project, we are using a Zigbee module for communication between the robot and the caretaker. microcontroller is used to deliver the requested provisions by the patients in the hospitals. Since the path to the wards remains same in the hospitals, the predefined path is loaded on to the robot memory so that it can travel on the path with the help of white line sensing method when the button is pressed on the IR sensor

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This is to certify that **Mr/Ms. B. Bhakyalakshmi,** Krishnasamy College of Engineering and Technology, Cuddalore-607 109. has successfully completed the project titled "**Medi-care robot for serving patients using ATMEGA 2560 microcontroller**" in the Sector COMPUTER SCIENCE ENGINEERING under **STUDENT PROJECTS SCHEME** sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

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This is to certify that **Mr/Ms. B. Pavithra,** Krishnasamy College of Engineering and Technology, Cuddalore-607 109. has successfully completed the project titled "**Medi-care robot for serving patients using ATMEGA 2560 microcontroller**" in the Sector COMPUTER SCIENCE ENGINEERING under **STUDENT PROJECTS SCHEME** sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

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This is to certify that **Mr/Ms. D. Priyadharshini,** Krishnasamy College of Engineering and Technology, Cuddalore-607 109. has successfully completed the project titled "Medi-care robot for serving patients using ATMEGA 2560 microcontroller" in the Sector COMPUTER SCIENCE ENGINEERING under **STUDENT PROJECTS SCHEME** sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

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This is to certify that **Mr/Ms. T. Sneha,** Krishnasamy College of Engineering and Technology, Cuddalore-607 109. has successfully completed the project titled "Medi-care robot for serving patients using ATMEGA 2560 microcontroller" in the Sector COMPUTER SCIENCE ENGINEERING under **STUDENT PROJECTS SCHEME** sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

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Cuddalore-607 109.

DR.R.SRINIVASAN
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STUDENT PROJECT SCHEME 2021-2022
UTILISATION CERTIFICATE

1. Name of the guide and address : Mr.R.Rajendran,
Assistant Professor/ECE,
Krishnasamy College of Engineering & Technology, S.Kumarapuram,
Cuddalore - 607 109.

2. Name of the student(s) : 1.Aarthy.S
2.Ginja.R

3. Title of the project : An Early Detection System of Milk Adulteration Using Artificial Intelligence.

4. Project code : EEE-1436

It is certified that a sum of Rs.7500 (Rupees Seven Thousand Five Hundred Only) Sanctioned by the council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs...Nil... remaining unutilized is refunded.

Signature of the guide

Signature of the HOD

Signature of the
REGISTRAR/PRINCIPAL/DEAN
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AN EARLY DETECTION SYSTEM OF MILK ADULTRATION USING ARTIFICIAL INTELLIGENCE

S.Aarthy and R.Girija
Department of ECE, Krishnasamy College of Engineering and Technology,
Cuddalore – 607109.

Abstract

Many places have seen an increase in the number of milk centers because of the current generation's need for milk. Drinkable high-quality milk is thick and devoid of contaminants. Milk is often adulterated to keep the industry alive and increase production. Recently, milk manipulation has become more of a social issue. If contaminated milk is taken by the people, it might cause major health issues. The detection and prevention of dairy adulteration must be precise and consistent. A spectral sensor is used to check for tainted milk and stored to Thingspeak cloud for data analytics. It is also important to keep the IoT platform up to speed with the most recent information gathered by the sample. By implementing this proposed method, the depositing of milk should be more apparent to everyone. In this setup, a microcontroller called an Arduino is employed. This Arduino is the brains of the milk analyzer system. The proposed system shows detecting effectiveness is high and feasible when compared to the conventional methods.

Introduction

Residents' well-being is greatly influenced by the safety of their food supply in both rural and urban locations. To ensure quality control and to make a reasonable and advantageous choice, it is necessary to build instruments that are continually and precisely detectable. This investigation focused on aspects of milk quality and quantity estimation. Real-time information on gas groups in crude milk is provided via an Internet of Things (IoT)-based system. Because of the long-term storage, the bacteria population in milk increases, resulting in an unpleasant odor and taste, as well as the presence of dangerous compounds. The detection and identification of milk spoilage and the production of a safe product both require a milk monitoring system.

Motivation

Humans consume milk and milk products as their main sources of nutrition. In general, dairy products are high in carbohydrates, sugar, protein, vitamins, enzymes, and minerals. Food fraud is a serious public health hazard because of its economic motivation. It is worse in poor and impoverished countries because of the lack of sufficient supervision and enforcement of the criminal justice system there. Chemical reactions can be used to detect adulterants in milk in a simple and straightforward manner, although quantitative detection is more complicated and varied. Second only to olive oil, milk powder is the most likely food item to be tainted by adulteration. Some of the most common adulterants in milk are the addition of whey and water, as well as the inclusion of vegetable protein and milk from different species.

Materials and Methods

The Arduino-based milk quality and quantity estimation is proposed in this paper. The Arduino based milk adulteration is estimated to monitoring milk color temperature, R, G, and B

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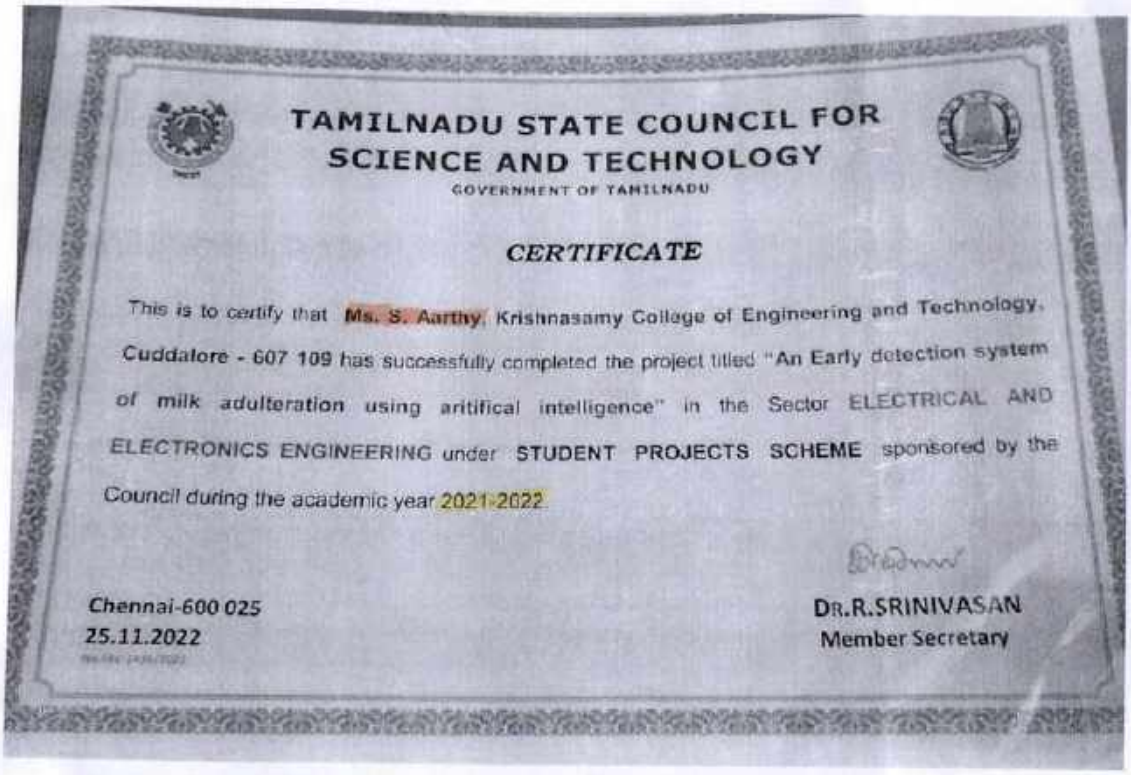

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GOVERNMENT OF TAMILNADU

CERTIFICATE

This is to certify that Ms. S. Aarthy, Krishnasamy College of Engineering and Technology, Cuddalore - 607 109 has successfully completed the project titled "An Early detection system of milk adulteration using aritifical intelligence" in the Sector ELECTRICAL AND ELECTRONICS ENGINEERING under STUDENT PROJECTS SCHEME sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

DR.R.SRINIVASAN
Member Secretary

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
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CERTIFICATE

This is to certify that Ms. R. Girija, Krishnasamy College of Engineering and Technology, Cuddalore - 607 109 has successfully completed the project titled "An Early detection system of milk adulteration using aritifical intelligence" in the Sector under STUDENT PROJECTS SCHEME sponsored by the Council during the academic year 2021-2022.

Chennai-600 025
25.11.2022

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DR.R.SRINIVASAN
Member Secretary

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Anand Nagar, S. Kumarapuram, Cuddalore – 607 109.

Research and Development Centre

Recommended Project list for Financial Grand in the Academic year – 2021-22

Guide Name and Institution Address	Title of the Project	Students Name	Department of the Students
Mrs.V.Sudha, AP Krishnasamy College of Engineering and Technology, Cuddalore.	Photonic crystal wave guide based optical encoder	Abinaya.N Abinaya.V	Electrical and Communication Engineering
Mr.S.Ramesh, AP Krishnasamy College of Engineering and Technology, Cuddalore.	Medi care robot for serving patients using ATMEGA 2560 MICRO CONTROLLER	Anitha.A Archana.D Deepika.P	Computer Science and Engineering
Mr.J.Jayakumar, AP Krishnasamy College of Engineering and Technology, Cuddalore.	A novel design and fabrication of road sweeper by using photovoltaic system	Prasanna.S Amaresh.R Mohammed Suhaib.A	Electrical and Electronics Engineering
Mr.K.Kumaragurubaran, AP Krishnasamy College of Engineering and Technology, Cuddalore.	Development on highway power generation by using combined vertical axis wind turbine	Manimaran.J Raghul.N Rajkumar.R	Mechanical Engineering

Submitted to the Principal

13/9/22

R&D In charge

S. RAMESH
AP-CSE

12/9/22

Vice – Principal

Principal

13.04.2022

To
The Chairman,
Arunai Charitable Trust,
157/16, Siva Flats,
20th Main Road, Anna Nagar,
Chennai – 600 040.

Respected Sir,

Sub: Submission of Application for Financial grand for the students' projects – 2021-22-Krishnasamy College of Engineering & Technology, Cuddalore – Reg.

Ref: Your Telephonic information for project recommendation through our Chairman, dated 01.04.2022

Greetings. Hope this letter finds you in good health. First, we submit our gratitude for your financial grant support to our students for the pervious years which motivates our students and staff much.

With reference to your telephonic information regarding the project grant for this academic year, I am herewith submitting the list of projects of our students which are recommended by our Research and Development Centre for financial grant after obtaining the approval from our Chairman, Dr. K. Rajendran. The particulars of the project, students name and Project supervisor name for the academic year 2021 -22 is enclosed herewith for your kind perusal.

I request, the recommended projects may kindly be considered and financial grant be sanctioned from your end.

Thanking you,

Yours truly,

PRINCIPAL

Encl : Recommended Project List.

13/4/22

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Chennai

26.04.2022

The Chairman,
Krishnasamy college of Engineering & Technology,
Nelikuppam Main Road,S Kumarapuram,
Cuddalore – 607 109

Sub : - Financial Grant to Recommended student – Reg.
Ref: - Recommendation letter dated 13.04.2022

With reference to the recommendation for financial Grant of the student projects from you on 13.04.2022, We are enclosing the KVQ cheque No.000603 dated 26.04.2022 for Rs.20,000/–towards financial Grant assistance to the recommended four Projects @ Rs.5000/–each. Kindly acknowledge the receipt by signing the enclosed voucher and return back to us.

Thanking you.

Your Frienly,
For Arunai Charitable Trust

K.Chandrasekaran
(Treasurer)

KCET - CUDDALORE-607109
Incoming Tapal No: 1697

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CHAIRMAN	ED	PRINCIPAL	VP	AO

To AO / manager

27/5/22

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(Estd 1994)

#157/16,Siva Flatss,20th MainRoad,AnnanagarWest,Chennai -600 040

Research/Project Grant 2021-2022

UTILISATION CERTIFICATE

1 Name of the guide & Address : Mrs. V. SUDHA
Assistant Professor
Department of Electronics and Communication Engineering

2 Name of the student(s) : N. Abinaya
H. Abinaya

3 Title of the project : Photonic crystal wave guide based optical encoder

4 Department/Institution Name & Address : Electronics & Communication Engineering/ Krishnasamy college of Engineering and Technology, S. Kumarapuram, cuddalore - 607109

It is certified that a sum of Rs 5000 (five Thousand only). sanctioned by the Trust for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide | Signature of the HOD | Signature of the Principal

PHOTONIC CRYSTAL WAVEGUIDE BASED OPTICAL ENCODER

A PROJECT REPORT

Submitted by

N.ABINAYA (421317106001)

V.ABINAYA (421317106002)

In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

KRISHNASAMY COLLEGE OF ENGINEERING & TECHNOLOGY

CUDDALORE-607109

ANNA UNIVERSITY :: CHENNAI – 600 025

MARCH-2021

ABSTRACT

In recent years, the micro photonic device is extraordinarily attractive for the optical digital signal processor as it is perfectly satisfied everlasting demands namely low power consumption; very low loss, long-term stability and fast response. Generally, the complex network in photonics is designed with more number of nodes; each of them needed a very high speed of operation with ultra-compact size for optical integrated circuits. In general, Photonic Crystals (PC), Micro Electro-Optical-Mechanical Systems (MEOMS), Planar Light wave Circuits (PLC) and Plasmonics platform are highly suitable for photonic integrated circuits. Among them, the PC based medium is a good candidate due to their attractive features such as flexible design, more temperature resilient, better lifetime, very low group velocity and low radiation loss.

In this present work, ultra-high speed nano-optical encoder is proposed and designed using a two-dimensional photonic crystal platform. The proposed logic device contains dual nanocavity coupled ring resonator, five waveguides and reflector in a square lattice with barium titanate rods arranged in the air-substrate. The proposed nano-encoding platform is working based on the resonance and interference effect. The photonic band diagram and performance characteristics of the encoder namely bit rate, delay time, switching speed and optical signal distribution are analyzed using Finite Difference Time Domain (FDTD) method. The simulation results show that the designed encoder is capable of working four logic states accurately. Furthermore, the presented device has numerous advantages such as very low power consumption, high data rate and a good contrast ratio. Hence, it is tremendously suitable for optical logic systems and photonics integrated circuits

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Phone: (04142) 285 601 - 604, 94886 03394. Website: www.kcet.in

Certificate

This is to certify that ~~Mr.~~ / Ms. N. ABINAYA. (ECE - IV YEAR). of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled Photonic crystal wave guide based optical encoder.

under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021- 2022

Principal

Dr. K. Rajendran
Chairman

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Phone: (04142) 285 601 - 604, 94886 03394. Website: www.kcet.in

Certificate

This is to certify that ~~Mr~~. / Ms. V. ABINAYA (ECE - IV YEAR), of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled Photonic Crystal Wave Guide based optical encoder.

under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021- 2022

Principal

Dr. K. Rajendran
Chairman

ARUNAI CHARITABLE TRUST

(Estd 1994)

#157/16,Siva Flatss,20th MainRoad,AnnanagarWest,Chennai -600 040

Research/Project Grant 2021-2022

UTILISATION CERTIFICATE

1 Name of the guide & Address : S. RAMESH
Assistant Professor
Department of computer science & Engineering

2 Name of the student(s) : A. Anitha
D. Archana
P. Deepika

3 Title of the project : Medi care Robot for serving Patients using ATMEGA 2560 MICRO CONTROLLER
Computer Science & Engineering /

4 Department/Institution Name & Address : Krishnasamy College of Engineering and Technology, S. Kumarapuram, cuddalore - 607109

It is certified that a sum of Rs 5000 (Five Thousand only). sanctioned by the Trust for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide

C. Rajeha
Signature of the HOD

Signature of the Principal

MEDEICARE ROBOT FOR SERVING PATIENTS USING ATMEGA 2560 MICRO CONTROLLER

A PROJECT REPORT

Submitted by

A.Anith

D.Archana

P.Deepika

In partial fulfillment for the award of the

degree Of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

KRISHNASAMY COLLEGE OF ENGINEERING &

TECHNOLOGY CUDDALORE- 607109

ANNA UNIVERSITY:: CHENNAI – 600025

SEPTEMBER-2021

MEDI-CARE ROBOT FOR SERVING PATIENTS USING ATEMGA 2560 MICROCONTROLLER

ABSTRACT

The COVID-19 creates a pandemic situation all over the world and treating the COVID-19 patients is really a challenging task. Huge number of Medicare officials and workers sacrifices their life during the treatment all over the world. This project work has been proposed to design to pay tribute the Medicare frontline officials and workers. This project employs autonomous intelligent robots can perform desired tasks in any type of environment without the continuous guidance of human. A line follower programmed to follow a specific path. A line following robot carries the medicine to the patient whenever they need it based on the predefined path that can be either visible on a black line on a white surface or vice-versa. An IR sensor remote is used by the nurse or technician, based on which the data is sent to the system or the robot. Based on the request the care taker robot will serve the patients accordingly. In this project ATMEGA 2560 microcontroller is used to deliver the requested provisions by the patients in the hospital. It uses three levels of feedback for path alignment, rotation offset and for avoiding obstacles. Since the path of the wards remains same in the hospitals, so a fixed path is defined and is loaded to the Firebird V through codes.

Keywords: COVID-19 patients, Medicare treatment, Automatic Intelligent Robots, Embedded System, ATMEGA-2560.

INTRODUCTION

A Robot is or virtual artificial agent a electromechanical machine which is guided by a computer program and electronic circuitry. Robotics is a branch of technology which deals with the design, construction, operation, and application of robots along with these computer systems are used for their control, sensory feedback, and information processing. These robots can take the place of humans in dangerous environments or even in manufacturing processes. Autonomous robots are particularly desirable in fields like hospitals, household maintenance (such as cleaning) and delivering goods and services. For programming the ATMEGA2560 Robot AVR Studio from ATMEL which is feature rich free to IDE (Integrated Development Environment) for the robot is used. In this project AVR studio from the ATMEL in which at the back-end WIN AVR uses open-source C compiler. In this project, we are using a Zigbee module for communication between the robot and the caretaker. microcontroller is used to deliver the requested provisions by the patients in the hospitals. Since the path to the wards remains same in the hospitals, the predefined path is loaded on to the robot memory so that it can travel on the path with the help of white line sensing method when the button is pressed on the IR sensor remote. The path to the room is fed onto the

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Certificate

This is to certify that ~~Mr~~. / Ms. P. DEEPIKA [CSE - IV YEAR]. of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled Medi Care Robot for Saving Patients Using ATMEGA 2560 MICRO CONTROLLER.

under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021-2022.

Principal

Dr. K. Rajendran
Chairman

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Certificate

This is to certify that ~~Mr~~. / Ms. D. ARCHANA. [CSE - IV YEAR]. of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled Medi Care Robot for Serving Patients Using ATMEGA 2560 MICRO CONTROLLER.

under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021-2022

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Dr. K. Rajendran
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Certificate

This is to certify that ~~Mr~~. / Ms. A. ANITHA. [CSE- IV. YEAR) of **Krishnasamy College of Engineering and Technology, Cuddalore** has successfully completed the project titled Medi care robot for Serving Patients Using ATMEGA 2560 MICRO CONTROLLER. under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021-2022

Principal

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Chairman

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#157/16,Siva Flatss,20th MainRoad,AnnanagarWest,Chennai -600 040

Research/Project Grant 2021-2022

UTILISATION CERTIFICATE

1 Name of the guide & Address : Mr. J. JAYAKUMAR
Assistant- Professor
Department of Electrical and Electronics Engineering

2 Name of the student(s) : Prashanna.S
Amoolesh. R
Mohammed Suhaib. A

3 Title of the project : A Novel Design and fabrication of road sweeper by using photovoltaic system.

4 Department/Institution Name & Address : Electrical and Electronics Engineering | Knithraamy College of Engineering and Technology, S. Kunnarapuram, Cuddalore - 607109.

It is certified that a sum of Rs 5000 (Five Thousand only) sanctioned by the Trust for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide

Signature of the HOD

Signature of the Principal

A NOVEL DESIGN AND FABRICATION OF ROAD SWEEPER BY USING PHOTOVOLTAIC SYSTEM

A PROJECT REPORT

Submitted by

S. PRASANNA	421317105019
R. AMARESH	421317105301
A. MOHAMED SUHAIB	421317105303

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

ELECTRICAL AND ELECTRONICS ENGINEERING

KRISHNASAMY COLLEGE OF ENGINEERING AND TECHNOLOGY,

CUDDALORE – 607 109

ANNA UNIVERSITY:: CHENNAI 600 025

APRIL 2021

ABSTRACT

In our country, Governments are taking some actions towards the avoidance of accidents by placing dividers on the major roads of the city. But there is a usage of heavy trucks and loaded vehicles are polluting the roads by dust which is not a major concern but one of the issues that the bikers are skidded by the dust-sand enclosed along the dividers. Multinational companies are concentrating on this with high cost of Sweepers with Diesel Engines but this proposed scheme would help to solve in the case of low cost of manufacturing and effective way of renewable energy resource. This Photovoltaic based sweeper come with solar powered vacuum cleaner with spiral sweepers, automated divider tracker and a loader bag thus this total system is operated only using the renewable energy resource. This would make the platform that all the corners of the roads are clean with less traffic accidents and economical to the municipalities to change over with this efficient system.

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Certificate

This is to certify that Mr. / ~~Ms~~. S. PRASANNA. (EEE- IV YEAR), of **Krishnasamy College of Engineering and Technology, Cuddalore** has successfully completed the project titled A novel design and fabrication of Road Sweeper by Using Photovoltaic System. under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021-2022

Principal

Dr. K. Rajendran
Chairman

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Certificate

This is to certify that Mr. / ~~Ms~~. R. AMARESH. (EEE. IV-YEAR), of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled A Novel Design and fabrication of Road Sweeper by Using Photovoltaic System.

under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021-2022

Principal

Dr. K. Rajendran
Chairman

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Phone: (04142) 285 601 - 604, 94886 03394. Website: www.kcet.in

Certificate

This is to certify that Mr. / ~~Ms~~. A. MOHAMMED SUHAIB. (EEE. IV YEAR), of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled A Novel Design and fabrication of Road Sweeper by Using Photovoltaic System.

under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021- 2022

Principal

Dr. K. Rajendran
Chairman

ARUNAI CHARITABLE TRUST

(Estd 1994)

#157/16,Siva Flatss,20th MainRoad,AnnanagarWest,Chennai -600 040

Research/Project Grant 2021-2022

UTILISATION CERTIFICATE

1 Name of the guide & Address : Er. K. kumaragurubaran
Assistant - professor
Department of mechanical Engineering

2 Name of the student(s) : mani maran.J
Ragul.N
Raj kumar.K

3 Title of the project : Development on highway power generation by using combined vertical Axis wind turbine

4 Department/Institution Name & Address : Mechanical Engineering
Krishnasamy college of Engineering and technology S.kumarapuram cuddalore 607109

It is certified that a sum of Rs 5000 (Five thousand only) sanctioned by the Trust for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide

Signature of the HOD

Signature of the Principal

DEVELOPMENT ON HIGHWAY POWER GENERATIOIN BY USING COMBINED VERTICAL AXIS WIND TURBINE

PROJECT REPORT

Submitted by

MANIMARAN.J (421318114010)

RAGUL.N (421318114302)

RAJKUMAR.R (421318114303)

In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

In

MECHANICAL ENGINEERING

KRISHNASAMY COLLEGE OF ENGINEERING AND TECHNOLOGY

CUDDALORE - 607 109

ANNA UNIVERSITY : CHENNAI - 600 025

JUNE 2022

ABSTRACT

This project combines the advantage of the two popular design of vertical axis wind turbine (Savonius and Darrieus). By using modified simple J-Shaped profile is designed for eliminating a fraction of pressure side of the airfoil. Hence, it also overcomes the drawbacks of the presently available turbine design. The fabrication of the turbine was done using basic materials and simple tools. The characteristics of the turbine like tip speed ratio, coefficient of power generation were calculated using mathematical equations. Moreover, by employing this vertical axis wind turbine to improve the self-starting of the turbine and power generation on highway applications.This project focuses on use of air on highway 'divider with the help of combined vertical axis wind turbine. When the vehicle passed on the highway it produces a considerable amount of air due to its speed. This air strikes on the blade of the vertical axis wind turbine and its makes a rotation of the turbine.

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Certificate

This is to certify that Mr. / ~~Ms.~~ J. MANI MARAN. [MECH - IV. YEAR] of **Krishnasamy College of Engineering and Technology, Cuddalore** has successfully completed the project titled Development on Highway Power Generation by Using Combined Vertical axis Wind Turbine under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021-2022

Principal

Dr. K. Rajendran
Chairman

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Certificate

This is to certify that Mr. / ~~Ms~~. N. RAGUL. [MECH. IV. YEAR]. of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled Development on Highway Power Generation By using Combined Vertical axis Wind Turbine under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021- 2022

Principal

Dr. K. Rajendran
Chairman

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Certificate

This is to certify that Mr. / ~~Ms~~. R. RAJKUMAR [MECH - IV - YEAR] of **Krishnasamy College of Engineering and Technology, Cuddalore** has successfully completed the project titled Development on Highway Power Generation by Using Combined Vertical axis Wind Turbine under Research / Project grant sponsored by the Arunai Charitable Trust during the academic year 2021 2022

Principal

Dr. K. Rajendran
Chairman

MAJESTIC BUILDERS
5/12, Rajiv Gandhi Nagar,Koothapakkam, Cuddalore-2.
Email: cuddaloremajesticbuilders@gmail.com

Date :03.03.2022

From
MAJESTIC BUILDERS,
5/12, Rajiv Gandhi Nagar,
Koothapakkam,
Cuddalore-2.

To
The Principal,
Krishnasamy College of Engineering and Technology,
S.Kumarapuram, Cuddalore-607109.

Respected Sir,

Sub. : Project Funding – Reg

Ref. : Lr. No. KCET / 2021-22/ Trust/123

We are pleased to inform you that we approve your proposal based on the letter cited above as it is a very nice thought and we feel it definitely need to be encouraged. We would grant you a sum of amount INR.- 15000/-. We will support you throughout the execution of the idea.

The detailed report shall be forwarded to us and subsequent review discussions held by involving Engineers from Builders Association. It has been decided to sanction the funding as follows.

Academic Year 2021-2022

Guide Name and Institution Address	Title of the Project	Students Name	Department of the Students	Amount (Rs)
Mr.N.Vimalraj Assistant professor Krishnasamy College of Engineering and Technology, Kumarapuram, Cuddalore-607109.	Experimental study on concrete by using polypropylene fibre reinforced polymer	Gireevalamoorthy.D	Civil Engineering	7500/-
Ms.R.Dhivya Assistant professor Krishnasamy College of Engineering and Technology, Kumarapuram, Cuddalore-607109.	Experimental study on concrete by using glass fibre reinforced polymer	Raghuram.N	Civil Engineering	7500/-

With Regards

KRISHNASAMY
COLLEGE OF ENGINEERING & TECHNOLOGY
(Approved by AICTE, New Delhi & Affiliated to Anna University)
Anand Nagar, Nellikuppam Main Road, S.Kumarapuram, Cuddalore - 607 109.
☎ (04142) 285 601 - 604 | info@kcet.in | www.kcet.in

Prof. Dr. G. ELANGO, M.E., Ph.D.,
Principal

Lr. No. KCET/2021-22/Trust/123 **Date :23.02.2022**

From
The Principal,
Krishnasamy College of Engineering and Technology,
S.Kumarapuram, Cuddalore-607109.

To
MAJESTIC BUILDERS,
5/12, Rajiv Gandhi Nagar,
Koothapakkam,
Cuddalore-2.

Respected Sir,

Sub. : Project Funding – Reg.

Ref. : MoU dated 21.04.2021

The research project has been identified under the MoU of your esteemed organisation based on the recommendations of the Head of the Department and the Principal for the following batches. Thank you for your support and funding.

Academic Year 2021-2022				
Guide Name and Institution Address	**Title of the Project**	**Students Name**	**Department of the Students**	**Amount (Rs)**
Mr.N.Vimalraj Assistant professor Krishnasamy College of Engineering and Technology, Kumarapuram, Cuddalore-607109.	Experimental study on concrete by using polypropylene fibre reinforced polymer	Gireevalamoorthy.D	Civil Engineering	7500/-
Ms.R.Dhivya Assistant professor Krishnasamy College of Engineering and Technology, Kumarapuram, Cuddalore-607109.	Experimental study on concrete by using glass fibre reinforced polymer	Raghuram.N	Civil Engineering	7500/-

KRISHNASAMY COLLEGE OF ENGG & TECH ★ CUDDALORE 607 109.

Yours Sincerely,

PRINCIPAL

PRINCIPAL
Krishnasamy College of Engineering & Technology, Kumarapuram, Cuddalore-607 109

MAJESTIC BUILDERS
5/12, Rajiv Gandhi Nagar, Koothapakkam, Cuddalore-2.
Email: cuddaloremajesticbuilders@gmail.com

Research/Project Grant 2021-2022

UTILISATION CERTIFICATE

1 Name of the guide & Address : Mr. N. VIMALRAJ
Assistant professor
Department of civil Engineering

2 Name of the student(s) : Sivasalamoorthy

3 Title of the project : Experimental Study on concrete by using polypropylene fibre reinforced polymer

4 Department/Institution Name & Address : Civil Engineering /
Krishnasamy college of Engineering & Technology . S. Kumarapuram
Cuddalore – 607109

It is certified that a sum of Rs 7500 [Seventy thousand five hundred] sanctioned by the Trust for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide | Signature of the HOD | Signature of the Principal

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Phone: (04142) 285 601 - 604, 94886 03394. Website: **www.kcet.in**

Certificate

This is to certify that Mr. / Ms. D. Girivalamoorthy (CE - IV year) of

Krishnasamy College of Engineering and Technology, Cuddalore has successfully completed the project titled Experimental study on concrete by using Polypropylene fibre Reinforced Polymer

under Research / Project grant sponsored by the Majestic Builders during the academic year 2021 - 2022

Principal

Dr. K. Rajendran
Chairman

MAJESTIC BUILDERS
5/12, Rajiv Gandhi Nagar,Koothapakkam, Cuddalore-2.
Email: cuddaloremajesticbuilders@gmail.com

Research/Project Grant 2021-2022

UTILISATION CERTIFICATE

1 Name of the guide & Address : Mr. R. DHIVYA
Assistant professor
Department of Civil Engineering

2 Name of the student(s) : Raghuram. N.

3 Title of the project : Experimental Study on Concrete by using Glass fibre reinforced polymer.

4 Department/Institution Name & Address : CIVIL ENGINEERING / Krishnasamy College of Engineering and Technology, B.Kamarapuram, cuddalore-607109.

It is certified that a sum of Rs Rs 7000 (Seven thousand five hundred only) sanctioned by the Trust for carrying out above mentioned project has been utilized for the purpose for which it was sanctioned.

Signature of the Guide

Signature of the HOD

Signature of the Principal

KRISHNASAMY
COLLEGE OF
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Phone: (04142) 285 601 - 604, 94886 03394. Website: **www.kcet.in**

Certificate

This is to certify that Mr. / Ms. N. Raghuram (CE - IV year) of **Krishnasamy College of Engineering and Technology, Cuddalore** has successfully completed the project titled Experimental Study on Concrete by Using Glass fibre Reinforced Polymer under Research / Project grant sponsored by the Majestic Builders during the academic year 2021 - 2022

Principal

Elango

Digitally signed by Elango
DN: c=IN, o=Personal, title=3550, pseudonym=ffdef84faf2e4a8eafafb08e322dfe7b, 2.5.4.20=2a7905a4396f4300f736fdf2e8fc6af0c43725b5b0a690b75e1819283587537e, postalCode=607302, st=Tamil Nadu, serialNumber=978aa0d864f1622fab512498c042793859e565c25a736e14d92110054bc0ee5d, cn=Elango
Date: 2024.07.22 17:46:24 +05'30'

Dr. K. Rajendran
Chairman