3.1.1 Grants received from Government and non-governmental agencies for research projects / endowments in the institution during the last five years (INR in Lakhs)

Name of the research project/ endowment	Name of the Principal Investigator/Co-investigator	Department of Principal Investigator	Year of Award	Amount Sanctioned	Duration of the project	Name of the Funding Agency	Type (Government/non-Government)
Generation of drinking water from humid atmospheric air in coastal region	Anjan Kumar Sahu	Mechanical Engineering	2018	7,500	6 Months	Tamilnadu State Council for Science & Technology	Government
Regulation of MTC bus with passenger alert system	A. Anwar Basha	Electrical & Electronics Engineering	2019	7,500	6 Months	Tamilnadu State Council for Science & Technology	Government
Smart Under Water Robotic Cleaner	M.S.Rajan	Electrical & Electronics Engineering	2020	5000	1 Year	PanIIT Alumni Leadership Series	Non-Government
Web Designing	Mrs. G. Sulthana Begam	Computer Science Engineering	2022	10000	1 Month	Jayaa Financial Services Pvt. Ltd	Non - Government
Design and development of portable plastic chip crusher	Mr.P.Muniraja Chandra	Mechanical Engineering	2022	7500	6 Months	Tamilnadu state Council for Science and Technology, Chennai	Government

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COLLEGE OF ENGINEERING

2018-19

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2.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE CAMPUS, CHENNAI-600025

APPROVED LIST OF STUDENT PROJECTS 2018-2019
ENGINEERING STREAM

CHEMICAL ENGINEERING

No.	Guide Name & Address	Title of the Project	Student(s) Name	Code	Amt. Rs.
001	Dr. S. Venkatesan Associate Professor Dept. of Petrochemical Technology Anna University (BIT Campus) Tiruchirappalli - 620024	Deep desulfurisation of liquid fuels using ionic liquids	Abirami R Saranya R	CHE-001	7500/-
002	Dr.N. Samsudeen Assistant Professor Dept. of Chemical Engineering National Institute of Technology Tiruchirappalli - 620015	Design of a controller for enhancing the hydrogen production in microbial electrolysis cell	Amal Premkumar K P	CHE-002	7500/-
003	K Chithra Associate Professor Dept. of Chemical Engineering A.C.Tech. Anna University Chennai-600025	Experimental Studies on Residual vaccum oil viscosity reduction	K Zeliyan	CHE-003	7500/-
004	Dr P Mullai Professor Dept. of Chemical Engineering Annamalai University Chidambaram-608002	Bitumen binding with lignin for road construction - An eco-friendly approach	J Iyyappan	CHE-004	7500/-
005	K P Bhuvana Associate Professor Dept. of Plastics Technology Central Institute of Plastics Engineering and Technology Chennai-600032	Development of long lasting polymer material for floater systems to install photovoltaic panels in water bodies	Aakshai Kumar G Gayathri V Priya S Rathimalar S	CHE-005	7500/-
006	N Subramanian Assistant Professor Dept. of Chemical Engineering Kongu Engineering College Erode-638060	Biodegradable plastic from mixed starch	Haritha S R Chandra Choodan K Dravid Madhusudhanan K	CHE-006	7500/-
007	Raj Kumar A Assistant Professor Dept. of Petrochemical Engineering SVS College of Engineering Coimbatore-642109	Efficient Removal Of Acid And Base Dye From Aqueous Solution Using A Nanocomposite Of Polypyrrole grafted Sodium Alginate And Incorporated Bentonite	Mohamed Yasar I	CHE-007	7500/-
008	Dr J B Veeramalini Assistant Professor Dept. of Chemical Engineering [illegible] High Tech [illegible]ajan Dr.Sakunthala [illegible]g College [illegible]00062	Comparative study and oxidative stability of various natural antioxidant potentials in essential oils	V N Kavya N U Yuvasri	CHE-008	7500/-
009	P Induja Assistant Professor	Synthesis Of Microcrystalline Cellulose, Silica And Imparting [illegible] with	G Ashwin A john	CHE-009	7500/-

46	Dr.Umashankar.S HOD Vellore Institute of Technology Vellore - 632 014	IoT based smart refrigeration with smart environment and industry	Mariya Sebastian Pranathy.V.N	EME-078	7500/-
347	Mr.S.Srinivasan Assistant Professor Dept. of Mechanical Engineering Nehru Institute of Technology Jawahar Garden Coimbatore - 641 105	Design and Fabrication of manual stair climbing chair for sick patients	Reslin.C.R Vishnu.K.M Suraj A.K Sreejith	EME-079	7500/-
348	T.Elangovan Assistant Professor Dept. of Mech. Engg. Sri Ramakrishna Institute of Technology,Pachapalayam Coimbatore -641 010	Design and fabrication of gravity power generation system	Micheal Arockia Sefrin.A Pavithran.A Praveenkumar.R	EME-080	7500/-
3[illegible]	Mr.S.Vasanthaseelan Assistant Professor Dept. of Auto Mobile Engg., SNS College of Technology, SNS Kalvi Nagar Coimbatore - 641 035	Extraction of biodiesel from algae	B.Adhiban M.Mithilesh L.Kiran Gupta	EME-081	7500/-
350	Dr V Suresh Professor Mar Ephraem College of Engineering and Technology Marthandam-627171	Spot and shoot robot; a vision dependent robot for border security	Bodlin Lakha B S Abisha Mol T Adlin Suriya S	ME-082	7500/-
351	Mr.A.Prabharakan Assistant Professor Dept., of Automobile Engg., Kumaraguru College of Tech. Chinnavedampatti Coimbatore - 641 049	Development of Driver safety system to avoid accidents	Mr.Gobinath.M.C Guruprasad.A Prabakaran.P	EME-083	7500/-
352	Mr.L.Prince Jeya Lal Assistant Professor Dept. of Mech. Engg. KCG College of Technology Karapakkam,Chennai - 97	Development of Exo-Skeleton for Farmers	Kishore.K Karthikeyan.A	EME-084	7500/-
353	S Surya Assistant Professor Dept. Of Mechanical Engg., AVS College of Technology Salem-636106	Investigation of Solar Water Heater using Phase Change Material(PCM)	Sathis M Suriya P	EME-085	7500/-
354	Anjankumarsahu Assistant Professor Dept. of Mech. Engg. Aalim Muhammed Salegh College of Engineering Muthapudupe,Chennai-55	Generation of drinking water from humid atmospheric air in coastal region	Mohamed Yasir.M Mohamed Marsath.M Mohammed Fahad.F Safat Ahamed.H	EME-086	7500/-
355	P.Surendar Assistant Professor Dept. of Mech. Engg. A[illegible]ing College S[illegible]03	Automatic DIM Bright control of vehicle head lights	K.A.Kavinkumar A.Logendrarajan R.Muralidharan	EME-087	7500/-
356	[illegible] A[illegible]essor Dept. of Mech. Engg. Easwari Engineering College Bharathiselai,Chennai-600089	Design and fabrication of borewell child rescue machine	Maheshwaran.C.H Manikandan.P Melvin Irudhayaraj.M	088	

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CHENNAI
600 055

PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING

GENERATION OF DRINKING WATER FROM HUMID ATMOSPHERIC AIR IN COASTAL REGION

M. MOHAMED YASIR, M. MOHAMED MARSHATH, F. MOHAMMED FAHAD and H.SAFAT AHAMED
Asst.Prof. Anjan Kumar Sahu
Department of MECHANICAL ENGINEERING, AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING, Muthapudupet,
Faculty of Mechanical Engineering, AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING, Muthapudupet,
Chennai - 600055.

Abstract

The project is aimed to produce drinking water from humid atmospheric air in coastal region using a simple refrigeration cycle by using R-22 as refrigerant. The PVC pipe is the outer casing of the evaporator coil and is connected to a blower. Blower sucks the atmospheric air and delivers into the evaporator coil which absorbs the heat from atmospheric air and converts the moisture into water droplet. Water droplets collected in the bottom of the PVC pipe. Generation of water mainly depends on humidity of air, dew point temperature of (DPT) atmospheric air and the cooling capacity of of evaporator.

Introduction

The atmosphere air contain water in the form of water vapor, moisture etc. The contents of water vapor present in humid atmospheric air are not utilized. This can be used to generate water with help of air to water machine. This device is capable of converting atmospheric moisture directly usable and even drinkable water. The machine uses the principle of latent heat to convert water vapor molecule into water droplets.

Objective

The aim of the project is to design and develop a device which can be used to produce water and can meet the drinking water requirements of a regular household. This device can solve some extent of drinking water problem crisis in society. The device initially compresses the humid atmospheric air particularly in coastal region, then condenses water vapor present in the atmosphere air and finally purifies it for drinking purpose.

Materials and Methods

The outer casing of evaporator is made up of PVC which is light weight, cheap material and easy to work with. Blower is connected with PVC pipe for sucking the atmospheric air and delivers the sucked air into the evaporated coil, which absorb the heat from atmospheric air and convert the moisture into water droplet. Water droplets collected at the bottom of the PVC pipe. Compressor is connected with the condenser with help of delivery tube which is ½ inch in diameter and the condenser is connected with the capillary tube with same diameter of copper [illegible] the compressor set up and evaporator setup is connected through the deliver line

copper tube with ½ inch diameter. Capillary tube is connected with evaporator coil through suction line copper tube ¼ inch diameter. The stand is made up of steel square tube for evaporating coil.

Working

This model worked on simple refrigeration cycle by using R-22 as refrigerant. The humid atmospheric air is sucked by blower and delivers into the evaporator coil which absorbs the heat from atmospheric air and converts the moisture into water droplets. As pressure increases the dew point rises; thus high compression force the dew point above the ambient temperature resulting in spontaneous condensation in the evaporator which is covered with PVC pipe. Water droplets are collected at the bottom of PVC pipe casing.

Result

The test was carried out (24.03.2019) at different atmospheric temperatures 30^0 C, 35^0 C, 40^0 C and 45^0 C, it is found the best result obtained with ambient temperature of 35^0C or higher and if relative humidity is greater than 50% then the device will function well and it will start condensing water. Similarly data is also obtained by running the set up for 10 minutes at different operating times of a particular day (24 Hours). The test was conducted at 600 AM, 12.00 Noon, 9.00 PM and 12.00 Mid Night respectively. It is found maximum water generation can be obtained in the form of droplets at inlet temperature of atmospheric air 28^0 C and relative humidity of 64% at 6.00 AM and water is generated of 31 ml by running the setup for 10 minutes.

Conclusion

The test was carried out in Chennai (Avadi) which is a region with low humidity and 25 KM away from sea shore. Based on the result obtained the humidity of a region must remain above 50% for proper functioning of the device. The generation of water output can be increase if the device is tested in coastal areas where the humidity is high. Similarly increasing the cooling capacity of evaporator, water generation can be improved. Solar energy can be used for cost saving purpose for running the compressor.

Guide: Dr. ANJAN KUMAR SAHU, Assistant Professor, Department of MECHANICAL ENGINEERING, AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING, Chennai-600055.

2019-20

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19-20

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TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOG'
DOTE Campus, Chennai-600025

GOVERNMENT OF TAMILNADU
TRUTH ALONE TRIUMPHS

STUDENT PROJECT SCHEME 2019-2020
APPROVED LIST OF PROJECTS - ENGINEERING STREAM

No.	Guide Name & Address	Title of the Project	Student(s) Name	Code	Amt. Rs.
165.	Mr. A. Anwar Basha Asst. Professor Dept. of ECE Aalim Muhammed Salegh College Of Engineering Chennai - 600 055	Regulation of mtc bus with passenger alert system	R.Anbarsu M.H.Mohamed Saaleem A.Nibin Abraham R.Thanikachalam	EEE-038	7500/

Asst Prof.A.MOHANASUNDARAM
PROJECT COORDINATOR/EEE

Asst Prof.A.ANWAR BASHA
PROJECT GUIDE

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
CHENNAI
600 055

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COLLEGE OF ENGINEERING

MR.ANBARASU.R
(REG.NO110116105304)

MOHAMED SAALEEM.M.H
(REG.NO 110116105013)

NIBIN ABRAHAM.A
(REG.NO 110116105309)

THANIKACHALAM.R
(REG.NO 110116105315)

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COLLEGE OF ENGINEERING

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOG'
DOTE Campus, Chennai-600025

STUDENT PROJECT SCHEME 2019-2020
APPROVED LIST OF PROJECTS - ENGINEERING STREAM

No.	Guide Name & Address	Title of the Project	Student(s) Name	Code	Amt. Rs.
165.	Mr. A. Anwar Basha Asst. Professor Dept. of ECE Aalim Muhammed Salegh College Of Engineering Chennai - 600 055	Regulation of mtc bus with passenger alert system	R.Anbarsu M.H.Mohamed Saaleem A.Nibin Abraham R.Thanikachalam	EEE-038	7500/

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TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE CAMPUS, CHENNAI - 600 025

STUDENT PROJECT SCHEME 2019-2020
UTILISATION CERTIFICATE

(TWO COPIES)

1. Name of the guide and address: MR. A. ANWAR BASHA, ASST. PROFESSOR, DEPT OF EEE, Aalim Muhammed Salegh College of Engineering, Chennai-600055

2. Name of the student(s): R. ANBARASU (110116105304), M. A. MOHAMED SARLEM (110116105013), A. NIBIN ABRAHAM (110116105309), R. THANIKACHALAM (110116105315)

3. Title of the project: REGULATION OF MTC BUS WITH PASSENGER ALERT SYSTEM

4. Project code: EEE-038

It is certified that a sum of Rs. 7500/- (Rupees Seven thousand five hundred) 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
HEAD
Electrical & Electronics Engg
Aalim Muhammed Salegh
College of Engineering

Signature of the REGISTRAR/PRINCIPAL/DEAN
With SEAL
Prof. Dr. M. A[illegible] ALI BAIG
B.E., M.Tech [illegible]
AALIM [illegible] SALEGH
COLLEGE OF ENGINEERING
AVADI, IAF, MUTHAPUDUPET,
CHENNAI - 600 055.

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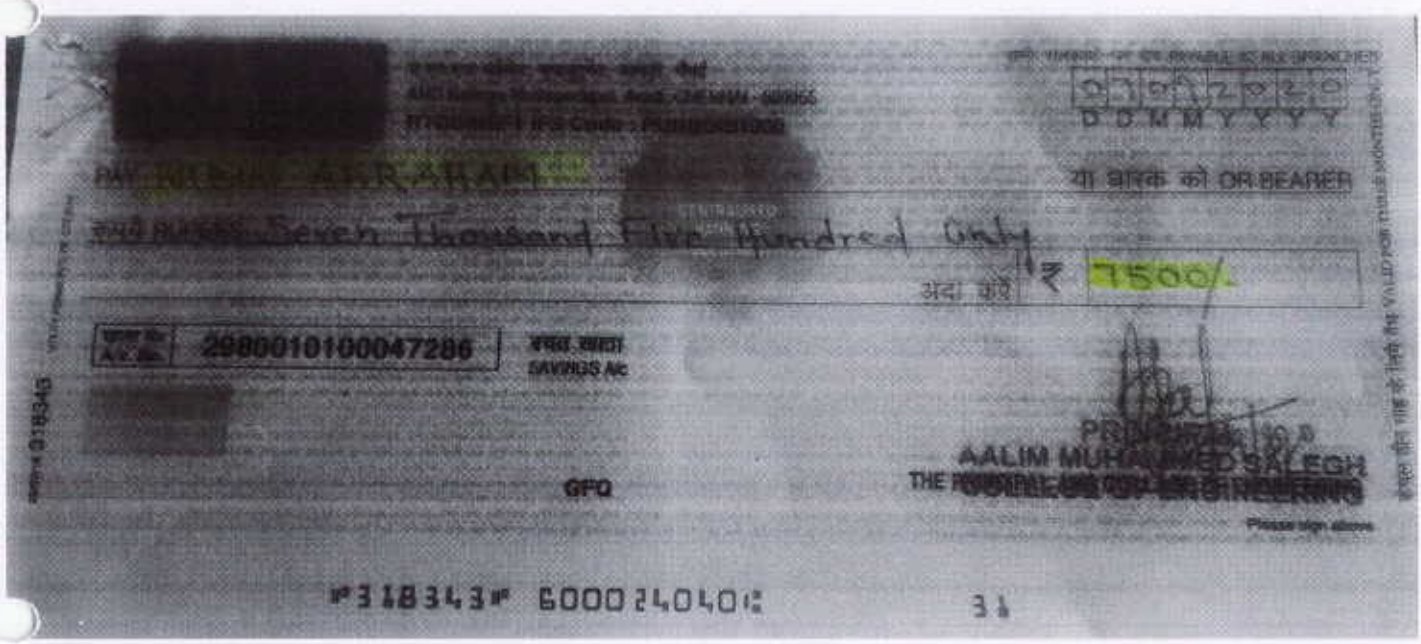

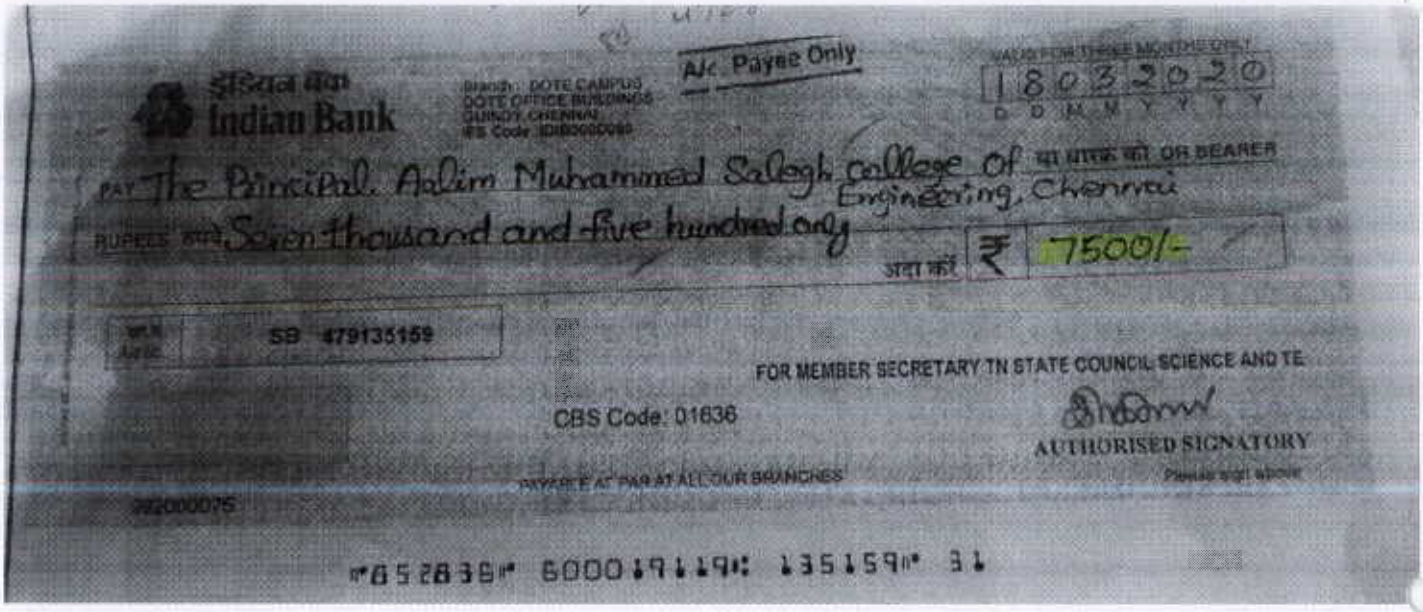

5. **Aalim Muhammed Salegh College of Engineering (1) – 7500/-**

	Mr. A. Anwar Basha Asst. Professor Dept. of ECE Aalim Muhammed Salegh College of Engineering Chennai - 600 055	Regulation of mtc bus with passenger alert system	R.Anbarsu M.H.Mohamed saaeem A.Nihin Abraham R.Thanikachalam	EEE-038	The Principal Aalim Muhammed Salegh College of Engineering Chennai - 600 055	7500/-

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TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
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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

Lr.No.TNSCST/SPS/AR/2019-2020 18.03.2020

To
The Principal
Aalim Muhammed Salegh College of Engineering
Chennai - 600 055

Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2019-2020 – 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.

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.7500/- No: 852836 dt 18.03.2020

Copy to: Individual Guides

DATE 6/6/2020
SL.NO 600

ALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING CHENNAI 600 055

PRINCIPAL
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COLLEGE OF ENGINEERING

REGULATION OF MTC BUS WITH PASSENGER ALERT SYSTEM

R.Anbarasu, M.H.Mohamed Saaleem, A.NibinAbraham, R.Thanikachalam
Department of Electrical and Electronics Engineering
Aalim Muhammad salegh college of Engineering Chennai-60005

Abstract

This project mainly concerned about a design of reliable hardware model to save fuel, time and avoid unwanted stopping of MTC bus in the Chennai city. This innovative design regulates the bus operating systems with simultaneously notifying the passengers (about arrival of bus) and bus conductor (whether passengers are awaiting to board the bus).The bus conductor is notified through ETM (Electronic Ticketing Machine) and passengers are notified through LED notification board with an announcement.

Introduction

As per 2011 census data, Chennai is the 4th highly populated city in India with population of 46 lakhs. At present it is estimated to be 48 lakhs with working population of 16.2 lakhs. According to the Ease of Moving Index report 2018, 75% of the residents use public transport including buses, cabs and auto rickshaws to daily commute. Most importantly 60% of the residents participated in survey said that they prefer buses over other modes of transport.

Motivation

The motivation for this project came by facing the daily cumulative traffic happens in the morning and evening peak hour. Many of our college mates uses the bus transport to reach college by bus transport usually comes late and looks very tired. Now the government also decided to add more numbers of solar power operated buses to reduce pollution. This advantage taken in to consideration with proper bus regulating system may provide good transport facility to the needy public through our project.

Materials and Methods

The Technology used is Arduino programming in ardunio processor according to programming logic we planned for the bus regulation method. Arduino processor, Bluetooth, Buzzer, LCD display, push button switch, LED lights and battery are used .This contain Master and Slave mode operation. This model makes transmitter and receiver to transmit the signal. One device kept in the bus and another device kept in bus stop and the communication takes place between those devices regulates the bus transport.

Characterization

The Arduino board mainly include length and width. The printed circuit board of the Arduino Uno length and width are 2.7 X 2.1 inches, but the power jack and the USB connector will extend beyond the previous measurement. Bluetooth consists of Frequency: 2.4GHz ISM band, Emission power: ≤4dBm, Class 2, Sensitivity: ≤-84dBm at 0.1% BER, Speed: Asynchronous: 2.1Mbps (Max) / 160 kbps, Synchronous: 1Mbps/1Mbps, Security:

Authentication and encryption, Power supply: +3.3VDC 50mA, LCD display. In this LCD each character is displayed in 5x7 pixel matrix. The 16 x 2 intelligent alphanumeric dot matrix displays the details such as bus arrival.

Working

In this project model both the bus stop and the bus consist of transmitter and receiver when the push button is pushed by the passenger with respective bus button. The signal transmitted through the help of Bluetooth device. The arduino is connected with the Bluetooth which transmits and receive the signal to the bus and bus stop. The Bluetooth HC-05 can receive or transmit the signal up to 10 meters. When the bus in 10 meter the signal receives in bus. The bus consists of Arduino, Bluetooth, and buzzer and LED indication. When the signal is received by the Bluetooth the buzzer and LED indicates the bus arrival. This setup were connected in ETM (Electronic Ticketing Machine) and It is handled by conductor he will observe the indication. Then simultaneously the signal transmitted to Bus stop. The bus stop consists of Arduino, LCD display, Buzzer, Bluetooth and Battery. When the signal received by the Bluetooth LCD display and buzzer announcement takes place. After the announcement the passenger know that the bus is arriving to the bus stop this system makes time saving tension free and keeps both passenger and bus driver more comfortable. If the bus did not get any signal from the bus stop then the unwanted stopping of the bus can be avoided. Due to this the time is saved and the bus can reach destination at stipulated time and because of that the fuel also saved. This prototype model can be extended to the real time with updating components in to appropriate technology.

Advantages

This project provides 1) the passengers to reach the destination in correct time and time saving 2) the unwanted bus stop are avoided, 3) Using this the Fuel are saved, 4) Using this system traffic are reduced, 5) Using over this project public turn over to reliable public transport.

Conclusion

This project helps to use most powerful public vehicle in a effective manner and so that the government can take more profit through this project. Most precious time of many public people are saved to utilize in a good manner. Then the fuel consumption is very less in our project and more effective. When the bus arrived the in time people will turn to public vehicle. So the pollution gets controlled and the traffic becomes less if the project implemented in real time soon.

Project Guide: Er.A.Anwar Basha, Assistant professor, Department of Electrical and Electronics Engineering Aalim Muhammad salegh college of Engineering Chennai-60005

13th September, 2019

From (5)

Shabib Mohamed
Team Poros,
Department of Mechanical Engineering.
Aalim Muhammad Salegh College of Engineering.
Chennai - 600055

To

The Principal,
Aalim Muhammad Salegh College of Engineering,
Chennai - 600055

Respected Sir,

Sub: Requesting financial support reg.

We are here to present you regarding Rally Car Design Challenge 2019. Almost 80% of the fabrication of All Terrain Vehicle is over and now we are facing financial problem. The total cost estimation is Rs 5,32,426 and the amount we have is Rs 2,72,100. So the remaining amount we require is Rs. 2,60,326. ✓ I kindly request you to provide us the needful so that it will be very much useful for us to participate in the event.

Thanking You

Yours faithfully.
[signature]
(Shabib Mohamed
Team Poros)

Forwarded to the Principal
[signature]
13/9/19
(Dr. S. SATHISH)
HOD/MECH

Sanctioned 1.50 Lacs
S. [signature]

[Forward]ed to Secretary for favourable consideration. Mechanical department has brought laurels to [the college] in the past, I assure you that they will try their level best.
[signature] 13/09/19

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Date: 13.09.2019

Research Grant Sanction Letter

To,

Mr. S. Abdur Rahman,

Assistant Professor,

Department of Mechanical Engineering,

Aalim Muhammed Salegh College of Engineering,

Muthapudupet, Avadi, I.A.F, Chennai – 600 055.

Sir,

Sub: Grant for Research Project Development – fund approval – Reg.

With reference to your letter dated 13th September 2019 requesting for financial support for Research Project titled "RCDC". It is informed that your project proposal is accepted. The fund of Rs. 1,50,000 (One Lakh Fifty Thousand only) is sanctioned. You are asked to submit the detailed expanses and settle the account within a period of ~~15 days~~ / one month.

Principal

13/09/19

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College E-mail : info@aalimec.ac.in / principal@aalimec.ac.in
Website : www.aalimec.ac.in

RALLY CAR DESIGN CHALLENGE
RCDC
2019

To whom so ever it may concern

It is to inform that the team **Poros** from **Aalim Mohammed Salegh College Of Engineering** having **vehicle number 010** are participating in Rally Car Design Challenge (RCDC) 2019 Competition is going to be held in **RCDC Village, Jaipur Noakha Bypass, Near Rishi Toyota, Bikaner, Rajasthan from 2nd to 4th October 2019.**

The Team have designed and manufactured their own ATV to participate and perform in the event and this vehicle not mean for any commercial purpose or sale

Team Name: Team Poros

College: Aalim Mohammed Salegh College Of Engineering

City: Chennai **State: Tamil Nadu**

Regards,

Prerna Kumawat,

Rally Car Design Challenge (RCDC)

ALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING CHENNAI 600 055

PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING

दिनांक Date	चैक संख्या Cheque No.	विवरण Particulars	निकाली गई रकम DR Amount	जमा की गई रकम CR Amount	शेष जमा राशि Balance
				Balance b/f	41,686.34 C
			5,000.00		36,686.34 C
20-08-2019	068891	By TO R MOHAN BABU		362.00	37,048.34 C
-2019		By 4919000100007816:Int.Pd:01-06-201		1,50,000.00	1,87,048.34 C
17-09-2019		BY AMS COLLEGE	15,000.00		1,72,048.34 C
18-09-2019	068892	By TO SHEIK ARSATH AHAMED		15,000.00	1,87,048.34 C
18-09-2019		BY SATHISH	1,45,000.00		42,048.34 C
24-09-2019	068893	By TO ABDUR RAHMAN S	20,000.00		22,048.34 C
24-09-2019	068894	By TO ABDUR RAHMAN S		3,000.00	25,048.34 C
27-09-2019		By IMPS-IN/927013065256/9094049077/U	17.70		25,030.64 C
06-10-2019		To SMS CHRG FOR:01-07-2019to30-09-20	3,000.00		22,030.64 C
03-12-2019	068895	By TO PARTHASARATHY		320.00	22,350.64 C
04-12-2019		By 491900010000781 6:Int.Pd:01-09-201		9,000.00	31,350.64 C
20-12-2019		BY CASH	9,000.00		22,350.64 C
20-12-2019		To SELF		8,750.00	31,100.64 C
20-12-2019		BY CASH			

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AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING

पंजाब नेशनल बैंक
punjab national bank

ए.एम.एस. कॉलेज, मुथापुडुपेट, आवड़ी, चैन्नई
AMS College, Muthapudupet, Avadi, CHENNAI - 600055
RTGS/NEFT IFS Code : PUNB0491900

16/09/2016
D D M M Y Y Y Y

PAY M/s. Association of Mechanical Engineers या धारक को OR BEARER

रुपये RUPEES One Lac Fifty Thousand only — अदा करें ₹ 150,000/-

खाता सं० A/c. No.	2980010100044517

बचत खाता
SAVINGS A/c
2980010100044517

For A.M.S. COLLEGE OF ENGINEERING, AVADI

VOID

Authorised Signatory(ies)
Please sign above

HAA

"927388" 600024040: 31

07/2013 - 927388

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
CHENNAI 600 055

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COLLEGE OF ENGINEERING

STUDENTS DETAILS

SL. NO	NAME OF THE STUDENT	GENDER	DATE OF BIRTH	AGE	COLLEGE ID NO
1	AJMAL I	MALE	30/10/1998	20	110116114006
2	SHEIK ARSATH AHAMED S I	MALE	13/08/1998	21	110116114089
3	MUHAMMAD ABDUL WAHID K	MALE	29/01/1999	20	110116114074
4	KULAM B A MOOSA NAINA	MALE	15/10/1998	20	110116114032
5	ANWAR M	MALE	17/05/1998	21	110116114009
6	AATHIL AMEEN J	MALE	14/05/1999	20	110116114001
7	WAZIL SHERIF S	MALE	06/09/1999	20	110116114100
8	MOHAMED UVAISULKARNEE D	MALE	09/11/1998	20	110116114061
9	MOHAMED SHAFIQ A	MALE	08/02/2000	19	110117114061
10	MOHAMMED NOWFEL S	MALE	21/12/1999	19	110117114069
11	SHABIB MOHAMED S	MALE	26/03/1998	21	110116114085
12	SHA MOHAMED NASEERUDIN BAKSHI M	MALE	25/07/1998	21	110116114088
13	VINOD EMMANUEL S	MALE	22/06/1998	21	110116114099
14	HEMA VIJAY S	MALE	20/08/1998	21	110116114020
15	MOHAMMED ARIF A	MALE	08/01/2000	19	110117114066
16	SYED MOHAMMED SIDDEEQ S	MALE	31/07/1999	20	110116114095
17	NIRMAL S	MALE	06/09/1998	21	110116114077
18	MEHAR ALI J	MALE	05/09/1998	21	110116114034
19	MOHAMED AL AFRIES M	MALE	26/04/1999	20	110116114307
20	MOHAMED RAZEEN M	MALE	15/06/1998	21	110116114051
21	MOHAMED THAMEEMUL ANSARI S	MALE	04/11/1999	19	110117114062
22	KAMESH K	MALE	28/07/1999	21	110116114028
23	ARIFF S	MALE	28/07/1999	20	110116114010
24	KALEEM ULLAH A	MALE	28/05/1998	21	110116114027

FACULTY DETAILS (ESCORT)

SL. NO	NAME OF THE FACULTY	GENDER	DATE OF BIRTH	AGE	SIGNATURE
1	ABDUR RAHMAN S	MALE	12/11/1990	28	
2	HASEEB RAHMAN J	MALE	12/10/1991	27	

26 82

26 82

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PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING

Invoice

junofast Logitech
GST: 09AAPFJ2924D1ZB
info.junofast@gmail.com
Ghaziabad
Uttar Pradesh
PAN NUMBER: AAPFJ2924D

BILL TO
[illegible]
Chennai
Tamilnadu

SHIP TO
Bikaner
Rajasthan

Invoice #	11		
Date	16 Sep 2019		

Item	Quantity	Price	Amount
Pickup and Drop Charges RCDC	1	₹41,500.00	₹41,500.00

[illegible]

Payment instruction
20% Advance for booking
80% Before loading (At origin)

Subtotal	₹41,500.00
GST (5%)	₹2,075.00
Total	₹43,575.00
Paid on 16 Sep 2019	₹8,715.00
Amount Due	₹34,860.00

Note
[illegible] Mail us on info.junofast@gmail.com

Account Details
Junofast Logitech LLP
Bank Name: [illegible] Bank
Account Number: [illegible]
IFSC: [illegible]

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
CHENNAI
600 055

PRINCIPAL
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COLLEGE OF ENGINEERING

CASH BILL

No. 72 Date 20/06/19

To MR. HEMA VIJAY
AVADI

No	PARTICULARS	Rate	Rs.	P
1no	Co2 Cylinder	40	40	—
1no	Co2 Spray	120	120	—
1no	Co2 Coil 0.8mm	1254	1254	—
			1414	—
		Total		

Paid

A-1 Goods once sold cannot be taken back

GST : 33APJPS9390F1ZF
TIN : 33646343491 / CST : 1312790 / Dt. 21-9-15

DELIVERY NOTE

Ph : 26385311
26372711

Shree Subamala Enterprises

Dealers in all Industrial Gases & Welding Accessories
No.611, C.T.H. Road, Avadi, Chennai - 600 054.

Vehicle No.....

No. 3978

Name AMS College of Engg

Date : 21/6/19

OXYGEN CYLINDERS CYL No.	CYL No.	CYL No.	CYL No.	D.A. CYLINDERS Cu. M.
		Co2 418	7100/-	
			Advance -	6000/-
			Gas Co2 -	1000/-
			Transport -	

d in good condition

nature

For Shree Subamala Enterprises

(a) Oxygen..... (b) D.A. ..... Cu. M.....

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING CHENNAI 600 055

PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING

Subject to Mumbai jurisdiction

PROFORMA INVOICE

TEL No 022-23867689

022-67496251

SIDDHGIRI TUBES

House of : STAINLESS STEEL PIPES & TUBES

85, DURGADEVI STREET, (KUMBHARWADA), MUMBAI -400 004.

M/S Anees Ahmed N

Nizara Educational Campus Muthapudupet, Avadi, IAF

Chennai Tamil Nadu 600055

M-8122790424

SELLER GST NO 27AHWPM9172E1ZO

BUYER GST NO

Invoice No	179	Date 16.4.19
Order No		
Lorry/ RR No		
Challan No	179	Date 16.4.19
payment		
Order Through		

DESCRIPTION	HSN Code	QUANTITY	RATE RS. PS.	UNIT	AMOUNT RS PS
CARBON STEEL 1018 EQUIVALENT	7304				0.00
44.5 45mmOD X 2.5		70.000	425.00	METET	29750.00
FREIGHT AT ACTUAL					0.00
GODOWN DELIVERY TO CHENNAI					0.00
10 DAYS TIME					0.00
					0.00
				P & F.	
				TOTAL	29750.00
				SGST 9%	
				CGST 9%	
				IGST 18%	5355.00
				R. OFF	
				G. TOTAL	35105.00

ACCOUNT NAME SIDDHGIRI TUBES

HDFC BANK BRANCH NULL BAZAR

A/C NO 06262020000548

IFSC Code HDFC0000626

Rs THIRTY FIVE THOUSAND ONE HUNDRED FIVE ONLY

E. & O. E.

1. Goods once sold will not be taken back
2. Payment must be made on demand
3. We are not responsible for the breakage and or shortage after delivery
4. Price are nett
5. Interest @ be charged on pay
6. Cheq d more than due after
7. Servi

I/We hereby certify that my/our registration certificate under the Goods and Service Tax Act 2017 is in force on the the date on which the goods specified in this TAX INVOICE is made by me/usand that the transaction of sale covered by this tax invoice has been effected by me/us and it shall be accounted for in the turnover of sales while filling of return and the due tax if any payable on the sale has been paid or shall be paid

FOR SIDDHGIRI TUBES

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING CHENNAI 600 055

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COLLEGE OF ENGINEERING

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CHENNAI
600 055

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3.2.1 Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

	Title of Workshop/Seminar	Name of the Dept.	Date(s)	No. of participation
1	Methodologies for Generating Revenue through Research with Patents & IPR	CIVIL,CSE,ECE,EEE,IT,MECH	23.7.2019	85

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2020-21

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PALS

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PROJECT TITLE

"RC BASED GARBAGE COLLECTING BOAT"

PROJECT TEAM DETAILS

NAME OF THE PARTNER INSTITUTE: AALIM MUHHAMMED SALEGH COLLEGE OF ENGINEERING

ADDRESS : NIZARA EDUCATIONAL CAMPUS, MUTHAPUDUPET, AVADI IAF, CHENNAI-55

CONTACT PERSON : Mr. M.S RAJAN (ASSISTANT PROFESSOR/EEE)

PROJECT TITLE : **RC BASED GARBAGE COLLECTING BOAT**

TEAM SIZE (MAX 4) : 03

TEAM DETAILS:

	Name	Department /Course	Year	Email id	Mobile
1	NAUSHAD SAHEB K	EEE	IV	naushadsaheb20@gmail.com	9677039202
2	WASIM KHAN	EEE	IV	wasimkhanj@gmail.com	8489607873
3	MOHAMED SEYED RIAZKHAN	EEE	II	mohamedseyed2000@gmail.com	8667557936

Project Faculty Mentor

Name : M.S RAJAN

Designation : Assistant professor

Phone/Mobile : 9840665659

Email id : ms.rajan@aalimec.ac.in

Registration Date : 14/02/2020

14/2/2020

PALS

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING CHENNAI 600 055

IIT MADRAS ALUMNI CHARITABLE TRUST iit ALUMNI

14/2/2020

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AALIM M H
COLLEGE OF ENGINEERING

PALS AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PROJECT TITLE

RC BASED GARBAGE COLLECTING BOAT

DECLARATION BY THE PROJECT TEAM

We, (NAUSHAD SAHEB K, WASIM KHAN, MOHAMED SEYED RIAZKHAN) hereby declare that, to the best of our knowledge and belief:

- » This idea/problem-definition and the solution in this project are our original work
- We will obtain any and all consents, approvals, and licenses required for us to submit this entry; and the details will beprovided in the "Project Description" document;
- » This project and our submission will be in compliance with the rules governing the "PALS Innovation Challenge" competition;
- » This project is funded by the Project Team and by the Institute and there are no sponsors

Note: One team member from our team has chosen to discontinue as a team member. Hence, the total number of team members are three. The name of the person is mentioned below.

Name: VAHAB KHAN N

We understand and accept that any non-compliance of the project terms and conditions, or providing of incorrect information, will result in disqualification of the project from the competition and from our winning any prizes or certificates. Further, we agree to hold harmless PALS, and its affiliates, from any liability arising from claims by third parties on violations of copyrights and intellectual property rights in our project.

Place: CHENNAI Date:14-02-2020

1. Signature: Name: NAUSHAD SAHEB K
2. Signature: Name: WASIM KHAN
3. Signature: S. MD Seyed Riazkha Name: SEYED RIAZKHAN

Project Mentor signature : Name: Asst Prof. M.S RAJAN/EEE

Head of institution signature, name and Seal of the institute:

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COLLEGE OF ENGINEERING

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RC BASED GARBAGE COLLECTING BOAT

INNOVATION CHALLENGE - PROJECT SUMMARY

THEME : WATER

FOCUS AREA : WATER POLLUTION

PROBLEM DEFINITION:

Water pollution has always been a serious topic of discussuion since humans understood its huge effects in the future. However, a lot of damage to the water bodies has been done by the humans itself. Dumping of untreated sewage and garbage has been the huge contributor to this devastation. The first biggest victims of such situations are not the one who create it. It's the acquatic life that live in the water bodies who are deeply effected. It is extremely important that we use technology and deliver the best solutions to maintain the equilibrium in the system.

IDEA/CONCEPT/SOLUTION:

We have designed a RC Based vehicle/boat that will float on the lake's water surface and help in removing the garbage.

It has a conveyor belt attached in the front that will collect the garbage and throw it on the boat's surface.

A set of High definition cameras are used to have a view of the lake and the garbage floating.

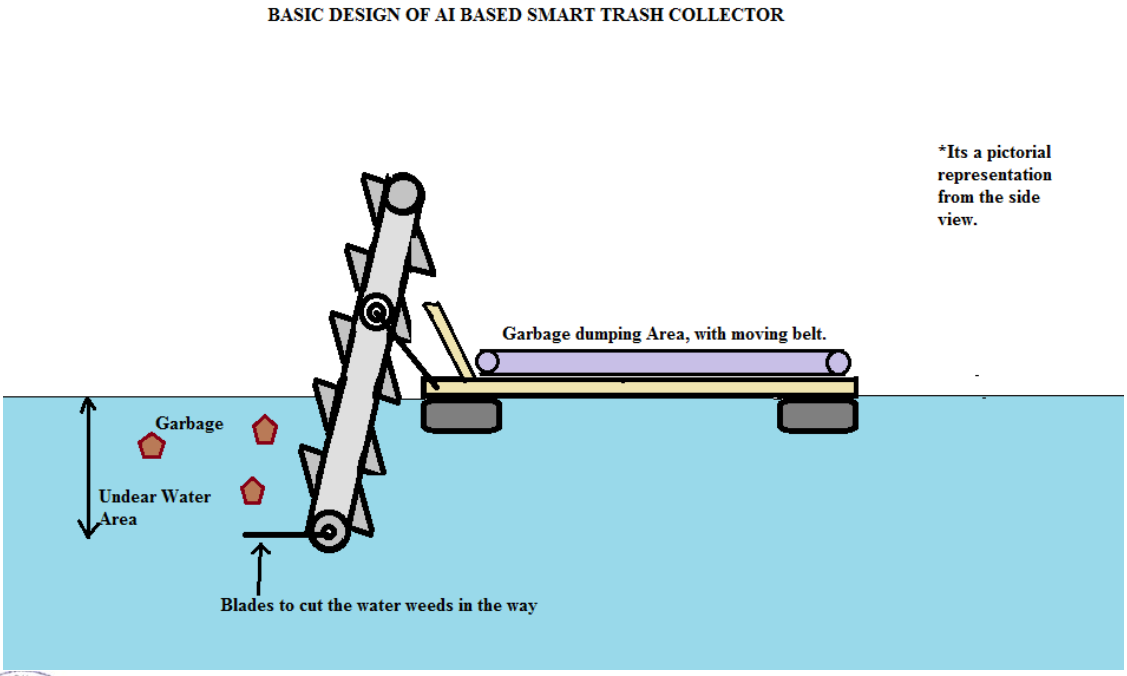
Once the vehicle has reached its full capacity, it could be driven to the shore and dump the garbage, and return to the water body. All through a wireless control.

PROJECT OBJECTIVE:

- To design a Remote control based cleaning vehicle to clean up lakes and ponds.
- It is designed to be handled by one person
- It contributes in cleaning up at small scale, with least complexity.

PROJECT BENEFITS:

- Purely RC based
- HD cameras used to detect the floating garbage.
- Controls available over remote.
- Pneumatic arms available to lift the conveyor belt when not in use.



CONCLUSION:

Our prototype is RC based. It focuses on a small scale clean-up process. We will be working on different platforms like AI (In future) to deliver the best results.We promise to deliver the best results in helping the department in removing the garbage from the water bodies and making India more clean and taking it one step more closer to Swachta.

PALS

innoWAH!
Innovation Competition

27th JUNE, 2020

CERTIFICATE OF APPRECIATION

Awarded to **WASIM KHAN.J** of IV YEAR - EEE from **AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING**, a Partner Institute of PALS 2019-20 for being part of the **SMART UNDER-WATER ROBOTIC CLEANER** project team, which qualified as one of the **THIRTY FIVE FINALIST-TEAMS** in the innoWAH! Innovation Competition. Team participated in the finals and exhibition conducted at the **IIT MADRAS RESEARCH PARK, CHENNAI** on **26th February 2020** and is awarded a Finalist Team Prize of ₹5000.

R. Krishnamurti Rao
innoWAH! Champion

Mohan Narayanan,
Chairman, PALS

PALS, an initiative of all the IIT Alumni, incepted in 2012, focuses on augmenting engineering education. PALS continues to grow every and has offered various activities through the academic year, touching stude agement of the Engineering Institutions

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Innovation Competition

27th JUNE, 2020

CERTIFICATE OF APPRECIATION

Awarded to **MOHAMED SEYED RIAZKHAN.S** of SECOND - EEE from **AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING**, a Partner Institute of PALS 2019-20 for being part of the **SMART UNDER-WATER ROBOTIC CLEANER** project team, which qualified as one of the **THIRTY FIVE FINALIST-TEAMS** in the innoWAH! Innovation Competition. Team participated in the finals and exhibition conducted at the **IIT MADRAS RESEARCH PARK, CHENNAI** on **26th February 2020** and is awarded a Finalist Team Prize of ₹5000.

R. Krishnamurti Rao
innoWAH! Champion

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Innovation Competition

27th JUNE, 2020

CERTIFICATE OF APPRECIATION

Awarded to **NAUSHAD SAHEB.K** of IV YEAR - EEE from **AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING**, a Partner Institute of PALS 2019-20 for being part of the **SMART UNDER-WATER ROBOTIC CLEANER** project team, which qualified as one of the **THIRTY FIVE FINALIST-TEAMS** in the innoWAH! Innovation Competition. Team participated in the finals and exhibition conducted at the **IIT MADRAS RESEARCH PARK, CHENNAI** on **26th February 2020** and is awarded a Finalist Team Prize of ₹5000.

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innoWAH! Champion

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Innovation Competition

27th JUNE, 2020

CERTIFICATE OF APPRECIATION

Awarded to **MR. M.S.RAJAN,** ASSISTANT PROFESSOR from **AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING**, a Partner Institute of **PALS 2019-20** for being the **FACULTY MENTOR** of the **SMART UNDER-WATER ROBOTIC CLEANER** project team, which qualified as one of the **THIRTY FIVE FINALIST-TEAMS** in the innoWAH! Innovation Competition. Team participated in the finals and exhibition conducted at the **IIT MADRAS RESEARCH PARK, CHENNAI** on **26th February 2020** and is awarded a Finalist Team Prize of ₹5000.

R. Krishnamurti Rao
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Chairman, PALS

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2021-22

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AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

Muthapudupet, I.A.F Avadi, Chennai – 600 055

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

PROPOSALSINVITED UNDER

INTERNAL SEED FUNDING SCHEME

1	Title of the Project	:	REGULATION OF MTC BUS WITH PASSENGER ALERT SYSTEM
2	Discipline under which the project is to be considered	:	ELECTRICAL AND ELECTRONICS ENGINEERING
3	Name &Designation of the Principal Investigator	:	Er.A.MOHANASUNDARAM Assitant Professor/EEE
4	Postal Address of the Principal Investigator	:	Department of EEE, AALIM MUHAMMED SALEGH ENGINEERING COLLEGE, AVADI-IAF, CHENNAI-55.
5	Name, Designation and address of Co-investigator if any	:	Er.A.ANWAR BASHA Assitant Professor/EEE
6	Contact Phone numbers (Office and residence) of PI&Co-PI along with,emailid	:	Office : 044-26842627 Mobile: +91-9789355953 mohanasundaram.a@aalimec.ac.in anwarbasha@aalimec.ac.in
7	Name of the Department in which the project will be carried out	:	ELECTRICAL AND ELECTRONICS ENGINEERING
8	Name of other Institution(s) Organization(s)involved in the Project	:	AALIM MUHAMMED SALEGH ENGINEERING COLLEGE, AVADI-IAF, CHENNAI-55.
9	Duration of the Project (Maximum 1 years)		ONE YEAR
10	Total Cost of the Project Proposal (details to be furnished in the prescribed format)	:	Rs 25000
12	Details of the project proposal including the State-of-the art of the subject,the work already done in this area in India or elsewhere, and defining clearly the objectives and methodology and year wise phasing of the project.	:	To be enclosed separately
13	Brief bio-data of the Investigator(s)	:	To be enclosed separately
14	Social relevance and use fullness of the project	:	To be enclosed separately

01/10/2021

Place: Chennai-55

Signature of the
Investigator(s)
(A. MOHANASUNDARAM)

Date: 01.10.2021

1/10/2021

Signature of the
Head of the Department
With Seal

T. S. RAJAN
HEAD
lectrical & Electronics Engg.
Aalim Muhammed Salegh
College of Engineering

1/10/2021

Signature of the
Head of the Institution
With Seal

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AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

Muthapudupet, I.A.F Avadi, Chennai – 600 055

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

DETAILS OF BUDGET ESTIMATE

Sl.No	Details	Total
A	i. **Equipment** (only project specificmin or equipment)	Rs 21000
B	**Consumables^**	Rs 3000
	Chemicals/glasswares	
	Fabrication/Service	Rs 1500
	Testing	Rs 1000
	Other Consumables	
	Total	Rs 5500
C	**Travel**	Rs 1000
D	**TotalofA+B+C+D**	Rs 27500
E	**Institutional overhead charge (Maximum of Rs.15000/per year)**	Rs 7000
F	**Total Cost of Project**	Rs 34500

01/10/2021

Signature of the
Investigator(s)

(A. MOHANASUNDARAM)

01/10/2021

Signature of the
Head of theInstitution

Prof. Dr. S. SATHISH
B.E.,M.E.,Ph.D.,
PRINCIPAL
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
MUTHAPUDUPET, IAF-AVADI
CHENNAI 600 055

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING CHENNAI 600 055

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REGULATION OF MTC BUS WITH PASSENGER ALERT SYSTEM

Abstract

This project mainly concerned about a design of reliable hardware model to save fuel, time and avoid unwanted stopping of MTC bus in the Chennai city. This innovative design regulates the bus operating systems with simultaneously notifying the passengers (about arrival of bus) and bus conductor (whether passengers are awaiting to board the bus).The bus conductor is notified through ETM (Electronic Ticketing Machine) and passengers are notified through LED notification board with an announcement.

Introduction

As per 2011 census data, Chennai is the 4th highly populated city in India with population of 46 lakhs. At present it is estimated to be 48 lakhs with working population of 16.2 lakhs. According to the Ease of Moving Index report 2018, 75% of the residents use public transport including buses, cabs and auto rickshaws to daily commute. Most importantly 60% of the residents participated in survey said that they prefer buses over other modes of transport.

Motivation

The motivation for this project came by facing the daily cumulative traffic happens in the morning and evening peak hour. Many of our college mates uses the bus transport to reach college by bus transport usually comes late and looks very tired. Now the government also decided to add more numbers of solar power operated buses to reduce pollution. This advantage taken in to consideration with proper bus regulating system may provide good transport facility to the needy public through our project.

Materials and Methods

The Technology used is Arduino programming in ardunio processor according to programming logic we planned for the bus regulation method. Arduino processor, Bluetooth, Buzzer, LCD display, push button switch, LED lights and battery are used .This contain Master and Slave mode operation. This model makes transmitter and receiver to transmit the signal. One device kept in the bus and another device kept in bus stop and the communication takes place between those devices regulates the bus transport.

Characterization

The Arduino board mainly include length and width. The printed circuit board of the Arduino Uno length and width are 2.7 X 2.1 inches, but the power jack and the USB connector will extend beyond the previous measurement. Bluetooth consists of Frequency: 2.4GHz ISM band, Emission power: ≤4dBm, Class 2, Sensitivity: ≤-84dBm at 0.1% BER, Speed: Asynchronous: 2.1Mbps (Max) / 160 kbps, Synchronous: 1Mbps/1Mbps, Security: Authentication and encryption, Power supply: +3.3VDC 50mA, LCD display. In this LCD each character is displayed in 5x7 pixel matrix. The 16 x 2 intelligent alphanumeric dot matrix displays the details such as bus arrival.

Working

In this project model both the bus stop and the bus consist of transmitter and receiver when the push button is pushed by the passenger with respective bus button. The signal transmitted through the help of Bluetooth device. The arduino is connected with the Bluetooth which transmits and receive the signal to the bus and bus stop. The Bluetooth HC-05 can receive or transmit the signal up to 10 meters. When the bus in 10 meter the signal receives in bus. The bus consists of Arduino, Bluetooth, and buzzer and LED indication. When the signal is received by the Bluetooth the buzzer and LED indicates the bus arrival. This setup were connected in ETM (Electronic Ticketing Machine) and It is handled by conductor he will observe the indication. Then simultaneously the signal transmitted to Bus stop. The bus stop consists of Arduino, LCD display, Buzzer, Bluetooth and Battery. When the signal received by the Bluetooth LCD display and buzzer announcement takes place. After the announcement the passenger know that the bus is arriving to the bus stop this system makes time saving tension free and keeps both passenger and bus driver more comfortable. If the bus did not get any signal from the bus stop then the unwanted stopping of the bus can be avoided. Due to this the time is saved and the bus can reach destination at stipulated time and because of that the fuel also saved. This prototype model can be extended to the real time with updating components in to appropriate technology.

Advantages

This project provides 1) the passengers to reach the destination in correct time and time saving 2) the unwanted bus stop are avoided, 3) Using this the Fuel are saved, 4) Using this system traffic are reduced, 5) Using over this project public turn over to reliable public transport.

Conclusion

This project helps to use most powerful public vehicle in a effective manner and so that the government can take more profit through this project. Most precious time of many public people are saved to utilize in a good manner. Then the fuel consumption is very less in our project and more effective. When the bus arrived the in time people will turn to public vehicle. So the pollution gets controlled and the traffic becomes less if the project implemented in real time soon.

Principal investigator
Er.A.Mohanasundaram
Assistant professor, Department of Electrical and Electronics Engineering,
Aalim Muhammad salegh college of Engineering
Chennai-60005

Co-investigator
Er.A.Anwar Basha,

Assistant professor, Department of Electrical and Electronics Engineering,
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Chennai-60005

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Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

PROPOSALS INVITED UNDER

INTERNAL SEED FUNDING SCHEME

1	Title of the Project	:	**Study Of Effectiveness of counterflow heat exchanger using Various Phase Change Materials(PCM).**
2	Discipline under which the project is to be considered	:	**Mechanical Engineering**
3	Name & Designation of the Principal Investigator		**P.MUNI RAJA CHANDRA** **Assistant Professor**
4	Postal Address of the Principal Investigator	:	**Aalim Muhammed Salegh College Of Engineering, Avadi Iaf, Chennai-600055.**
5	Name, Designation and address of Co-investigator if any	:	**R.MANIKANDAN** **Assistant Professor** **Aalim Muhammed Salegh College Of Engineering, Avadi Iaf, Chennai-600055.**
6	Contact Phone numbers (Office and residence)ofPI&Co-PIalongwith,emailid	:	**9962739003– p.munirajachandra@aalimec.ac.in** **9094044612- r.manikandan@aalimec.ac.in**
7	Name of the Department in which the project will be carried out	:	**Mechanical Engineering**
8	Name of other Institution(s) Organization(s) involved in theProject	:	**Micro Lab- Ambattur,Chennai** **Anna University**
9	Duration of the Project (Maximum 1 years)		**6 months**
10	Total Cost of the Project Proposal (details to be furnished in the prescribed format)	:	**28350/-**
11	An abstract, not exceeding one page describing the background, objectives, methodology & yearwise budget	:	ANNEXURE-1
12	Details of the project proposal including theState-of-theartofthesubject,thework already done in this area in India or elsewhere, and defining clearly the objectivesandmethodologyandyearwise phasing of the project.	:	ANNEXURE-II
13	Brief bio-data of the Investigator(s)	:	ANNEXURE-III
14	Social relevance and usefulness of the project	:	ANNEXURE-IV

Place: 09.12.21

Date:

Signature of the Investigator(s)

1. P.Muni 9/12/21 2.

Signature of theHead of the Department
WithSeal

HEAD
Department of Mechanical Engineering
Aalim Muhammed Salegh College of Engineering
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Signature of the HeadoftheInstitution
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9/12/21

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Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

DETAILS OF BUDGET ESTIMATE

Sl.No	Details	Total
A	i. **Equipment** (only project specific minor equipment)	10000
B	**Consumables^**	
	WAX	1000
	HYDROGINETED VEGITABLRE OIL	1000
	Testing	10000
	OtherConsumable	1000
	Total	13000
C	**Travel**	1500
D	**TotalofA+B+C+D**	24500
E	**Institutional overhead charge (Maximum of Rs.15000/per year)**	3000
F	**TotalCostofProject**	**27500**

1. P. Naf
2.

Signature of theInvestigator(s)

22/7/2023

Signature of the Head of theInstitution

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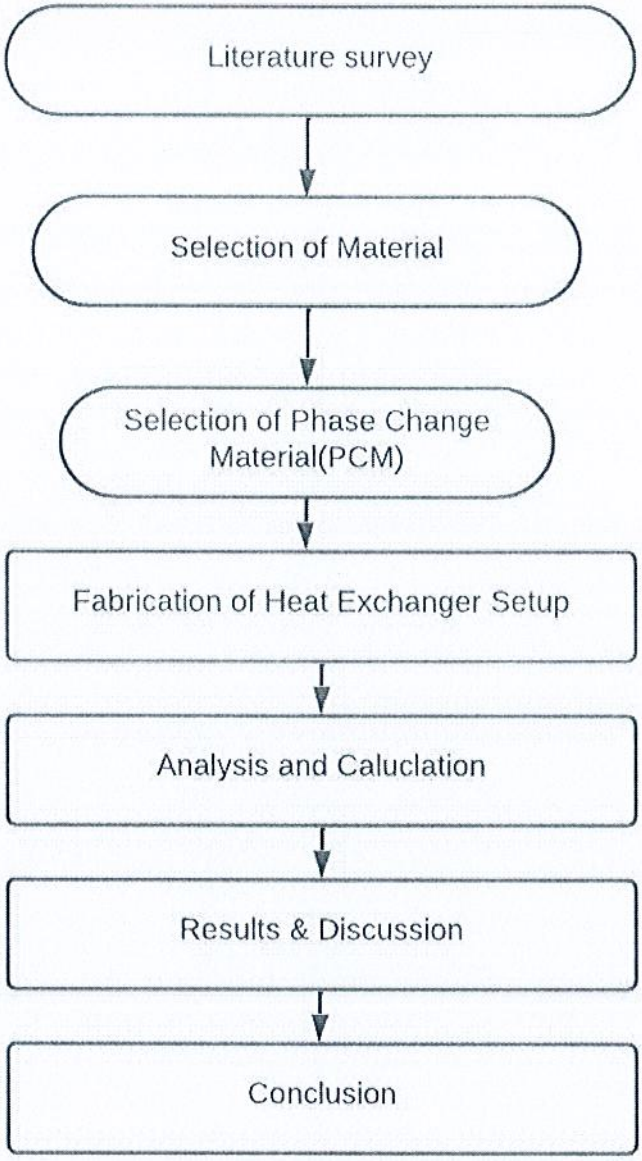
ABSTRACT

Researchers are often trying to find out the various renewable energy sources to continuously feed the growing energy demands as well as storing the generated energy with appropriate known technology.In line of the above, in order to store the energy, phase changing material (PCM) playing the major role.The phase changing materials exhibit better efficiency due to its energy storage capacity, and keep supplies constant thermal energy when need arises. Normally the characteristics of the phase change materials are charging, storing and following this, final step is discharging the heat to the selected medium through the phase changing materials and the same could be used for many applications starts from domestic to industrial spectrum. In this present study, the paraffin wax and hydrogenated vegetable oil have been used as the phase changing materials. To experimentally analyze the coefficient of thermal expansion of the phase changing material, the tube and shell type heat exchanger have been used.Similarly the efficiencies of the thermal energy storage (TES) capacity of the subjected material have been verified, with the intention of employ the same system for the applications like cold storage plant, refrigeration, domestic heating and automobile sectors.

METHODOLOGY



Social relevance and usefulness of the project

1. **Energy Efficiency and Conservation:** PCMs can be utilized in building construction and insulation to improve energy efficiency. By incorporating PCMs in walls, ceilings, and floors, buildings can absorb excess heat during the day and release it at night, reducing the need for heating and cooling systems. This, in turn, can lead to reduced energy consumption and greenhouse gas emissions, making PCMs an important tool in the fight against climate change.
2. **Thermal Comfort and Health:** PCMs can contribute to improving indoor thermal comfort by maintaining stable temperatures within buildings. This is especially important in regions with extreme weather conditions, as it helps to regulate indoor temperatures and reduce the risk of heat-related illnesses. Additionally, using PCMs in textiles or clothing can enhance comfort and prevent overheating or chilling during outdoor activities.
3. **Cold Chain Logistics:** In industries such as food and pharmaceuticals, maintaining the cold chain is crucial for preserving product quality and safety. PCMs can act as effective cold storage materials, providing a stable and consistent temperature environment during transportation and storage of perishable goods.
4. **Renewable Energy Storage:** PCMs can also be integrated into renewable energy systems to store excess energy generated during peak production times. For instance, in solar thermal power plants, PCMs can store thermal energy and release it when the sun is not shining, helping to bridge the gap between energy production and demand.
5. **Electronics Cooling:** Electronic devices generate heat during operation, and efficient cooling is essential to maintain their performance and prolong their lifespan. PCMs can be used in heat sinks to absorb and dissipate heat, improving the thermal management of electronic systems.
6. **Automotive Applications:** PCMs can be utilized in the automotive industry to regulate the temperature of electric vehicle batteries, improving their performance and extending their longevity.
7. **Disaster Management:** In regions prone to natural disasters, such as heatwaves or extreme cold, PCMs can be valuable tools to provide temporary relief and protection. They can be incorporated into shelters or garments to offer better thermal comfort for affected individuals.
8. **Water and Food Security:** In regions with limited access to clean water, solar-powered PCM systems can be used to purify water, particularly in rural areas. Additionally, PCMs can help maintain the temperature of food during storage and transportation, reducing food spoilage and waste.

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APPROVED BY AICTE, NEW DELHI, & AFFILIATED TO ANNA UNIVERSITY, CHENNAI
NAAC ACCREDITED INSTITUTION

ANNA UNIVERSITY COUNSELING CODE: 1101

PROPOSALS INVITED UNDER

INTERNAL SEED FUNDING SCHEME

1	Title of the Project	:	Block Chain based Electronic Voting Machine
2	Discipline under which the project is to be considered	:	
3	Name & Designation of the Principal Investigator	:	Mrs.G.Sulthana Begum ASSISTANT PROFESSOR
4	Postal Address of thePrincipal Investigator	:	AALIM MUHAMMED SALEGH COLLEGE OF ENGG,MUTHAPUDUPET,AVADI MUTHAPUDUPET,AVADI
5	Name, Designation and address of Co-investigator if any	:	Mrs.R.DAISY MERINA AMSCE
6	Contact Phone numbers (Office and residence)of PI &Co- PI along with,emailid	:	9677029695, sulthana begum.g@aalimec.ac.in 9442339245, daisymerina.r@aalimec.ac.in
7	Name of the Department in which the project will be carried out	:	Computer Science Engineering
8	Name of other Institution(s) Organization(s)involved in theProject	:	
9	Duration of the Project (Maximum 1 years)		8 months
10	Total Cost of the Project Proposal (details to be furnished in the prescribed format)	:	Rs 28,000/
11	An abstract, not exceeding one page describing the background, objectives, methodology & yearwise budget	:	To be enclosed separately
12	Details of the project proposal including the State-of-the art of the subject,the work already done in this area in India or elsewhere, and defining clearly the objectives and methodology and yearwise phasing of the project.	:	To be enclosed separately
13	Brief bio-data of the Investigator(s)	:	To be enclosed separately
14	Social relevance and usefulness of the project	:	To be enclosed separately

Place: AMSCE

Date: 06.08.21

Signature of the Investigator(s) [Sulthana Begum] [R.DAISY MERINA]

Signature of the Head of the Department
WithSeal
HEAD
Computer Science & Engineering
Aalim Muhammed Salegh
College of Engineering

Signature of the Head of the Institution
With Seal
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DETAILSOFBUDGETESTIMATE

Sl.No	Details	Total
A	i. **Equipment** (only project specificminorequipment)	Rs 28000/
B	**Consumables^**	-
	Chemicals/glasswares	-
	Fabrication/Service	-
	Testing	-
	OtherConsumable	-
	Total	Rs 28000/
C	**Travel**	-
D	**TotalofA+B+C+D**	
E	**Institutional overhead charge (Maximum of Rs.15000/per year)**	
F	**Total Cost of Project**	

Signature of the Investigator(s)

Signature of the
Head of the Institution

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME & INITIALS	G. SULTHANA BEGAM
DESIGNATION	Asst. Prof. & HOD
EDUCATIONAL QUALIFICATION	M.E., Ph.D
EXPERIENCE	18 years
DATE OF JOINING	08.02.2021
EMAIL ID	sulthanabshafi@aalimec.ac.in
AREA OF SPECIALISATION	Software Defined Networking

EDUCATIONAL QUALIFICATION

DEGREE	BRANCH / SPECIALIZATION	INSTITUTION	UNIVERSITY	YEAR
B.E	CSE	V.M.K.V Engg. College	Madras University	1997
M.E	CSE	Tagore Engg. College	Anna University	2006

PROFESSIONAL MEMBERSHIPS

INDIAN SOCIETY FOR TECHNICAL EDUCATION - Membership id : LM 134457

INTERNATIONAL ASSOCIATION OF ENGINEERS – Member Number : 304201

FDP ATTENDED

1. Attended a online FDP on "Microsoft Azure Fundamentals" conducted by ICT Academy on 16th to 18th Feb 2022.
2. Attended Short Term Training Programme (STTP) on "Cognitive Learning Framework for IoT "conducted by SRM Institute of Science and technology on 3rd

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to 8th August 2021.

3. Attended a FDP on "Practical Cyber Security "conducted by SRM Institute of Science and technology on 13th to 17th July 2020.
4. Participated in AICTE sponsored Staff development Programme on "Computational Intelligence" conducted by Sriram Engineering College from 1[8th] to 3[0th] April 2011.
5. Participated in Anna university sponsored Faculty development Programme on "Computer Networks and Networks Lab" conducted by Easwari Engineering College from 19th to 1st December 2007.

WORKSHOPS ATTENDED

1. Attended Online Work Shop on "Cyber attacks and Web application Security" conducted by Velammal Institute of Technology from 25th to 26th Feb 2022.
2. Attended a Work Shop on Data Science and Big data Analytics conducted by KCG College of Technology sponsored by ICTACT from 1st Nov 2016 to 5th Nov, 2016.
3. Attended a Work Shop on Grid and Cloud Computing conducted by Saveetha Engineering College from 16th June, 2016 to 17th June, 2016.
4. Attended a Work Shop on Web Programming and its Applications conducted by Jeppiaar Institute of Technology from2nd June, 2016 to 3rd June, 2016.
5. Attended a Work Shop on Advanced Methods in data Science and Big data conducted by ICT Academy at Vel Tech University from 1st Feb 2016 to 3rd Feb 2016.
6. Attended a Work Shop on "Cloud Computing "conducted by Anna University from 9th to 13th December 2013.
7. Attended a Work Shop on "Distributed Service Models "conducted by Sathyabama University on 29th and 30th October 2010.
8. Attended a Work Shop on "Wireless Sensor Networks "conducted by Easwari Engineering College on 28th and 29th September 2007.

SEMINARS/WEBINARS ATTENDED

1. Attended a Webinar on "How to write journal paper "conducted by chase technology on 18th to 23rd June 2020.
2. Attended a Webinar on "Io Tans Application"conducted by Jayaraj Annapackiam CSI College of Engineering on 10th June 2020.

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3. Attended a Webinar on "Intellectual property rights and basics of patent practice in India "conducted by St. Peter's College of Engineering and Technology on 16th May 2020.
4. Attended a Webinar on "How ML works in OPENCV Applications "conducted by Govt. College of Engineering Aurangabad on 18th May 2020.
6. Participated in Intl Conference on Intelligent Info tech conducted by DIST-Anna University from 1[1th] to 1[3th] December 2014.
5. Participated in the two day National Seminar on "Service oriented Architecture" conducted by R.M.K Engineering College on 1st and 2nd July 2011.
6. Participated in the two day National Seminar on "Advances in Information Security and privacy" conducted by Sriram Engineering College on 21st and 22nd December 2010.

PUBLICATION DETAILS

1. **G. Sulthana Begam**, M. Sangeetha & NR. Shanker, 2021 'Load Balancing in DCN Servers through SDN Machine Learning Algorithm', Arabian Journal for Science and Engineering, vol. 47, no.2, pp. 1423–143, ISSN : 2193-567X **(Annexure I). IF – 2.2**

2. **G. Sulthana Begam**, M. Sangeetha & NR. Shanker, 2022 'Load Balancing: DCN Servers based on Regression Analysis During Heavy and Frequent Messages', Wireless Personal Communication, https://doi.org/10.1007/s11277-022-09523-2, ISSN : 0929-6212 **(Annexure I). IF – 1.3**

3. **G. Sulthana Begam** and M. Sangeetha, "Software Defined Networking: Issues and Applications", **International Journal of Control Theory and Applications**, ISSN: 0974-5572, Vol. 10, No. 16, 2017

CONFERENCE DETAILS

1. Published a research paper in **"International Conference** on Sensing, Signal Processing and Security **"**, on **"Securing Data in Multi Cloud using Data Access Control",** conducted by St. Peter's College of Engineering and technology, on 7th May 2015, ISBN No.978-93-815836-4-7.

ACHIEVEMENT DETAILS

1. Reviewed Paper for COMPUTER JOURNAL 0010-4620 OXFORD UNIV PRESS

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2. Resource person for one day in Anna university sponsored Faculty development Programme on "JAVA Programming " on 28th June 2014.
3. Reviewed Papers for the International conference on 2017 IEEE Technological Innovations in ICT for Agricultural Rural Development (TIAR) organized by Easwari Engg College.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAME & INITIALS	DAISY MERINA R
DESIGNATION	Assistant Professor
EDUCATIONAL QUALIFICATION	B.E.., M.E..,
EXPERIENCE	2 months
DATE OF JOINING	27/06/2022
EMAIL ID	daisymerina.r@aalimec.ac.in
AREA OF SPECIALISATION	Machine Learning

EDUCATIONAL QUALIFICATION

DEGREE	BRANCH / SPECIALIZATION	INSTITUTION	UNIVERSITY	YEAR
B.E..,	Computer Science and Engineering	SCAD College of Engineering	Anna University	2011
M.E..,	Computer Science and Engineering	Sethu Institute of Technology.	Anna University	2022

PROFESSIONAL MEMBERSHIPS

Nil

NPTEL COURSES ATTENDED

Nil

FDP ATTENDED

1. IPR and Patent filing Strategies
2. Research methodology
3. Role of AI in Health care

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WORKSHOPS ATTENDED

Nil

SEMINARS/WEBINARS ATTENDED

Nil

PUBLICATION DETAILS

1. "IOT BASED AIR QUALITY MONITORING AND PLANT DISEASE DETECTION FOR AGRICULTURE",

   J. Automatic Control andComputer Sciences – SPRINGER NATURE, Accepted for publication.

CONFERENCE DETAILS

1." Implementing a text reading aid system for the visually impaired using raspberry – pi". International Conference on Frontiers in Smart ComputingSystem Technologies, Sep 2020, PP.203 – 209.

2. "INTELLIGENT IRRIGATION MONITORING AND CONTROL SYSTEM", 9 th DRDO Sponsored National Conference on Hi-Tech trends in Emerging Computational Technologies, PP.178-185.

ACHIEVEMENT DETAILS

Nil

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Block Chain based Electronic Voting Machine

ABSTRACT

Electronic voting or e-voting has been used in varying forms since 1970s with fundamental benefits over paper based systems such as increased efficiency and reduced errors. However, there remain challenges to achieve wide spread adoption of such systems especially with respect to improving their resilience against potential faults. Block chain is a disruptive technology of current era and promises to improve the overall resilience of e-voting systems. This paper presents an effort to leverage benefits of block chain such as cryptographic foundations and transparency to achieve an effective scheme for e-voting. The proposed scheme conforms to the fundamental requirements for e-voting schemes and achieves end-to-end verifiability. The paper presents details of the proposed e-voting scheme along with its implementation using Multi-chain platform. The paper presents in-depth evaluation of the scheme which successfully demonstrates its effectiveness to achieve an end-to-end verifiable e-voting scheme.

CERTIFICATE

This is to certify that **Mr.Abdul Thawaf, Mr.Arul Balaji ,Mr. Athiqur Rahman** is a bonafide final year student of P.G. Science / U.G. Engineering / P.G. professional courses of our college and it is also certified that two copies of utilization certificate and final report along with seminar paper will be sent to the Council after completion of the project by the end of April 2022.

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

INTRODUCTION

Elections are fundamental pillar of a democratic system enabling the general public to express their views in the form of a vote. Due to their significance to our society, the election process should be transparent and reliable so as to ensure participants of its credibility. Within this context, the approach to voting has been an ever evolving domain. This evolution is primarily driven by the efforts to make the system secure, verifiable and transparent. In view of its significance, continuous efforts have been made to improve overall efficiency and resilience of the voting system. Electronic voting or e-voting has a profound role in this. Since its first use as punched-card ballots in 1960's, e-voting systems have achieved remarkable progress with its adaption using the internet technologies. However, e-voting systems must adhere to specific benchmark parameters so as to facilitate its widespread adoption. These parameters include anonymity of the voter, integrity of the vote and non-repudiation among others. Block chain is one of the emerging technologies with strong cryptographic foundations enabling applications to leverage these abilities to achieve resilient security solutions. A Block chain resembles a data structure which maintains and shares all the transactions being executed through its genesis. It is primarily a distributed decentralized database that maintains a complete list of constantly germinating and growing data records secured from unauthorized manipulating, tampering and revision. Block chain CORE Metadata, citation and similar papers at core.ac.uk Provided by UWL Repository allows every user to connect to the network, send new transactions verify transactions and create new blocks. Each block is assigned a

cryptographic hash (which may also be treated as a finger print of the block) that remains valid as long as the data in the block is not altered. If any changes are made in the block, the cryptographic hash would change immediately indicating the change in the data which may be due to a malicious activity. Therefore, due to its strong foundations in cryptography, block chain has been increasingly used to mitigate against unauthorized transactions across various domains. Bitcoin remains the most distinguished application of block chain however researchers are keen to explore the use of block chain technology to facilitate applications across different domains leveraging benefits such as non-repudiation, integrity and anonymity. In this paper, we explore the use of block chain to facilitate e-voting applications with the ability to assure voter anonymity, vote integrity and end-to verification. We believe e-voting can leverage from fundamental block chain features such as self cryptographic validation structure among transactions (through hashes) and public availability of distributed ledger of records. The block chain technology can play key role in the domain of electronic voting due to inherent nature of preserving anonymity, maintaining decentralized and publicly distributed ledger of transactions across all the nodes. This makes block chain technology very efficient to deal with the threat of utilizing a voting token more than once and the attempt to influence the transparency of the result. The focus of our research is to investigate the key issues such as voter anonymity, vote confidentiality and end-to-end verification. These challenges form the foundation of an efficient voting system preserving the integrity of the voting process. In this paper, we present our efforts to explore the use of the block chain technology to seek solutions to these challenges. In partic n

is based on the Prêt à Voter approach and uses an open source block chain platform, Multi-chain as the underlying technology to develop our system. In order to protect the anonymity and integrity of a vote, the system generates strong cryptographic hash for each vote transaction based on information specific to a voter. This hash is also communicated to the voter using encrypted channels to facilitate verification.

EXISTING SYSTEM

Electronic voting has been an area of research focus for many years by using computing machines and equipment for casting votes and producing high quality and precise results in accordance with the sentiments of the participating voters. Various attempts have been adopted in practice to support election process. Initially computer counting system allowed the voter to cast vote on papers. Later on, those cards went through the process of scanning and tallying at every polling cell on a central server. Direct Recording Electronic (DRE) voting systems were put in place later on which were admired and acknowledged greatly by the voters in-spite of the resistance from computer scientists. If the voting system is well understood by the voters, the system's usability can be increased remarkably. DRE systems in particular have gathered a lot of successes in bringing the voters to use this technology. These systems work more or less in the same way as any conventional election system does. In the case of DRE, a voter begins his journey by going to their polling place and get their token to vote where he utilizes his token at the voting terminal to vote for his candidate. When the candidate selection

lure is completed, DRE systems present the final sel oter

before actually casting it (in case if the voter wants to change his opinion) and after the final selection, the ballot casting is complete

PROPOSED SYSTEM

The proposed e-voting system is based on the well-established Prêt à Voter e-voting approach identified. The system has been designed to support a voting application in the real world environment taking into account specific requirements such as privacy, eligibility, convenience, receipt freeness and verifiability. The proposed system aims to achieve secure digital voting without compromising its usability. Within this context, the system is designed using a web-based interface to facilitate user engagement with measures such as finger printing to protect against double voting. With a clear need to administer the voters, constituencies and candidates for constituencies, a user-friendly administrator interface is implemented to enable ease of access. Furthermore, the system allows all voters equal rights of participation and develops a fair and healthy competition among all the candidates while keeping the anonymity of the voters preserved. The cryptographic hash of the transaction (ID) is emailed to the voter as a proof that the vote has been casted which may later on be tracked outside the premises of the constituency.

PROJECT ARCHITECTURE

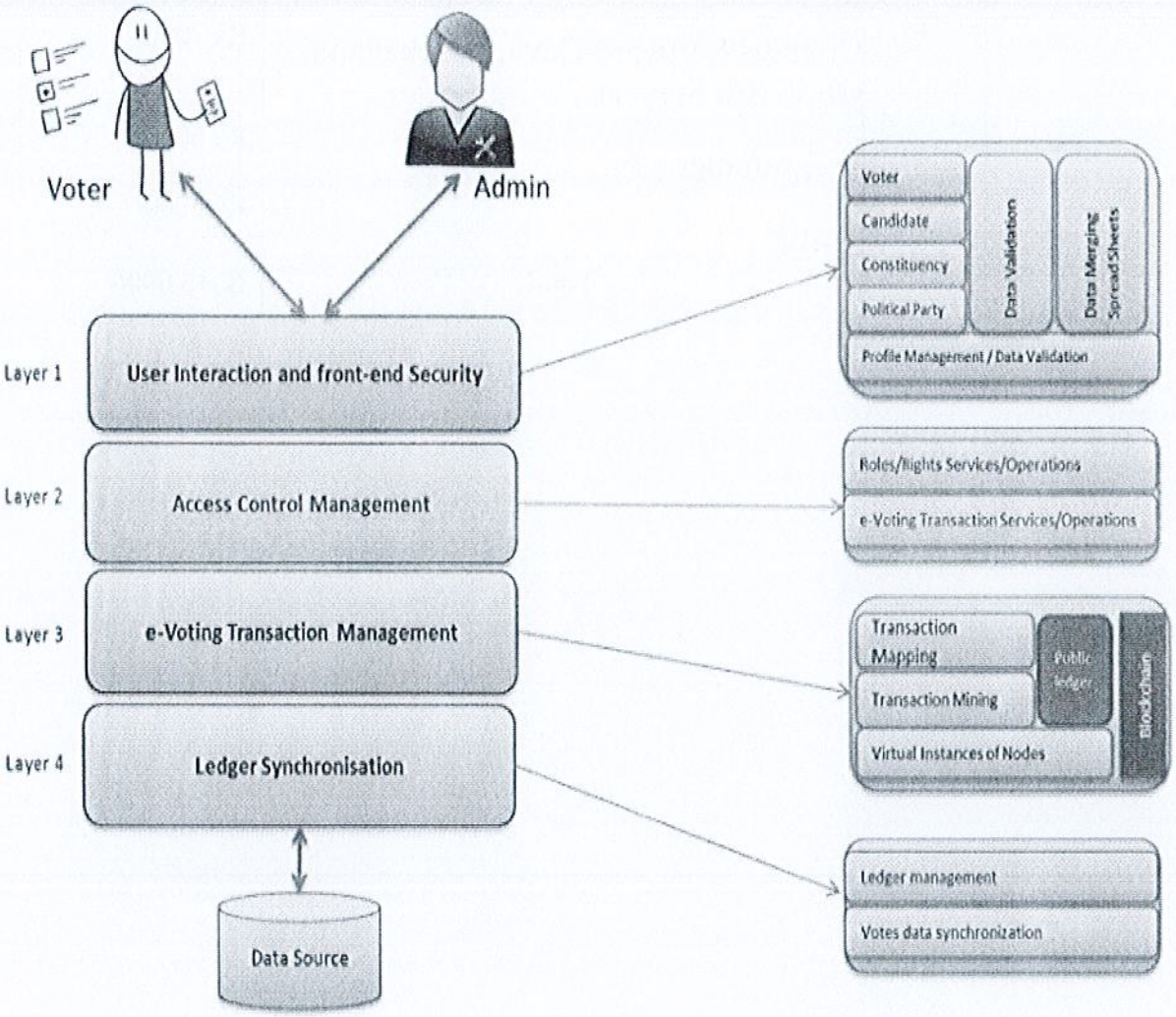

Fig. 1 Architecture for proposed e-voting system.

Budget:

S.NO.	REQUIREMENTS	PRICE
1	Codings/Software-(Java, Block chain, Glass fish Server)	Rs 7000/-
2	Programmer	Rs 5000/-
3	Tester	Rs 3000/-
	Total	**Rs15,000/-**

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Muthapudupet, I.A.F Avadi, Chennai – 600 055

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

PROPOSALSINVITEDUNDER

INTERNAL SEED FUNDINGSCHEME

1	TitleoftheProject	:	Manufacturing of low-cost wall paint by the inclusion of natural waste products to impart sustainability
2	Discipline under which the project is to be considered	:	Civil Engineering
3	Name&DesignationofthePrincipal Investigator	:	D. Zunaithur Rahman Assistant Professor
4	PostalAddressofthePrincipal Investigator	:	Aalim Muhammed Salegh College of Engineering Avadi, Tiruvallur District - 55
5	Name, Designation and address of Co-investigator if any	:	- -
6	Contact Phone numbers (Office and residence)ofPI&Co-PIalongwith,emailid	:	+91 80123 36482
7	NameoftheDepartment in whichthe project will be carried out	:	Civil Engineering
8	Name of other Institution(s) Organization(s)involvedintheProject	:	-
9	DurationoftheProject (Maximum 1 years)		6 Months
10	Total Cost of the Project Proposal (details to be furnished in the prescribed format)	:	24,000
11	An abstract, not exceeding one page describing the background, objectives, methodology & yearwise budget	:	To be enclosed separately
12	Details of the project proposal including theState-of-theartofthesubject,thework already done in this area in India or elsewhere, and defining clearly the objectivesandmethodologyandyearwise phasing of the project.	:	To be enclosed separately
13	Briefbio-dataoftheInvestigator(s)	:	To be enclosed separately
14	Socialrelevanceandusefulnessofthe project	:	To be enclosed separately

Place: AMSCE, Chennai

Date:29.07.2021

Signature of the Investigator(s)

Signature of the Head of the Department
With Seal

Dr. D. ZUNAITHUR RAHMAN, M.E.,Ph.D.,
Assistant Professor,
Department of Civil Engineering,
Aalim Muhammed Salegh College of Engineering,
Chennai - 600 055.

Signature of the Head of the Institution
With Seal

Prof. Dr. S. SATHISH
PRINCIPAL
AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
MUTHAPUDUPET, IAF-AVADI
CHENNAI 600 055

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

Muthapudupet, I.A.F Avadi, Chennai – 600 055

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

DETAILSOFBUDGETESTIMATE

SL. No.	Activity	Amount (Rs)
1	Preparation of Mould and Mortar Cube (40 Nos – 3Nos/Test)	3,000
2	Material Purchase (Castor oil, Red iron oxide, Fly ash, Polyurethane, Linoleate)	1,500
3	Equipment charges for paint preparation (Ball Mill, Ultrasound Water bath, Magnetic Stirrer)	6,000
4	Testing of Specimens (Including Properties, Microscopic and Fault Analysis)	12,000
5	Other Trial Expenses	1,500
	Total	**24,000**

Signatureoftheinvestigator(s)

Signature of the
HeadoftheInstitution

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COLLEGE OF ENGINEERING

Project Proposal

Degree / Branch	:	**B.E / Civil Engineering**
Title of the Project	:	**Manufacturing of low-cost wall paint by the inclusion of natural waste products to impart sustainability**
Guide Name and Address	:	**D. Zunaithur Rahman, M.E., (Ph.D).,** **Assistant Professor / Civil Engineering,** **Aalim Muhammed Salegh College of Engineering,** **Avadi – IAF, Chennai – 600 050** **8012336482 / zunaithur@gmail.com**

Abstract

Now a day the cost of paint is high and different variety of paints are required to improve each properties like a water, heat resistance, acid attack etc. Also most of the paints contain some toxic chemicals like a metal, dying agent etc. These chemicals are producing some ill effects to human beings and also the recently available paints contain full of chemicals. As an engineer we know all the construction material properties and their tests but we are concentrate less about paints and their tests. So we are planned to prepare a low cost paint with the partial replacement of some natural waste materials like flyash, polyurethane etc. and we will conduct the experimental tests like a water, heat, chemical resistance etc. as per Indian standard (IS) code provision.

Materials Used

Generally paint contains almost chemical products. In that paint we are using some natural waste materials and which fulfill the property of that chemicals. In which we are studied all the natural wastes and which must be replaceable one. The percentage replacement is taken out from the literature journals.

- Extender - Fly ash (Increases volume)
- Vehicle - Castor oil (Film forming)
- Thinner - Benzene (Dilution)
- Driers - Linoleates (Reduces drying time)
- Plasticizers - Polyurethane (PU) (Elasticity)
- Pigment - Red iron oxide (Colouring agent)

Mechanism and Synthesis of Paint

The mechanism involved in each type of paint depends on the materials may be used as a components of paint. But the used materials should react with one another and to form a neous product.

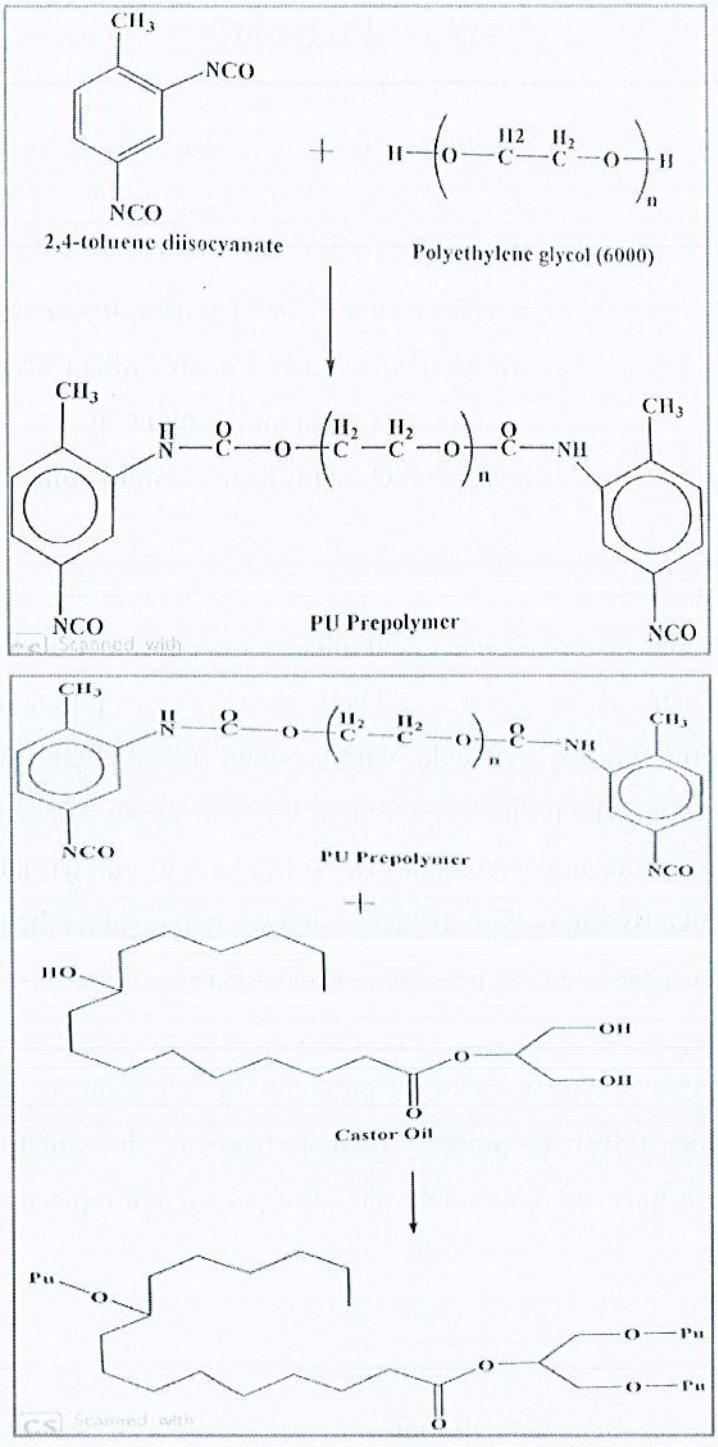

Fig. Synthesis of PU Prepolymer

Polyurethane prepolymer will prepared by reacting 1.5 equivalent of toluene diiosocynate and one equivalent of polyethylene glycol (ppg 6000) in a reaction kettle equipped with thermometer, nitrogen inlet and stirrer. The reaction will be carried out at 70°C in N_2 atmosphere and stirrer for 3hours. The temperature willbrought down to 40°C and dibutyltin dilaurate catalyst will be added and mixed with 30 min. At the end of the time PU prepolymer will be collected in a beaker.

Methodology

- ɛlection of alternative natural waste
- ɛeparation of mould for specimen

- Preparation of paint
- Preparation of specimen to test paint
- Tests conducted on paint
- Suggestion about paint

Preparation of Specimen and Paint

The specimens will prepare as per the Indian standard codes for the preparation of panels and which mention various panels like a steel, timber, mortar, etc. and we are selecting wall paint, so we choose the panel as mortar. The specimen mould is made by wooden frames with an internal size of 5cm x 5cm x 4cm, with top and bottoms are opened and all the four sides are closed. The specimen is made by cement mortar with 1:2 ratio and 0.5 water cement ratio. The size of specimen is 5cm x 5cm x 4cm as per Indian standard (IS 101.1.3).

The specimens which are required for testing are white washed and to make a surface as smooth as possible. After the application of primer coat the specimens are allowed to dry at specified period at room temperature. Now these specimens are ready to acquire a paint film over it.

Preparation of Paint

Quantity of Materials Required

- Castor oil - 100 gm
- Red iron oxide - 50 gm
- Fly ash - 3 gm
- Polyurethane - 5 gm
- Linoleate - 1 gm

Initially Pigment will mix with Fly ash by using ultrasonic sound wave water path at a specified period or up to the complete dispersion of both materials. At the end of mixing to obtain a red colour homogeneous compound. Then the castor oil is taken into other beaker and mixed with PU prepolymer by using magnetic stir at a temperature of 70°C. Then both compounds are mixed homogeneously by using ball mill at one day. After that one day period the paint is ready for application over specimen.

Test Conducted on Paint

- Water Resistance Test (IS 101.7.1)
- Salt Water Resistance Test (IS 101.7.2)
- Acid Resistance Test - HNO_3, HCl and H_2SO_4 (IS 101.7.2)
- Heat and Freezing Resistance Test (IS 101.7.3)
- Volatile Matter Test (IS 101.2.2)
- Hardness Test (IS 101.5.1)
- Drying Time Test (IS 101.3.1)

Test Results

Test	Physical Observation
Water Resistance Test	No colour change, No signs of detoriation, No damage in paint film
Salt Water Resistance Test	Fully and slightly damaged of one and two coated specimens, Salt deposit at the surface, Fully detoriated signs, Slight colour change, Turbid appearance in salt water
Acid Resistance Test - HNO_3	Colour changed to reddish, Turbid appearance in water, No signs of detoriation, No salt deposition
Acid Resistance Test - HCl	Fully damaged of one and two coated specimens, Salt deposit at the surface, Colour change occurs over the paint film, Fully detoriated signs
Acid Resistance Test - H_2SO_4	No colour change, No signs of detoriation, No damage in paint film, Retain plastic nature of paint film
Heat Resistance Test	No colour change, No signs of detoriation, No damage in paint film, Specimen loss ts temperature within 15 mins
Freezing Resistance Test	No colour change, No signs of detoriation, No damage in paint film
Volatile Matter Test	3.65% < 5% (max)
Hardness Test	Find from Rockwell Scale, 53.66 (two coat) > 40.33 (uncoat)
Drying Time Test	30 to 60 mins

Suggestion about paint from test results

Economically low cost paint prepared by using various alternative natural wastes and that paint will test against various environmental exposure conditions. The alternative natural waste as fly ash, PU and which fulfill the property of the original chemicals. Instead of lead material, polyurethane is used as a plasticizer. So the harmful effects due to lead are eliminated. Most of the paints are checked against various steel corrosion resistant properties, but this paint only checked against aggressive environment as wall paint. Cost of this paint is very low if testing results will be positive, so this paint may be useful to the peoples in low economical background.

Workplan and Project budget

SL. No.	Activity	Duration
1	Idea Formulation and Collection of Literature	6 Weeks
2	Preparation of Mortar cube and Paint	6 Weeks
3	Apply paint into specimen and Drying time	3 W

4	Testing of Specimens (10 Tests)	3 Weeks
5	Results and Discussion	3 Weeks
6	Preparation Seminar Report	3 Weeks
	Total	24 Weeks

SL. No.	Activity	Amount (Rs)
1	Preparation of Mould and Mortar Cube (40 Nos – 3Nos/Test)	1,000
2	Material Purchase (Castor oil, Red iron oxide, Fly ash, Polyurethane, Linoleate)	500
3	Equipment charges for paint preparation (Ball Mill, Ultrasound Water bath, Magnetic Stirrer)	2,000
4	Testing of Specimens (Including Properties, Microscopic and Fault Analysis)	4,000
5	Other Trial Expenses	500
	Total	**8,000**

References/Publications of study on similar/related Projects:

1. IS 101-1-3 (1986): Methods of sampling and test for paints, varnishes and relatedproducts, Part 1: Test on liquid paints (general and physical), Section 3: Preparation of panels [CHD 20: Paints, Varnishes and Related Products].
2. IS 101-2-2 (1986): Methods of sampling and test for paints, varnishes and related products, Part 2: Test on liquid paints (chemical examination), Section 2: Volatile matter[CHD 20: Paints, Varnishes and Related Products].
3. IS 101-3-1 (1986): Methods of sampling and test for paints, varnishes and related products, Part 3: Tests on paint film formation, Section 1: Drying time [CHD 20: Paints, Varnishes and Related Products].
4. IS 101-3-2 (1989): Methods of sampling and test for paints, varnishes and related products, Part 3: Tests on paint film formation, Section 2: Film thickness (CHD 20:Paints, Varnishes and Related Products).
5. IS 101-5-1 (1988): Methods of sampling and test for paints, varnishes and related products, Part 5: Mechanical test on paint films, Section 1: Hardness tests [CHD 20: Paints, Varnishes and Related Products).
6. IS 101-6-2 (1989): Methods of sampling and test for paints, varnishes and related products, Part 6: Durability tests on paint films, Section 2: Keeping properties [CHD 20: Paints, Varnishes and Related Products].

7. IS 101-6-4 (1991): Methods of sampling and test for paints, varnishes and related products, Part 6: Durability tests on paint films, Section 4: Degradation of coatings (pictorial aids for evaluation) (CHD 20: Paints, Varnishes and Related Products) .
8. IS 101-6-5 (1997): Method of sampling and test for paints, varnishes and related products, Part 6: Durability test on Paint films, Section 5: Accelerated weathering test [CHD 20: Paints, Varnishes and Related Products].
9. IS 101-7-1 (1989): Methods of Sampling and Test for Paints, Varnishes and Related Products, Part 7: Environmental Tests on Paint Films, Section 1: Resistance to water [CHD 20: Paints, Varnishes and Related Products].
10. IS 101-7-2 (1990): Methods of sampling and test for paints, varnishes and related products, Part 7: Environmental tests on paint films, Section 2: Resistance to liquids [CHD 20: Paints, Varnishes and Related Products].
11. IS 101-7-3 (1990): Methods of sampling and test for paints, varnishes and related products, Part 7: Environmental tests on paint films, Section 3: Resistance to heat (CHD 20: Paints, Varnishes and Related Products).
12. Pradeep sambyal, Gazala Ruhi, Hema Bhadari, Sundeep K.Dhawan, Advanced Anti Corrosive Properties of Poly (Aniline-co-o-toluidine)/Fly ash Composite Coatings. Surface and coating technology 272 (2015) 129-140.
13. Suman Thakur, Niranjan Karak, Castor Oil based Hyperbranched Polyurethanes as Advanced Surface Coating Materials. Progress in Organic Coatings 76 (2013) 157-164.

2022-23

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AVADI - IAF, CHENNAI-55

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH AND DEVELOPMENT (R&D)

S.No	Name of the Faculty	Title of the Project	Amount Sanctioned	Status of the Project
1.	Dr.N.R.Shanker	Engine Exhaust Gas Analyser	94,993	Completed

E. Shanker 8/4/23
Prepared by

6/4/23
Verified by

HEAD
Computer Science & Engineering
Aalim Muhammed Salegh
College of Engineering

8/4/2023
Approved by
Prof. Dr. S. SATHISH
B.E.,M.E.,Ph.D.,
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COLLEGE OF ENGINEERING
MUTHAPUDUPET, IAF-AVADI,
CHENNAI - 600 055

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Investigators

1. Dr.N.R.Shanker

2. G.Sulthana Begam

Hardware and Software Module:

Module 1

Selection of Microcontroller and Transducers

Component	Qty
Arduino Uno	1
Oxygen sensor model AO-03	2
DFRobot Fermion: MEMS Gas Sensor	1
ACD10 infrared carbon dioxide sensor	2
Winsen MP-4-24V CH4 Methane natural combustible gas sensor	1
MQ-8 Hydrogen Gas sensor Module	1

Module 2

Acquire, Interface Arduino Uno and Transducers. Testing of hardware setup for consistency under different conditions.

Module 3

Determining IDE and Programming language for Arduino UNO.

Module 4

Development and Testing of Python program for conversion of analog data from transducers to digital data and show visually as graph.

PROJECT ASSESSMENT AND EVALUATION:

Meeting 1: 15/8/2022

Requirement and specification for Engine Gas Exhaust analyser.

Engine Gas Exhaust Analyser detects the level of Gas namely carbon di oxide, Hydro carbon, nitrogen oxide, carbon monoxide, oxygen, and smoke in exhausted smoke emitted from petrol engine. The gas value is to be shown graphically on a computer.

Meeting 2: 19/9/2022

Deliberation on Hardware and Software to be used for Engine Gas Exhaust Analyser.

Arduino Uno microcontroller, and table 1 shows gas detected by respective transducers. Arduino Uno microcontroller program with python to convert analog values from transducer to digital values. The digital values show graphically on computer.

Table 1: List of gas sensed by respective transducers.

Gas	Transducer
Oxygen	Oxygen sensor model AO-03
Nitrogen oxide	DFRobot Fermion: MEMS Gas Sensor
Carbon di oxide, Carbon monoxide	ACD10 infrared carbon dioxide sensor
Smoke	Winsen MP-4-24V CH4 Methane natural combustible gas sensor
Hydro carbon	MQ-8 Hydrogen Gas sensor Module

Meeting 3: 15/10/2022

The Arduino Uno microcontroller was programmed with python program and transducers were interfaced to analog in pins of microcontroller. The completed product is shown in figure 1.The sensed gas show graphically as line graph on computer as in figure 2.

Figure 1: Engine Exhaust Gas Analyser.

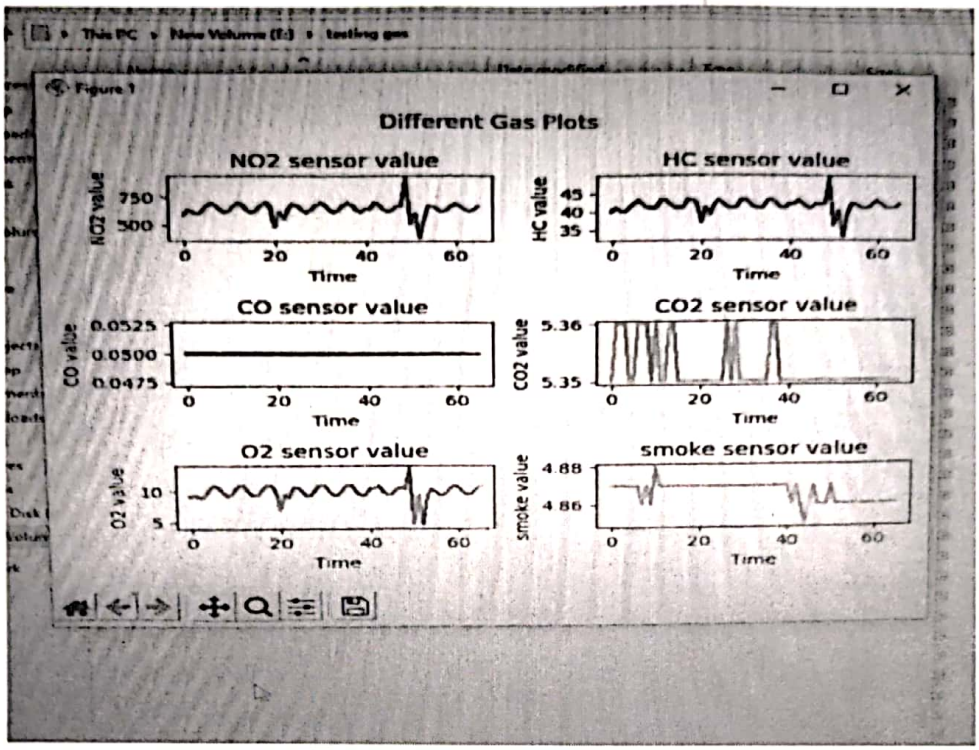

Figure 2: Sensed gas from engine exhaust

punjab national bank

ए.एम.एस. कॉलेज, मुथापुडुपेट, आवडी, चेन्नई
AMS College, Muthapudupet, Avadi, CHENNAI - 600055
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(14)

Time and Material Invoice
JOB: Exhaust Gas analyzer

Date: 15/10/2022
Invoice #: Ex/Gas/18

From:

Mrs. S. Tamilselvi,
Manager-Embedded Systems,

CHASE RESEARCH & DEVELOPMENT SOLUTIONS,
No.17A, Plot No.13, Vasupuja Apartments
Block C, II-Main Road, J.B.Estate, Avadi,
Chennai-600 054. www.chasetechnologies.org
e-mail: nr_phd@yahoo.co.in

Bill To:

Aalim Muhammed Salegh Polytechnic College,
Muthapudupet, Avadi, IAF,
Chennai-600 055.

Totals		
Material	Labor	Invoice Total
₹ 5,952.00	₹ 90000	₹ 95952

Material Description	Quantity	Cost Per Item	Total
Oxygen Sensor Model AO-03	2		₹ 2,098.00
DFRobot Fermion: MEMS Gas Sensor	1		₹ 799.00
ACD10 infrared carbon dioxide sensor	2		₹ 2,598.00
Winsen MP-4-24V CH4 Methane Natural Combustible Gas Sensor	1		₹ 249.00
MQ-8 Hydrogen Gas Sensor Module	1		₹ 109.00
	Subtotal: ₹ 5,853.00 (inclusive of GST) Shipping: ₹ 99.00 via (Bluedart Air) Materials Total:		₹ 5,952.00

Project Member Description	Month	Rate/Month	Total
Project Leader	2	25000/Month	₹50000
Programmer	2	15000/Month	₹30000
Technician	2	5000/Month	₹10000

Bank Details

N.R.Shanker & S.Tamil Selvi
A/c No- 547802010005967
Ifsc code- UBIN0554782
BRANCH -AVADI ---- (A/c: - S.B)
Bank Name-Union Bank of India

S. Tamilselvi

amil Selvi)

Project member payment Total: ₹ 90000

28/10/22

Thank you for your business!

Invoice Total: ₹ 95952

Received good working condition.

27/10/2022

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Successful!!

Money sent to XXX47286 successfully!

Amount

₹ 10,000

From

043 100710 400117

To

29800101000 47286

Beneficiary Name

principal

IFSC Code

PUNB0491900

Transaction Date

04/03/2022 07:28 PM

saction ID

Receipt

№ 2048247469

DATE:
26-Feb-2022, 10:06 pm

CUSTOMER #:
464610373

BILL TO:
jaya solarpower
#126, Ground floor, 4th Avenue, Sundar Nagar, Guindy,
Chennai, Tamil Nadu 600032,
India
+91.9688891073

PAYMENT:
Visa ••••

	₹604.54
Previous Balance	
	₹604.54
Received Payment	
	(₹604.54)
Balance Due (INR)	
	₹0.00

Term	Product		Amount
1 yr	.COM Domain Registration A1		₹499.00
	jayaasolarpower.com 1	₹899.00	
	Discount	-₹400.00	
1 mo	Website Builder Free Trial A2		₹0.00

Subtotal	**₹499.00**
Taxes	₹92.22
Fees	₹13.32
Total (INR)	**₹604.54**

REFERENCE

Taxes ₹92.22

A GD US India ₹92.22
14455 N. Hayden Rd.,
Suite 219,
Scottsdale, Arizona 85260,
United States
IGST: 9917USA29016OS6

A1	Net	₹499.00	CGST (9.00%)	₹46.11	
			SGST (9.00%)	₹46.11	
A2	Net	₹0.00	CGST (0.00%)	₹0.00	
			SGST (0.00%)	₹0.00	

Fees ₹13.32

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STUDENT PROJECTS SCHEME 2022-2023

LIST OF APPROVED PROJECTS

S.No	Guide Name & Institution	Title of the Project	Students Name	Project Code	Amount Rs.
CHEMICAL ENGINEERING					
565.	Mr.Selvaprakash P Assistant Professor Dept ofChemical engineering Erode Sengunthar Engineering College, Perundurai Erode - 638 057	Recovery of sodium sulphate and sodium carbonate salts from textile effluent	Santhoshkumar S Johnson R Muhammed Sayis	CHE-031	7500/-
566.	Mr. Raj Kumar A Assistant Professor Dept ofChemical Engineering Hindusthan College of Engineering And Technology Coimbatore - 641 032	Preparation of bio pickering emulsion liquid membrane for selective extraction of ciprofloxacin with the help of Fe_3O_4	Gokul Jothi R Mohan Raj M Gokulasezhiyan S	CHE-052	7500/-
567.	Dr.Kavitha.S Professor and Head Dept of Petrochemical Engg. JCT College of Engineering and Technology, Pichanur Coimbatore - 641 105	Development of advanced nanotech steel using modern and effective nanotechnology	Mahesh Kannan.M Kamalakannan.G Mayur Mangesh Ghatkar.M Dhanasekaran.S	CHE-066	7500/-
568.	Dr. Karthik A Associate Professor Dept of Nano Science and Technology K S Rangasamy College of Technology Tiruchengode - 637 215	Orderly arranged bismuth oxide nanosheet/graphitic carbon nitrate (Bi_2O_3/g-C_3N_4) composite as electrode material for supercapacitor applications	Naren Vidaarth T M Jagannathan M	CHE-071	7500/-
569.	Mr.Raghulnath D Dept of Mechanical Engineering K.Ramakrishnan College of Technology, Trichy – 621 112	Thermal behaviour analysis in heat pipe with composite insulation	Athavan E Dhinesh R Dony Kingsly A Gokul S	CHE-075	7500/-
570.	Dr. Aruna Janani V Associate Professor and Head,Dept of Chemical Engineering Kalasalingam academy of Research and Education Krishnankoil- 626 126	A novel jacketed tumbling homogeneous powder mixer for hazard prevention in fireworks	Boligarla Vinay Prabhu M	CHE-078	7500/-
571.	Dr. Baskaran.R Associate Professor Dept of Bio Technology Kamaraj College of Engineering & Technology Virudhunagar -625 701	Development of high performance high voltage insulator for power transmission line from blends of EPDM rubber/ethylene vinyl acetate copolymer containing silica	P.Raakesh Kumar D.Muhammed Aashik D.Vignesh	CHE-079	7500/-

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907.	Kavitha R Assistant Professor Dept. of ECE Vivekananda College of Engineering For Women Tiruchengode – 637 205	Optimized and controlled charging of solar panel	Gowsika R S Malathiga D Kanimozhi K Kasthuri M	EEE-2216	7500/-
908.	Dr.G.Kalaiarasi Associate Professor Dept. of ECE VSB Engineering College Karur-639 111	Effective development of E-commerce website for artisans community peoples	Shooriya Prabhaa.S Sakthi Kowshal.D Vidhya.P Tamizhanangu.S	EEE-2248	7500/-
MECHANICAL ENGINEERING					
909.	Mr.G.Pradeep Kumar Assistant Professor Department of Mech. Engg. AVS College of Technology Chinnagoundapuram Salem-636 106	Fabrication of electro chemical micro machining test apparatus	S. Santhosh A. Manimaran S. Sasikumar S. Rahul	EME-0001	7500/-
910.	Mr.A.Vignesh Moorthy Pandian Assistant Professor Department of Mech. Engg. AAA College of Engineering and Technology Amathur, Sivakasi-626 005	Affordable and water conservation dish washer	M. Vigneshwaran A. Subhas K. Thazhaieswaran	EME-0002	7500/-
911.	Mr.P.Muniraja Chandra Assistant Professor Department of Mech. Engg. Aalim Muhammed Salegh College of Engineering, Chennai- 600 055	Design and development of portable plastic chip crusher	A. Muhammad Mushthaq	EME-0003	7500/-
912.	Mr.K.Vijayakumar Assistant Professor Department of Mech. Engg. Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation Paiyanur- 603 104	Design and fabrication of motorized exoskeleton arm	Brajesh Kumar Rahul Kumar Vikash Kumar Singh	EME-0006	7500/-
913.	Dr.D.Madhesh, Professor Department of Mech. Engg. Academy of Maritime Education and Training AMET University Kanathur, Chennai- 603 112	Less expensive desalination by unconventional method	Palan Danish Ravi Amod Thakre	EME-0010	7500/-
914.	Dr.Pandiyarajan Head of the department Department of Mechatronics Engineering Agni College of Technology Chennai- 600 130	Development of automated smart ration vending machines using -TNPDS family card	B. Rohith N. Vidhyasagar V. Bhuvanesh	EME-0017	7500/-
915.	Mr.M.Selvaraju, Assistant Professor Department of Mechanical Engg Akshaya College of Engg. and Tech., Coimbatore- 642 109	360^{o} Rotating conveyor	S. Akash P. Manojkumar VD. Nobil M. Pravinkumar	EME-0029	7500/-

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