

Production of bioplastic from vegetable waste	Mr.K.Cholapandian	Biotech	2017	0.08	6 Month	TNSCST	Government
PMKVY	Dr.S.Arun / Dr.P.Dhasarathan Mr Ramesh Ms.Sornalatha	ECE/ Biotech/EEE/ CSE	2017	19.60	1 year	AICTE	Government
ID Card APP	Dr.S.PadmaPriya	CSE	2018	0.15	3 Months	iSpark Smart Solutions	Non Government
Remote sensing of patients using power line and visible light communication	Dr.S.Krishnakumar	EEE	2016-2017	0.08	1 year	TNSCST	Government
Design and Implementation of POTHOLE detection system	Dr. S.Kalaimuruagn	EEE	2016-2017	0.08	1 year	TNSCST	Government
Entrepreneurship Awareness Camp (EAC)	Dr. Jayaraman	MECH	2017-18	0.20	1 year	DST-NIMAT	Government

# **1. Production of bioplastics from vegetable waste**





தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்  
**TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**  
(Established by Government of Tamilnadu)  
Directorate of Technical Education Campus, Chennai - 600 025  
Ph : 044-22301428, Telefax 044-22301552 [www.tanscst.nic.in](http://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/2017-2018

27 01 2018

To

The Principal  
Prathyusha Engineering College  
Thiruvallur-602 025

Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2017-2018 – approval  
intimation–grant release- reg.

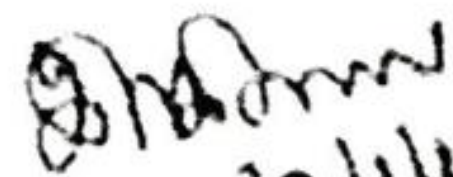
With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. Kindly read and ensure adherence to the terms and conditions such as submission of UC and seminar paper in time.

Kindly find enclosed here with 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,

  
30/1/18  
Member Secretary.

Encl: a) Terms & Conditions (T&C)

b) Format of Utilisation Certificate (UC)

c) Cheque for Rs.17000/- No: 322523 dt: 27.1.2018

Copy to: The individual guides.





# TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

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DOTE Campus Chennai 600 012

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

Ref: TNSCST/SPS/AR/2017-2018/

To: Mr.K.Cholapandian  
Associate Professor  
Dept of Biotechnology  
Prathyusha Engineering College  
Thiruvallur-602 025

Sir/Madam.

Sub: TNSCST Programme 'Student Project Scheme' – Conduct of Seminar–Cum–Exhibition – Invitation extended – reg.

With reference to the above, the Seminar-cum-Exhibition has been arranged on **20<sup>th</sup> and 21<sup>st</sup> JULY 2018** at National College, Tiruchirapalli-620001. I request you to kindly ensure that one of the student who did the project come to Tiruchirapalli and present the findings of the project in the Seminar. Models pertaining to the project can be exhibited and share your innovative ideas with others.

## The following points may please be noted:

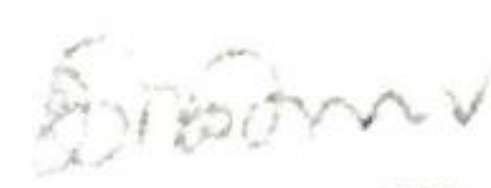
- The Student must report to Dr.Mohammed Jabbar, Associate Professor, Department of Biotechnology, National College, Tiruchirapalli-620001.(Contact details: 9786425226 Email: [mohamedjaabir@nct.ac.in](mailto:mohamedjaabir@nct.ac.in))
- Accommodation and food will be provided from the evening of 19<sup>th</sup> July 2018 till the evening 21<sup>st</sup> July 2018 in the college hostel.
- The students are requested to bring the required medicines (if any) and other personal needs for their stay at hostel.
- Only one student will be provided boarding and lodging in the College hostel. No charges need to be paid. **Second sleeper class train fare / Actual Bus (Govt. Bus) fare** (Up & Down) from the Place of study to National College, Tiruchirapalli will be provided for one Student of each project.
- The student must be present on both the days (i.e) **20<sup>th</sup> and 21<sup>st</sup> JULY 2018**.
- The student should make the oral presentation within the allotted time of 10 minutes and LCD Projectors will be provided.
- Request for specific requirement for display of project must be made in advance to the Co-ordinator.
- Certificate will be given to those who have done the project and are present at the venue.
- Prizes will be given to the best presentation and best exhibit.

Those who have not submitted the Utilization Certificate so far, kindly arrange to send the same immediately without any further delay.

I request you to co-operate in making this seminar-cum-exhibition a successful academic event.

Thanking you,

Yours faithfully

  
Member Secretary



## **PROJECT REPORTON**

# **PRODUCTION OF BIOPLASTICS FROM FOOD WASTES-BANANA PEELS AND POTATO STARCH**

**DOMAIN: ENVIRONMENT AND SUSTAINABILITY**

### **RESEARCHERS:**

**ANITHA A. D**

**ARTHI S**

**GAYETHRI.S**

**KEERTHANA K**

**PRATHYUSHA ENGINEERING COLLEGE.**

**Supervisor**

**Mr. K. Chalapandian**



## **BACKGROUND STUDY:**

The world's consumption and demand for plastics is growing day to day. In India, the average plastic consumption is 2Kg per year. In US, each American uses around 80 to 90 Kg of plastic annually. Even agriculture, the backbone of economy is also using plastics as a part of modern methods for packaging instead of using naturally present polymers like amber and lac. The normal conventional plastic that is being used, are nothing but the byproducts of petroleum refineries. The major components of these conventional plastics are the long chain of hydrocarbons which are monomers and then bound together to form polymers. These plastics do not get degraded or degrades after a long period of time.

## **PROBLEMS FACED:**

1. Plastic recycling,
  2. Land fill disposal,
  3. Incineration or burning releases greenhouse gases
- There by these problems cause an adverse effect on the biodiversity, this affects land, water, and marine animals.
  - To overcome these problems, the bio plastics are produced. In contrast to the normal conventional plastics, these are plastics that are made from renewable sources, include food waste that are bio based and occur as natural polymers. Bio plastics can replace 100%of the fossil fuel content found in conventional plastics.

## **ADVANTAGES OF BIO PLASTICS:**

- Eco friendly
- It requires less time to degrade
- Low energy consumption
- Environment protection.

## **APPLICATIONS:**

- Bio packaging
- Food packaging
- Soft feel bottles for commercial products.



**ABSTRACT:-**

Bio plastics using bio-based polymers (starch) can be used as a substitute for the normal conventional plastics. The conventional plastic provides functions that cannot be economically replaced by other materials. Conventional plastics are petroleum-based polymers. These kind of plastics leads to the requirement of more fossil fuels as well as produces more green house gases that totally leads to the pollution of the environment .Moreover some conventional plastics takes thousands of years to degrade some are not degradable even after that time .In order to minimize the use of conventional plastics ,the bio plastics can be produced .This bio plastics production involves usage of food wastes as source .The food containing the bio molecules can be easily bio degraded, so that the bio plastics synthesized from the food wastes should also be bio degraded .According to BPI (Biodegradable products institute), a biodegradable material is one that can be broken down by microbes at environmental conditions. When the bio plastics are used and thrown away, they can be utilized by microbes and degraded. These degraded materials can also act as a bio manure and helps plants grow better. So this project deals with the synthetic method to produce bio plastics. In this project we have used banana peels and potato starch to produce bio plastic.

**KEYWORDS:**

Bio plastics, Conventional plastics, microbes, food waste.

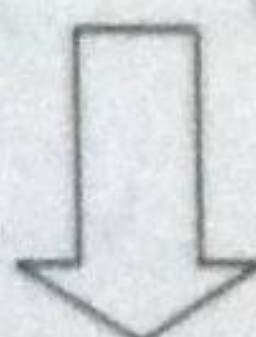
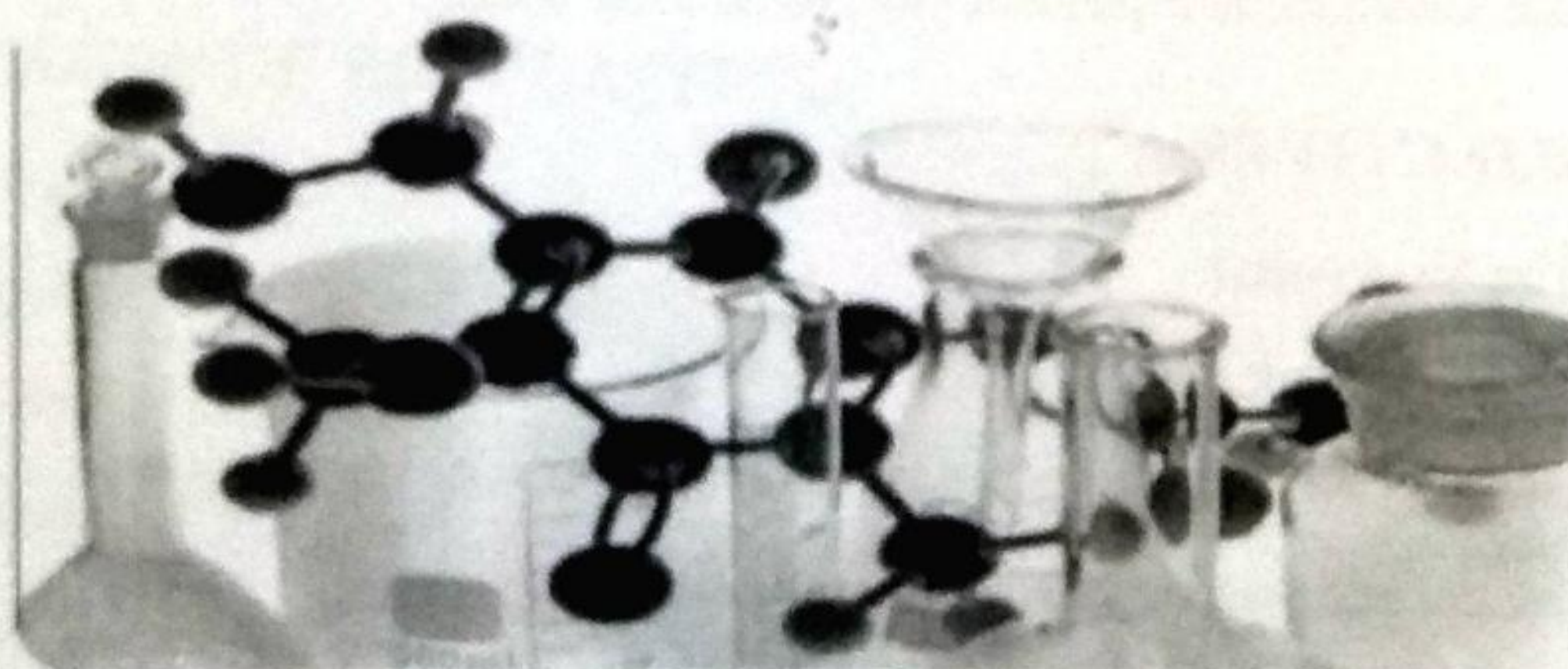
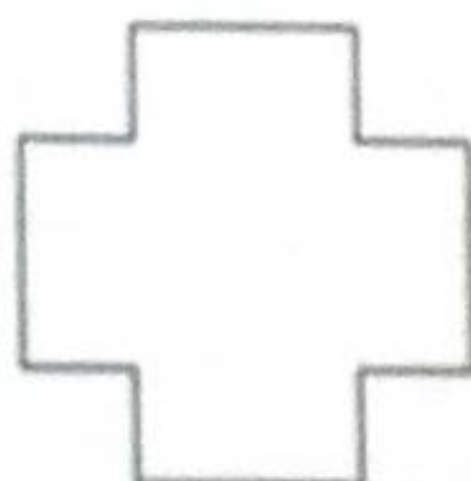
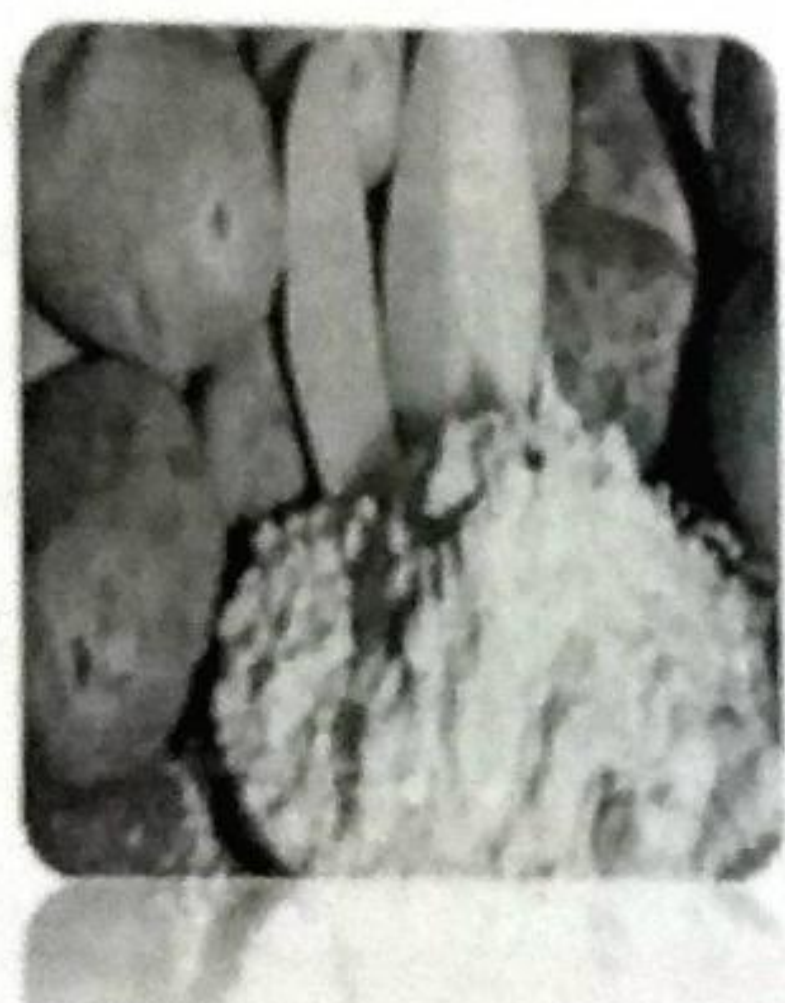
**PROJECT OBJECTIVES:**

- To utilize food waste
- To create bio plastics from food wastes
- To create plastics that can be biodegraded naturally by microbes
- To create an alternative plastics consumption.
- To develop sustainable use of bio plastics.
- These measures can drastically reduce the amount of waste on Earth.



## INTRODUCTION:

The conventional plastic usage is the major threat to the future. With the rise in environmental pollution levels, it is becoming essential to find a viable alternative to the traditional plastics. The aim of this project is to create bio plastics, the main criteria being environmental friendly in terms of both usage and materials. This report presents the threat caused due to normal plastics and also the description of the selection of sources, production process of bio plastic, the methodology adopted, and principle of the process. The produced bio plastics were also analyzed and the future aspects were discussed.



**BIOPLASTICS**

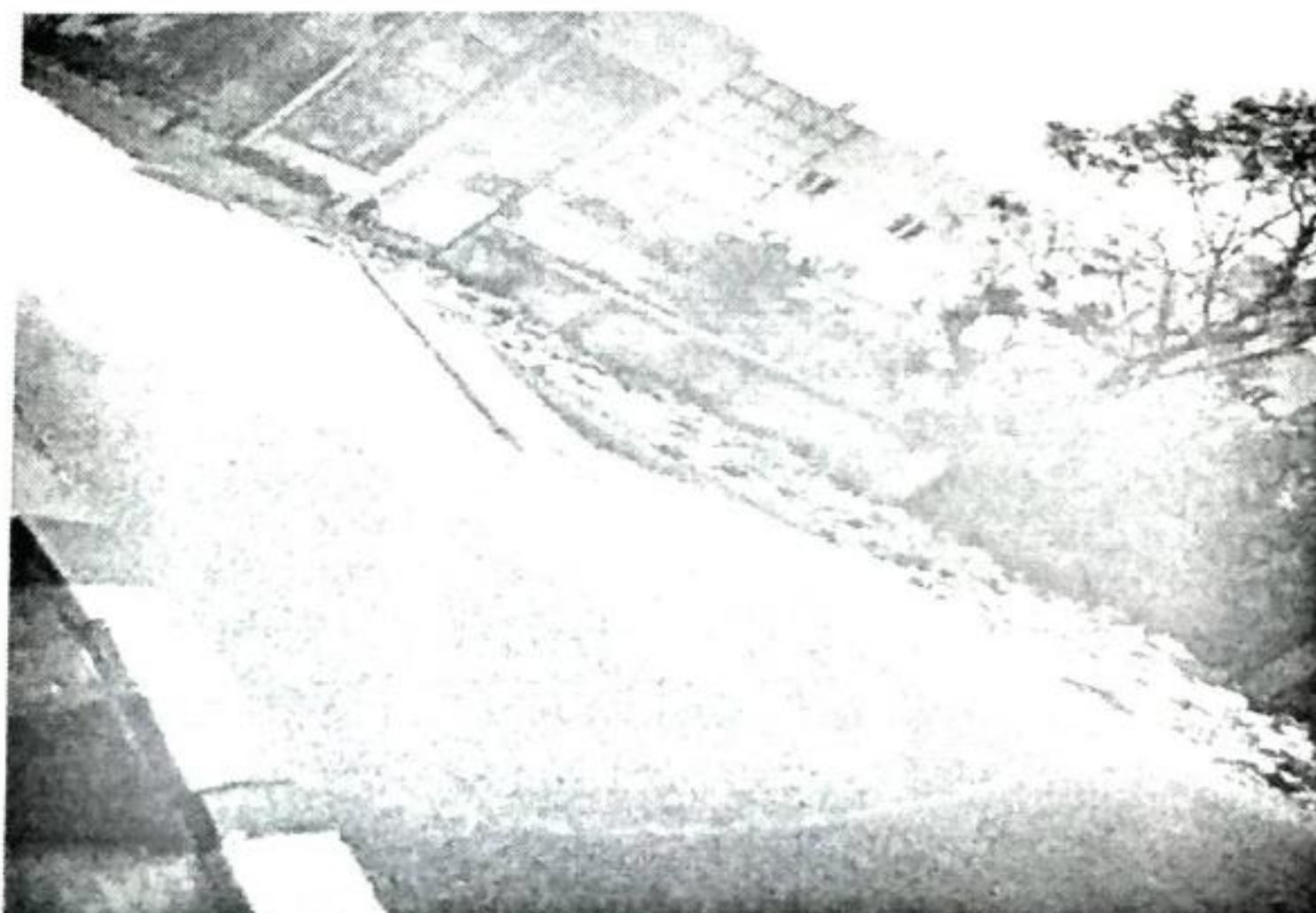
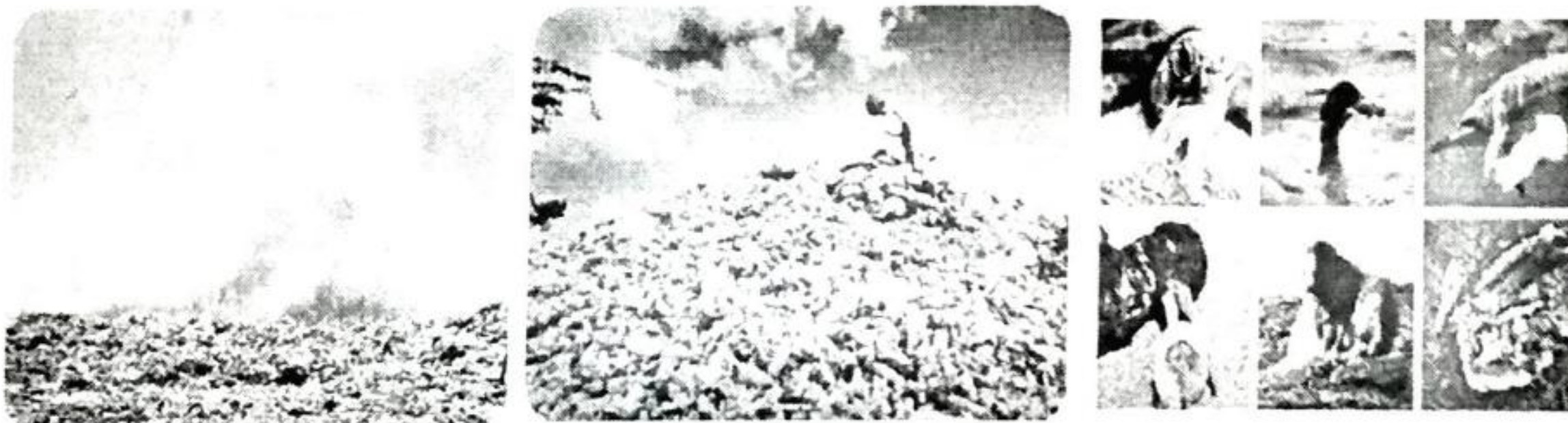


## CURRENT SCENARIO STUDIED IN INDIA:

India per capita consumption of plastic in a year is around 9.7 kg. The plastic litter situation in India is so bad that plastics are more serious threats to future generation. Plastic bags are difficult and costly to recycle and most end up on landfill sites. These land fill sites thereby cause adverse impact on the environment. Thereby, we should reduce the consumption of traditional plastics and switch to alternate plastics.

## CASE STUDY IN CHENNAI:

- The land fill sites and the road side plastic litters were found everywhere.
- The places near the landfill sites are highly subjected to risks.
- The landfills are meant to burn periodically, which causes the pollution in that area and also cause release of green house gases.
- The people residing at those areas are highly prone to vector borne diseases, respiratory disorders, skin diseases, and other risk factors.
- Some plastics are dumped in the water resources there by the animal consumes those and gets affected.





**SOURCE:****MAJOR FORM OF POLYMER SOURCE: STARCH****ANALYSIS: DETERMINATION OF STARCH QUANTITATIVELY AND QUALITATIVELY.****QUALITATIVE TEST FOR STARCH:****SOLID SAMPLE:**

1. Peel off the skin of any vegetables e.g. potato and banana peel as these are often impermeable. Use a clean spatula to remove samples of powdered food. Avoid cross contamination with other foods.
2. Add a few drops of bench iodine solution potassium to a piece of solid food
3. The color change to intense blue indicates the presence of starch.

**QUANTITATIVE TEST FOR STARCH:****DETERMINATION OF POTATO STARCH QUANTITATIVELY:**

A raw potato was weighed (197g), chiseled, and then processed in an electric "juicer" to produce potato juice. The juice was collected in the separating flasks the juice had high solids content and readily separated into liquid and solids upon standing. Solids formed in two layers: a dense white solid (starch) and a brown layer (likely to be cell wall components) of lesser density. The wet weight and dry weight were determined. The difference was used to determine the amount of starch in potato. (Kurt R .Mathews et.al).

**COMPOSITION OF BANANA PEELS:**

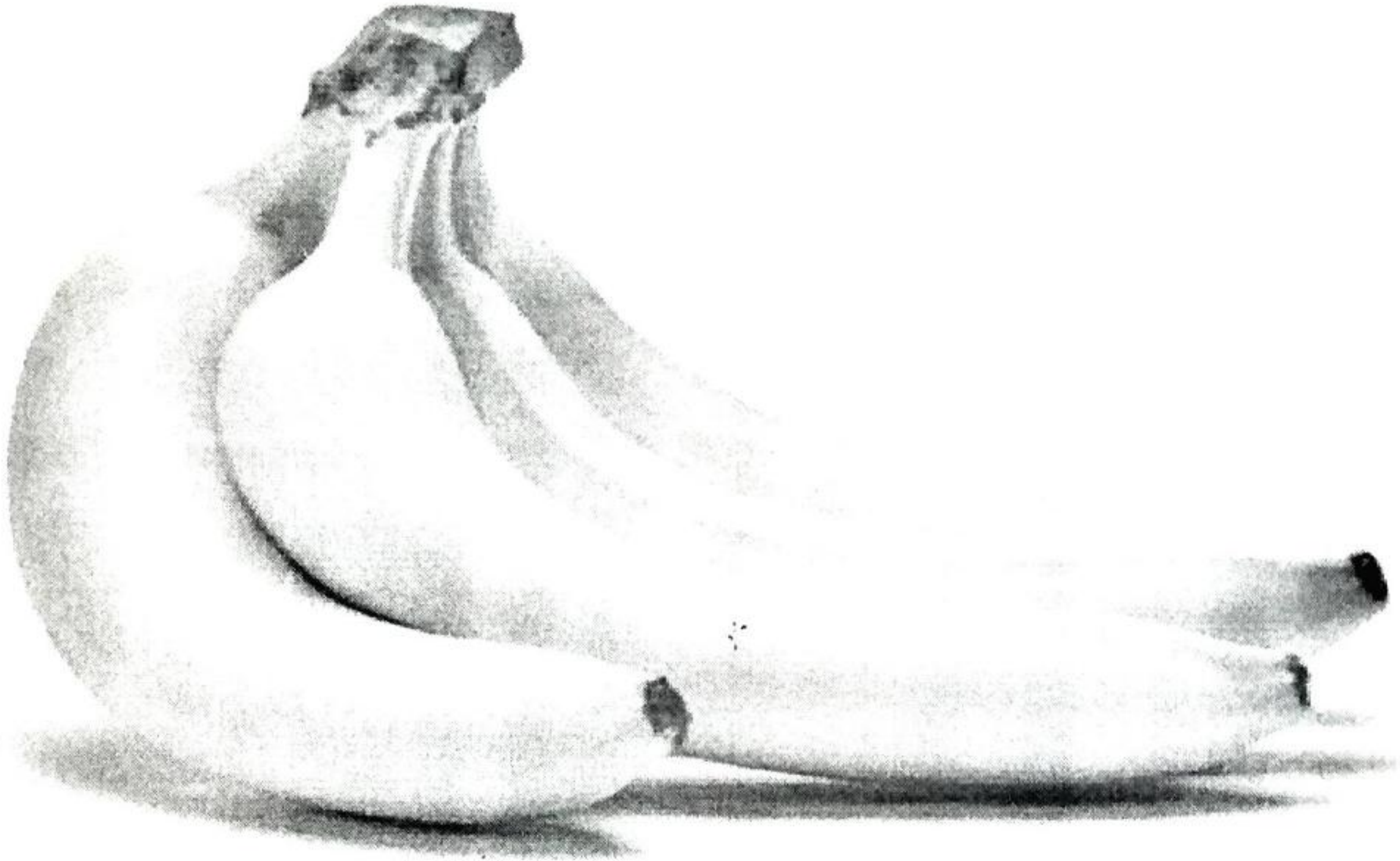
Table 1: Banana peel content

Item	Content (g/100 g dry matter)
Protein	8.6±0.1
Fat	13.1±0.2
Starch	12.78±0.9
Ash	15.25±0.1
Total Dietary Fat	50.25±0.2



**BANANA PEEL AS SOURCE:**

The *Musa sp* was collected from food waste present in college mess and from house hold garbage. The starch content present in these species of *Musa* is high compared to other compared food wastes. Banana contains more carbohydrates. A Small banana has 23.1 grams of carbohydrates. Among these carbohydrates starch plays major role polymer formation.





## POTATO STARCH AS SOURCE:

The feasibility of Potato (*Solanum tuberosum*) starch as a raw material for making biodegradable plastic. The research findings showed that Potato starch, along with the other ingredients, such as banana peels are an effective in making biodegradable plastic.



## RETRO DEGRADATION:

Starch retro degradation is a process in which disaggregated amylose and amylopectin chains in a gelatinized starch paste re associate to form more ordered structures. Starch retro degradation has been the subject of intensive research over the last 50 years, mainly due to its detrimental effect on the sensory and storage qualities of many starchy foods. However, starch retro degradation is desirable for some starchy food products in terms of textural and nutritional properties. To better understand the effect of starch retro degradation on the quality of starchy foods, measurement methods of starch retro degradation and factors that influence starch retro degradation have been studied extensively. This article provides a comprehensive review of starch retro degradation including the definition of the process, molecular mechanisms of how it Occurs, and measurement methods and factors that influence starch retro gradation. (Dr. J.J G Van soest et.al)



**TABLE :2****100 grams of Potato - Retrogradation effects on RS Content**

State	Readily Digestible Starch (RDS)	Resistant Starch (RS)
Raw	20g	80g
Boiled/hot	98g	2g
Boiled/cooled	90g	10g
Boiled/cooled/reheated	88g	12g
Boiled/cooled/reheated/re-cooled	85g	15g

**MATERIALS AND METHODS:****METHOD OF PRODUCTION:****SYNTHETIC BASED METHOD**

The method involves the use of chemicals for the strong polymerization. The acid is used for the hydrolysis of the starch present in the banana peels where the branched structure turns linear, and the base is added to neutralize the PH and to provide plasticity to the product. Then the potato starch is added to increase the volume of the product. The glycerin is added to enhance plasticity.

**CHEMICALS REQUIRED:**

- Hydrochloric acid (hcl)
- Sodium hydroxide(Na OH)
- Glycerol
- Acetic acid
- Distilled water

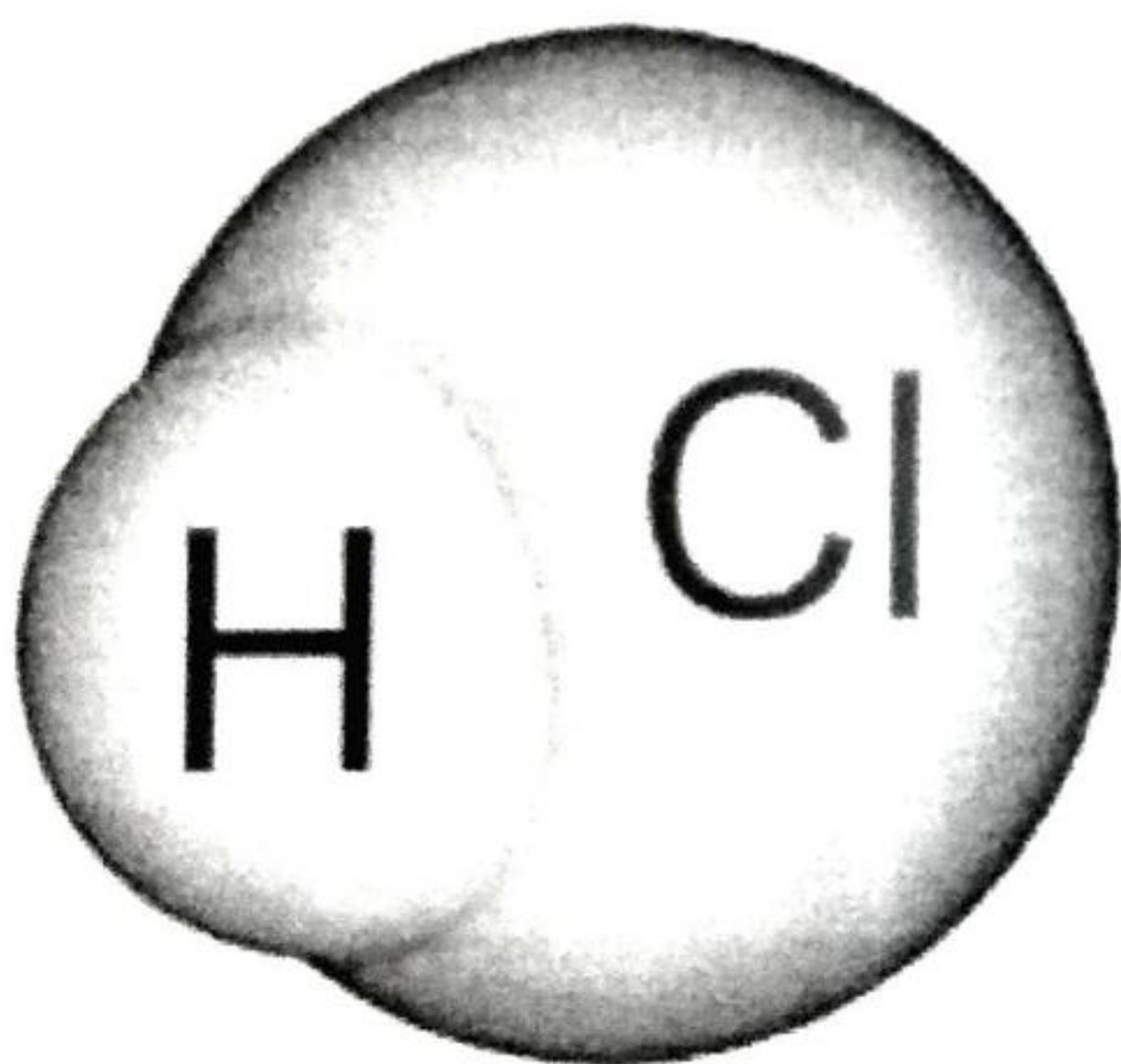


- Vegetable oil.

## PROPERTIES OF EACH CHEMICAL:

### HYDROCHLORIC ACID:

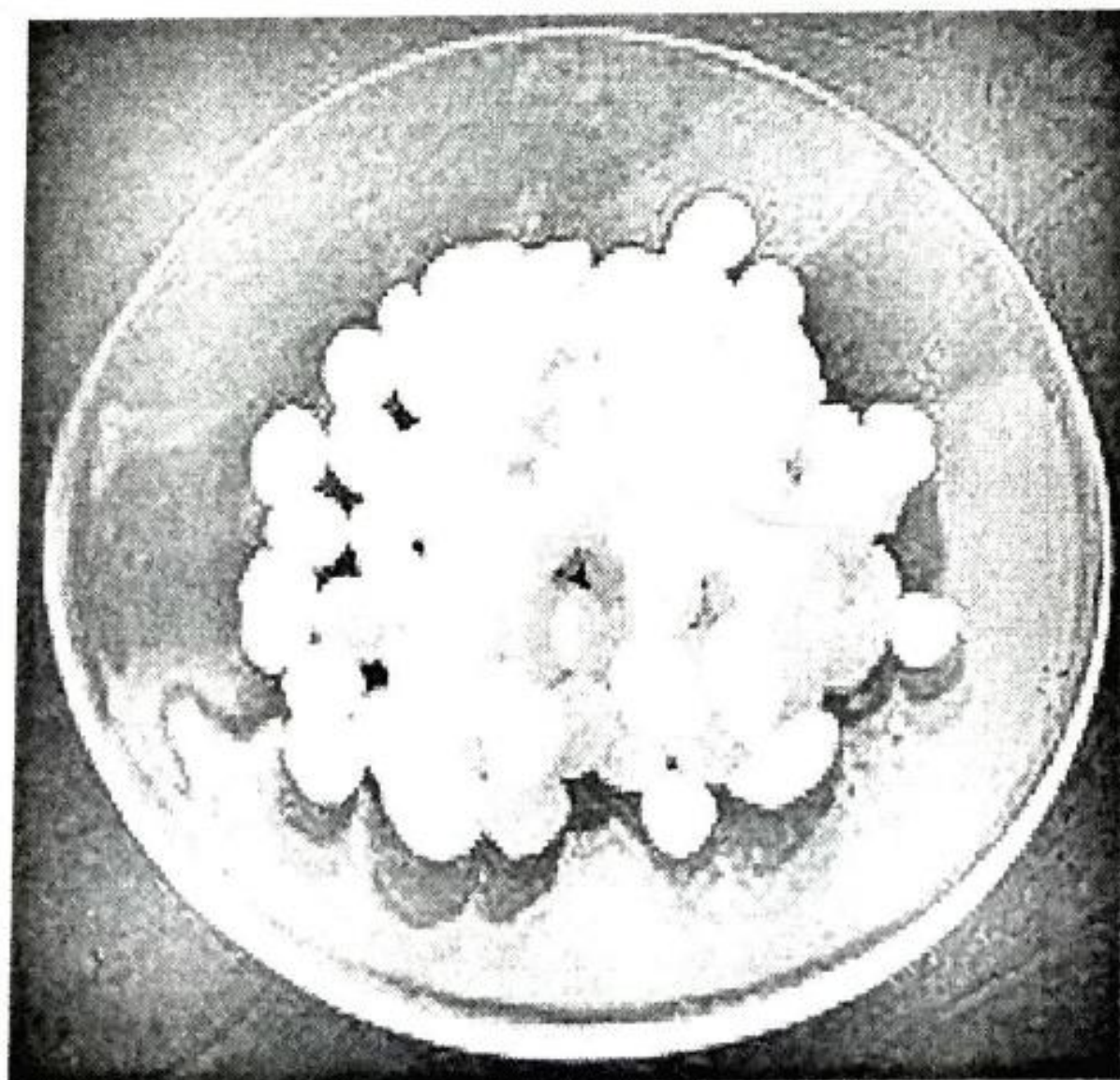
- Physical state and appearance: Liquid.
- Odor: Pungent. Irritating (Strong.)
- Taste: Not available. Molecular Weight: Not applicable.
- Color: Colorless to light yellow
- pH (1% solution/water): Acidic
- Boiling Point: 50.5°C (122.9°F)
- Melting Point: -46.2°C (-51.2°F) to -25.4 C
- Critical Temperature: Not available
- Specific Gravity: 1.19 (Water = 1)
- Vapor Pressure: 16 k pa ( at 20°C)
- average Vapor Density: 1.267 (Air = 1)
- Volatility: Not available
- Dispersion Properties: See solubility in water, diethyl ether.
- Solubility: Soluble in cold water, hot water, diethyl ether.





**SODIUM HYDROXIDE:**

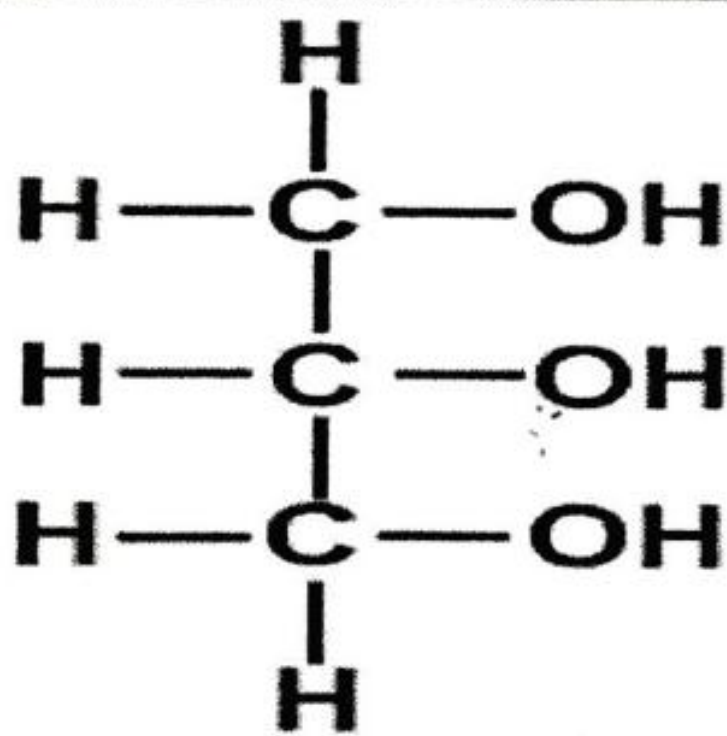
Chemical formula	Na OH		
Molar mass	39.9971 g mol <sup>-1</sup>		
Appearance	White, waxy, opaque crystals		
Odor	odorless		
Density	2.13 g/cm <sup>3</sup>		
Melting point	318 °C (604 °F; 591 K)		
Boiling point	1,388 °C (2,530 °F; 1,661 K)		
Solubility in water	418	g/L	(0 °C)
	1110	g/L	(20 °C)
	3370 g/L (100 °C)		





**GLYCEROL:**

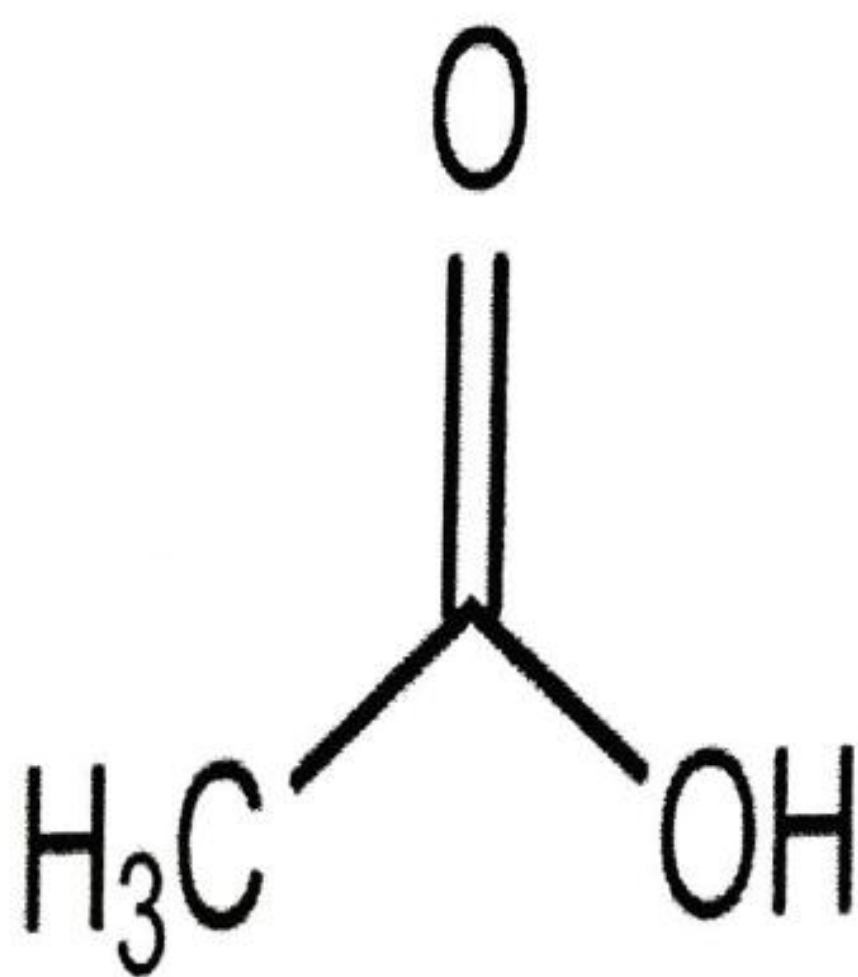
<b>Chemical formula</b>	<b>C<sub>3</sub>H<sub>8</sub>O<sub>3</sub></b>
<b>Molar mass</b>	<b>92.09 g·mol<sup>-1</sup></b>
<b>Appearance</b>	<b>colorless</b> <b>hygroscopic</b> <b>liquid</b>
<b>Odor</b>	<b>odorless</b>
<b>Density</b>	<b>1.261 g/cm<sup>3</sup></b>
<b>Melting point</b>	<b>17.8 °C (64.0 °F; 290.9 K)</b>
<b>Boiling point</b>	<b>290 °C (554 °F; 563 K)</b>
<b>Solubility in water</b>	<b>miscible</b>
<b>Vapor pressure</b>	<b>0.003 mmHg (50°C)</b>
<b>Magnetic susceptibility (<math>\chi</math>)</b>	<b>-57.06·10<sup>-6</sup> cm<sup>3</sup>/mol</b>
<b>Refractive index (<math>n_D</math>)</b>	<b>1.4746</b>
<b>Viscosity</b>	<b>1.412 Pa*s</b>

**GLYCEROL****SOURCE: WIKIPEDIA**



**ACETIC ACID:**

<b>Chemical formula</b>	<b>C<sub>2</sub>H<sub>4</sub>O<sub>2</sub></b>
<b>Molar mass</b>	<b>60.05 g·mol<sup>-1</sup></b>
<b>Appearance</b>	<b>Colorless liquid</b>
<b>Odor</b>	<b>Pungent/Vinegar-like</b>
<b>Density</b>	<b>1.049 g cm<sup>-3</sup></b>
<b>Melting point</b>	<b>16 to 17 °C; 61 to 62 °F; 289 to 290 K</b>
<b>Boiling point</b>	<b>118 to 119 °C; 244 to 246 °F; 391 to 392 K</b>
<b>Solubility in water</b>	<b>Miscible</b>



ACETIC ACID



## TYPES OF BIOPLASTIC:

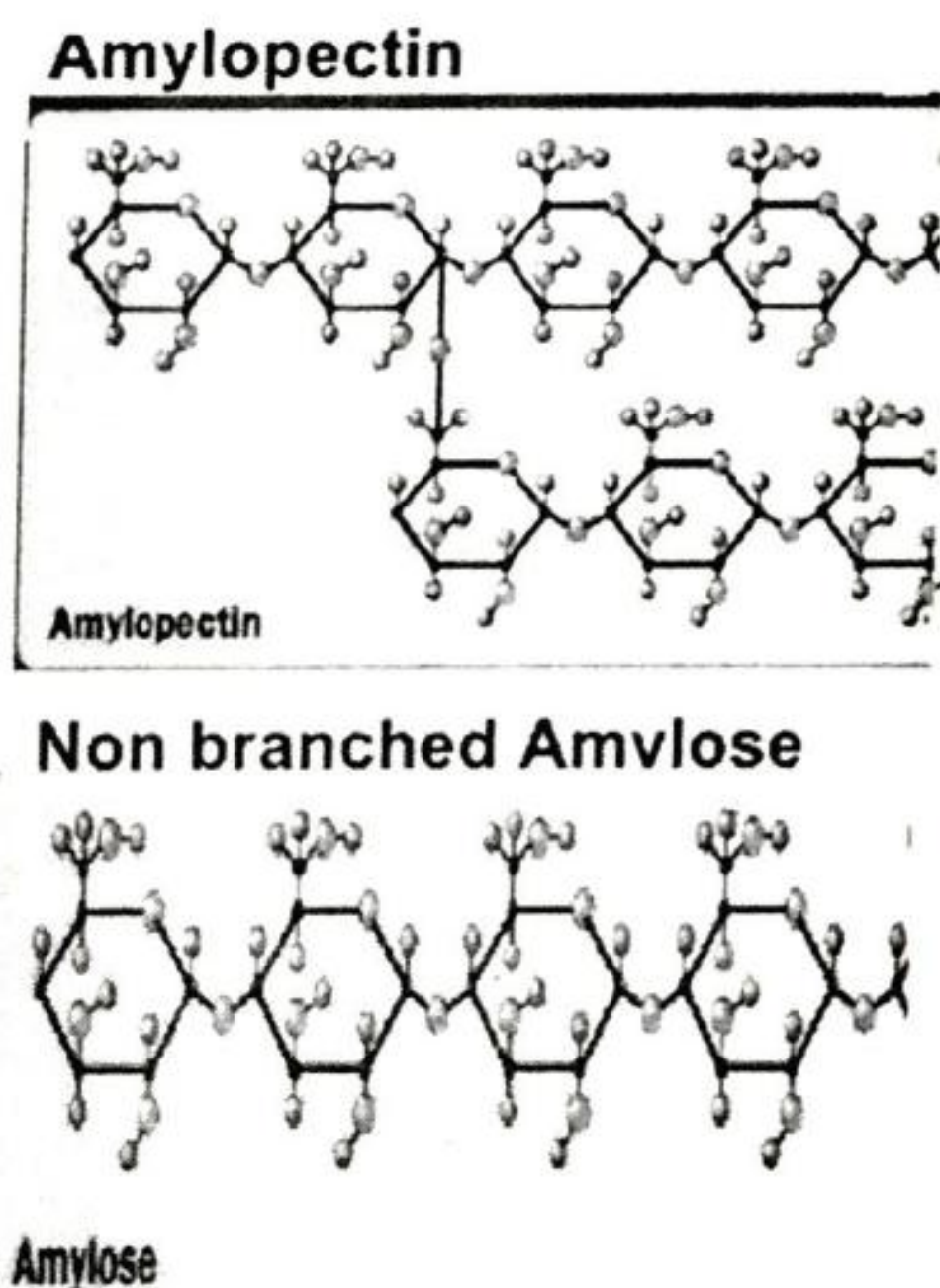
Based on the sources available in nature bio plastics are of three types ,

- STARCH BASED BIO PLASTICS
- CELLULOSE BASED BIO PLASTICS
- PROTEIN BASED BIO PLASTICS

Out of these types starch based technique is opted for this project.

## PRINCIPLE:

Monomer is a small subunit which joins together to form polymer .Many monomers combine together to form polymers and form a component called plastic. The sources used in this project (Banana peel & Potato) is rich in starch. Since the starch that has been used here is a polymer, water is added up to loosen up the molecules. The starch consists of two different types of polymer chain called Amylose and Amylo pectin made up of adjoined glucose molecules.

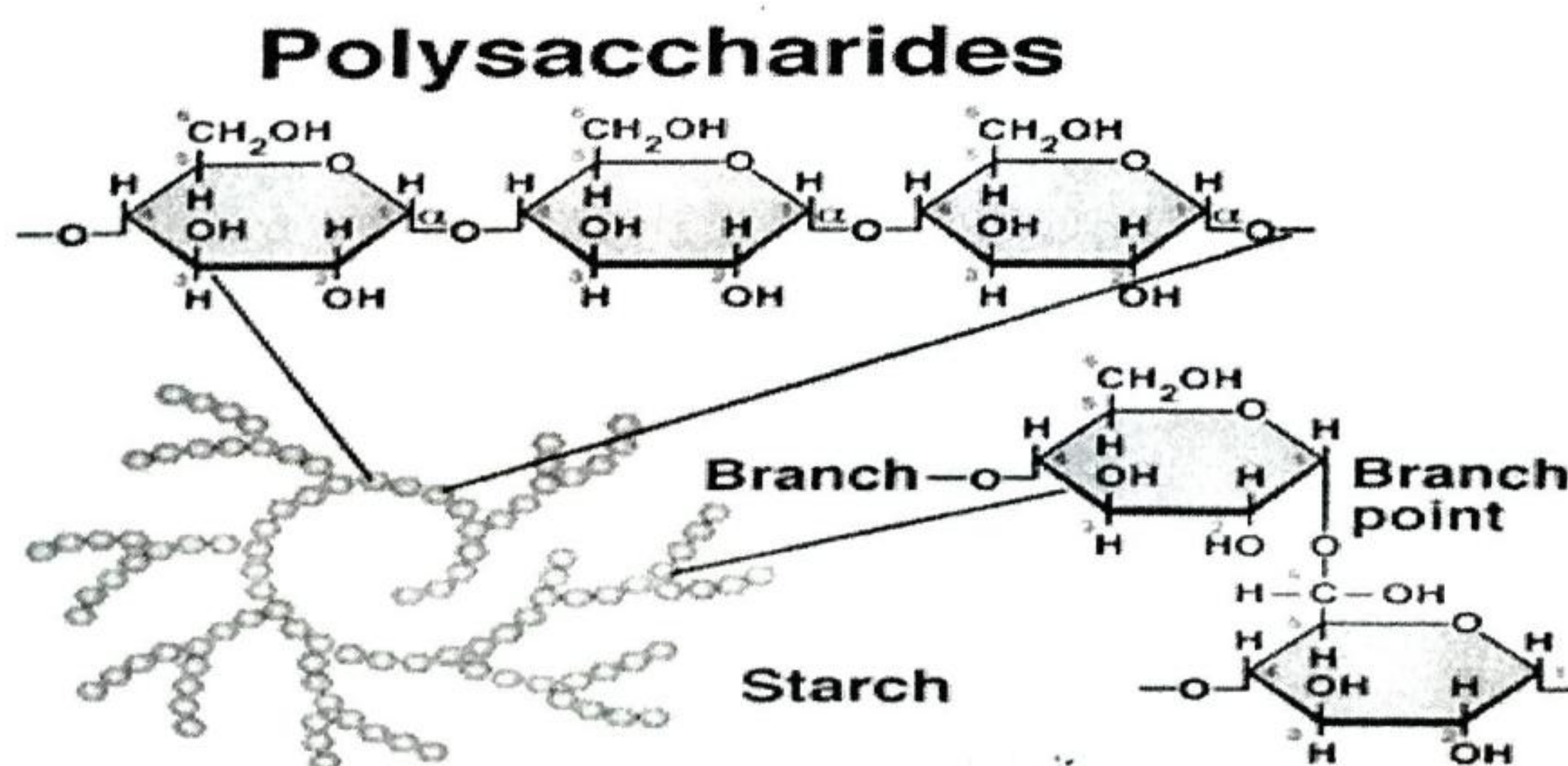


The Hydrochloric acid (HCL) is used in hydrolysis of amylopectin which is needed in order to aid the process of film formation due to H-bonding amongst chain of glucose in starch. As the amylopectin which restricts the film formation is been removed, the amylase forms a linear polymer structure..These linear polymers are linked together with the help of acetic acid to form a rigid structure of plastic. NAOH helps in retaining the plasticity for a longer time and also neutralizes the PH. The glycerol acts as plasticizer it provides the flexible nature of the plastic.



## MECHANISM:

- Starch is a natural polymer which consists of amylose and amylopectin as subunits. These are attached to each other using weak forces.
- Acid hydrolysis changes the physical and chemical properties of starch without changing its granule structure.
- Amylopectin content is increased in starch; it provides difficulties for forming polymer.
- Hence during hydrolysis amylose content is increased.
- These subunits consist of glucose and fructose as its monomers, the starch is first hydrolyzed to release monomers of glucose and fructose by breaking the glycosidic bonds.
- These cause the branched structure of amylopectin to form linear structure.
- The linear structure can be formed as polymers that are linked to each other using the mechanism of cross linking.
- Cross linking is the process of bond formation that links one polymer chain to another. They can be covalent bonds or ionic bonds.
- The cross linking agent is acetic acid.
- Plasticizer makes the polymer chain molecules bend and slide past each other more easily, which adds to the flexibility of the plastic and also shows intense shine on the plastics.
- These plasticizers also arrests water vapor and gas permeability.





**PROTOCOL:**

- The banana peels and the potatoes are collected from the kitchen wastes,
- The collected bananas and potatoes are washed and the peeled off.
- The banana peels are made into small pieces and weighed.
- 197 g of peels were taken.
- In a beaker 0.1M of HCL solution has been prepared.
- The beaker containing HCL solution was placed in the heating mantle and pre heated.
- The weighed banana peels were added into the beaker and heated along with the HCL solution for 30 minutes.



- After 30 minutes the peels are removed from the beaker and allowed to cool in a Petri dish.





- The dried peels were blended using mortar & pestle and the excess water was decanted off.
- The paste that is obtained was added into a beaker containing 0.5M of NaOH solution.



- The solution was filtered and the residue was collected in a petri dish.



- In a Petri dish the peeled potatoes were grated using a grater.

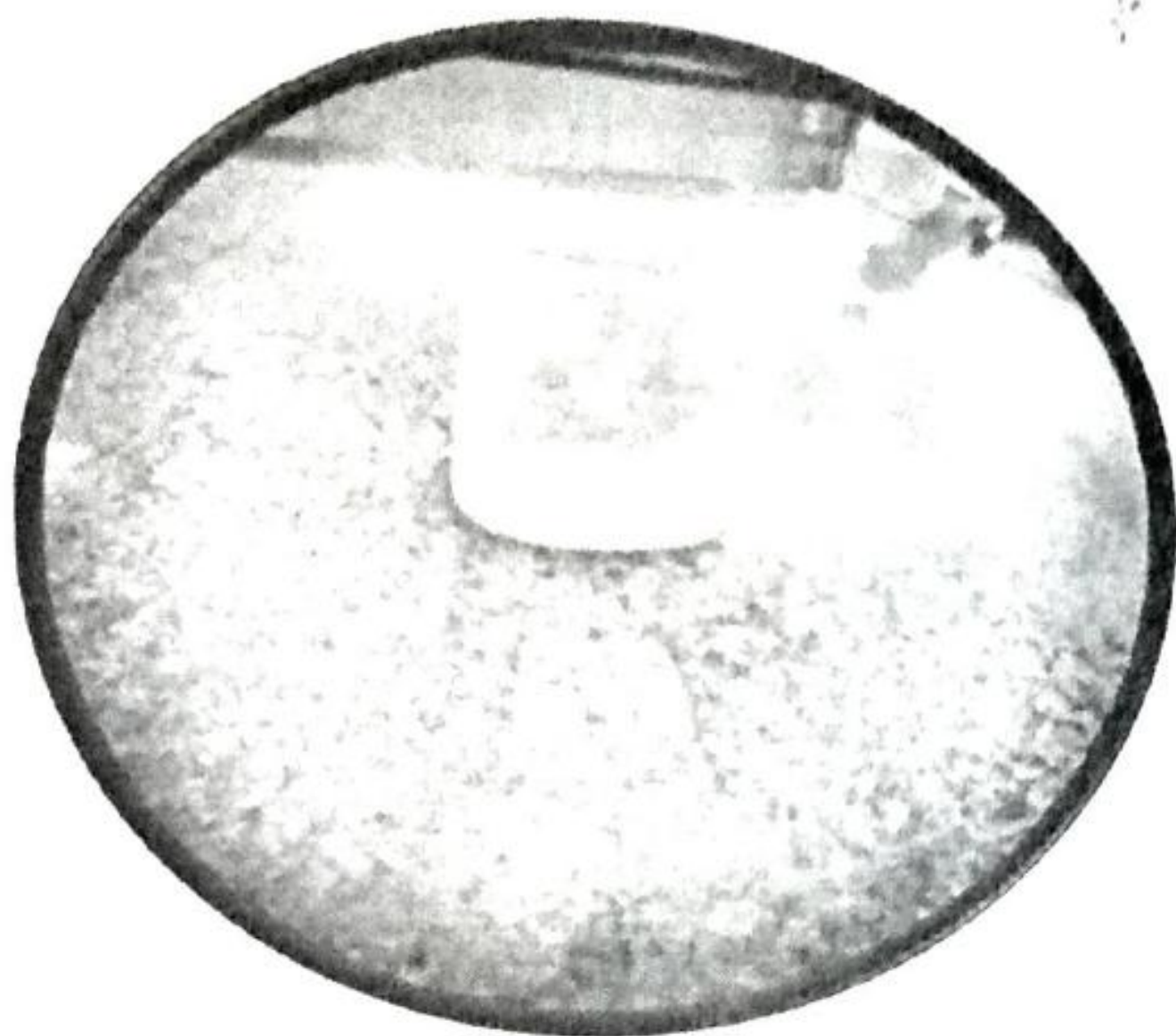


- By adding some water to the blended peels a mixture containing two layers is extracted ,and after allowing it to settle down for 5 minutes the layers of cell debris and other components ( the brown layer in the top ) and the starch (the white layer at the bottom )was obtained.



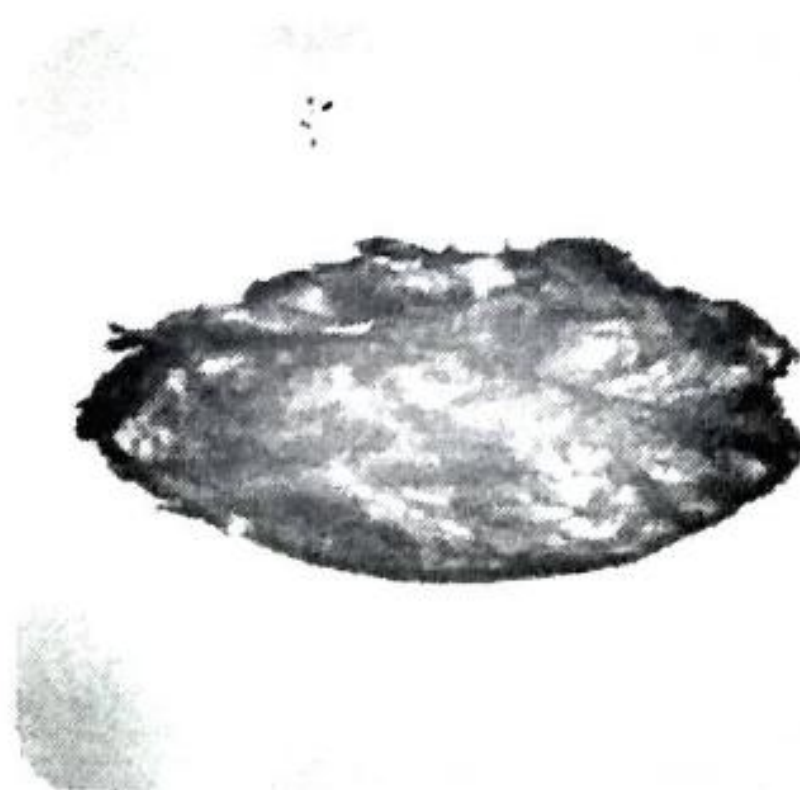
- The distillate was poured off and the starch was collected and weighed.





- In another beaker, 10g of starch, 60 ml of water, 3ml of 0.1M acetic acid and 3 ml of glycerol was added and heated.
- The paste previously obtained from the banana peels are added along with these components, heated and stirred continuously until it attains a gel consistency.
- Then the obtained paste is transferred to a glass Petri dish and baked at 130 degree Celsius or 160 degree Fahrenheit for 1 hour and then it was allowed to dry naturally in sunlight for 72 hour

#### PRODUCT BEFORE DRYING



#### PRODUCT AFTER DRYING



## RESULTS AND DISSCUSSION:

As a result of this project, the bio plastic was obtained. In order to attain the desired form, product some facilities and financial support is required.

FACILITIES AVAILED:	FACILITIES REQUIRED:
CHEMICALS	EQUIPMENTS: <ul style="list-style-type: none"> <li>• DRYER</li> <li>• INJECTIONS MOULDER.</li> </ul>
HEATING MANTLE	
HOT AIR OVEN	
GLASS WARES	

## POINTS TO BE CONSIDERED:

- ✓ Production capacity
- ✓ Economy
- ✓ Protection of environment

## FUTURE ASPECTS:

In future, the improvement should be done to implement the bio plastic's large scale production in order to create an eco-friendly and plastic free environment

## CONCLUSION:

We can conclude that this project will satisfy the needs of the society .We could also say that this material can be a replacement for the non-degradable plastics which prevails as a hazard to the environment.



# Tamilnadu State Council for Science and Technology

DOTe Campus, Chennai - 600 025

## Approved list of Student Projects - 2017-2018

(Science Stream – sl.no. 1 to 91 & 382 to 500)

### Agricultural Sciences

No.	Guide Name & Address	Title of the Project	Student(s) Name	Code	Amount Rs.
1	Dr.G.Sashidevi Assistant Professor (FSN) Home Science College and Research Institute Tamilnadu Agri. University Madurai-625104	Development of RTE mushroom products through Retort processing	G.Vidya	AS-001	10000/-
2	Dr.R.Kannan Assistant Professor Dept: of Entomology Annamalai University Annamalai Nagar-608 002	Bioactive compound exploration in red algal seaweed Gracilaria corticata and evaluation for insecticidal and growth regulator activity against a Spodoptera litura polyphagous pest in Agriculture and Horticulture	Dharanipriya N	AS-002	10000/-
3	Dr.R.Mahendran Assistant Professor Indian Inst. Of Food Processing Technology Ministry of Food Processing Industries Thanjavur-613005	Development of non thermal process for shelf life extension of coconut neera	R.Gayathri Geetika K Gopi	AS-003	10000/-
4	Dr.R.Kumaravelan Professor Dept. Mech Engg & Tech Velalar College of Engg and Technology Erode-638012	Design and fabrication of multipurpose farm equipment for small scale farmers.	Tamilarasan TK S.Ragunandhan S.Venkadeshprasad	AS-004	10000/-
5	Dr.K.P.Kannan Assistant Professor Dept. of Biotechnology Bannari Amman Institute of Technology Sathyamangalam -638401	A novel and promising renewable Biofuels and green chemicals from endophytic fungi	Saranya.K	AS-005	10000/-



388	Dr. N.Ramesh Assistant Professor Dept. of Zoology Nehru Memorial College Trichy- 621 007	Study on Re-Use of waste water for Agriculture at Nehru Memorial College Campus, Puthanampatti, Trichy district, Tamilnadu	N.Sathish B.Logeshwari R.Shanmuga-lakshmi S Biruntha	ES-007	10000,
389	Mrs.N.Uma Sangari Assistant Professor Dept. of Chemistry SFR College for Women Sivakasi	Synthesis, characterization and application of ZnO Nanoparticles in the Degradation of Organic Pollutants: A Green Approach	R.Mareeswari M.Jothilakshmi	ES-008	10000/-
390	Dr.C.Ramesh babu Senior Associate Professor and Head Kalasalingam University Virudhunagar-626126	Dvelopment of Geopolymer Pervious Concrete for low volume traffic pavements	L.Prakashbbu M.Shubham – Sawant R.Thangavel Raj	ES-009	10000/-
391	Mrs.P.Bharathi Assistant Professor Dept of Biotechnology Karpaga Vinayga College of Engineering and Technology Chinnakolambakkam, Palayanoor Post Kancheepuram-603308	Production of Biodiesel from Municipal Sewage Sludge by Transesterification process	Ms.P.Gowsalya Ms.V.Varsha Ms.K.Harini Mr.R.Balaganesh	ES-010	10000/-
392	Mrs.K.Suganya Assistant Professor Dept of Micro Biology Sri Ramakrishna College of Arts and Science for Women Coimbatore-641 044	Synthesis of Bio Plastics from Agri Waste using Bacillus sp and Pseudomonas sp	S.Gayathri M.Gunavathi A.D.Malarvizhi S.T.Sangetha – priyya	ES-011	8750/-
393	Dr.N.Sudha Assistant Professor Dept. of Chemistry Muthyammal College of Arts and Science Rasipuram Namakkal-637 408	Utilization of metal ferrites for sago water treatment in Namakkal and Salem dist	J.Dineshkumar R.Jayakumar P.Pravin kumar	ES-012	10000/-
394	Mr.M. Barathi Selvaraj Assistant Professor Dept of EEE Knowledge Institute of Tech. Kakapalayam(Po) Salem-637504	Lifesaving system in faulty electric transmission line	K.Sowndharya M.Manikandan P.Chandrasekar	ES-013	9500/-
395	Mr.K.Cholapandian Associate Professor Dept of Biotechnology Prathyusha Engineering College, Thiruvallur-602 025	Bioplastics from food waste banana peel and potato starch	Arthi.S Anitha.A.D Keerthana.K Gayethri.S	ES-014	10000/-
396	Dr.C.Elaiyaraja Dept. of Zoology Vivekananda College of Arts and Sciences for Women Elayampalayam -637205 Tiruchengode, Namakkal	Assessment of pollutants in water and sediment samples in lake of Namakkal district, Tamilnadu, India	Ms.N.Kalaivani	ES-015	10000/-





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

**STUDENT PROJECT SCHEME 2017-2018**  
**UTILISATION CERTIFICATE**

1. Name of the guide and address : Mr. K. Chalapandian  
Assistant Professor  
Department of Biotechnology, Prathyusha  
Engineering College, Poonamallee to  
Thiruvallur high road Chennai 602025.
2. Name of the student(s) : ANITHA A. D and ARTHI S
3. Title of the project : Production Of Bioplastics From  
Food Wastes-Banana Peels And Potato Starch
4. Project code : ES014

It is certified that a sum of Rs. 10,000/- (Rupees Ten Thousand) 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. 0/- remaining unutilized is refunded.

  
Signature of the guide

  
Signature of the HOD

Signature of the

REGISTRAR/PRINCIPAL/DEAN  
With SEAL

H. K. RATHAN M.Sc., M.Tech., Ph.D.,  
Head, Department of Biotechnology  
Prathyusha Engineering College  
Tiruvallur-602025, Tamilnadu, INDIA



## **2. PMKVY**





प्रो. एम. पी. पूनीया  
उपाध्यक्ष  
Prof. M. P. Poonia  
Vice-Chairman



अखिल भारतीय तकनीकी शिक्षा परिषद्  
(भारत सरकार का एक स्वायत्त निकाय)  
(मानव संसाधन विकास विभाग, भारत सरकार)  
नेल्सन मंडेला मार्ग, वसंत कुंज, नई दिल्ली-110070  
दूरभाष : 011-26131495  
ई-मेल : [vcn@aicte-india.org](mailto:vcn@aicte-india.org)

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(A statutory Body of the Govt. of India)  
(Ministry of Human Resource Development, Govt. of India)  
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070  
Phone 011-26131495  
E-mail : [vcn@aicte-india.org](mailto:vcn@aicte-india.org)

F. No.2-6/D-NSQF/PMKVY-NSC/2016

16<sup>th</sup> November, 2017

Dear Sir/Madam,

This is with reference to your on-line application for participation in the National Skill endeavor through the Pradhan Mantri Kaushal Vikas Yojana for Technical Institution (PMKVY-TI) for the Academic year 2017-18.

The National Steering Committee on this scheme in its meeting held on 09/10/2017 under the Chairmanship of Secretary (HE) approved the recommendations of State Steering Committee to give training to youth in technical skills of NSQF in the selected AICTE approved institutes.

The list of approved institutes along with Sectors and Specializations is uploaded on AICTE website at - <https://www.aicte-india.org/schemes/other-schemes/pmkvy>

The National Steering Committee has selected your institute to offer training under PMKVY-TI for the Academic year 2017-18. You are requested to mobilize students for the recommended sector and specialization to give training under the scheme. The duration of training should be as prescribed by respective Sector Skill Council.

The Help Manual and Guidelines of the scheme is uploaded on AICTE website at - <https://www.aicte-india.org/schemes/other-schemes/pmkvy>.

The detailed Instructions for Institutes to upload student details on AICTE portal under PMKVY TI is attached for your ready reference.

In case of any further clarification please send a mail to: [pmkvy-ti@aicte-india.org](mailto:pmkvy-ti@aicte-india.org).

Wishing you good luck for your successful journey in this national mission of developing skilled manpower.

Warm Regards

(Prof. M. P. Poonia)

(Principal/Director of approved Institute under PMVKY-TI)



**List of Institution with Sector/Specializations and Intake as approved by National Steering Committee (NSC) for PMKVY-TI for the AY 2017-18**

**GENERAL INSTRUCTION: -**

1. Selected institutes are requested to enroll candidates in the approved Job Role/ Specialization.
2. Institutes are requested to upload the details of students on AICTE portal.
3. Institute can upload and submit the detail of student batch wise.
4. The release of Grant is subject to eligibility of student as per the minimum qualification of the course prescribed by the NSDC/SSC for the particular Job Role/ Specialization.
5. The grant under PMKVY-TI will be released in 04 instalments 30:30:20:20 directly to the bank account of respective institutes through RTGS.
6. The fund will be inclusive of mobilization of candidates, placement and post-placement expenses, Trainers training, recurring cost for maintaining the facilities, raw material, salary of trainers Assessment fees, certification etc.
7. The 1st installment of a batch/ course will be released immediately on uploading of students details on AICTE portal.
8. The further installment will be released as per the guidelines of the scheme and on submission of Utilization Certificate in original in the prescribed format.
9. The list of remaining states will be uploaded as per recommendation of State/National Steering Committee of the respective state.
10. For any query send mail to: pmkvty-ti@aicte-india.org.

S.No.	Application ID	Institute Name	Region	State	Sector	Specialization	NSQF Level	Minimum Qualification	Number of hours*	Recommended Intake
1	1-3329130165	Adarsa College of Pharmacy	SCRO	Andhra Pradesh	IT/ITeS	Domestic Data entry Operator	4	10th Std. Pass	400	25
2	1-3329130165	Adarsa College of Pharmacy	SCRO	Andhra Pradesh	Life Sciences	Lab Technician/ Assistant - Life Sciences	3	12th Class	230	25
3	1-3329130165	Adarsa College of Pharmacy	SCRO	Andhra Pradesh	Healthcare	Pharmacy Assistant	4	Preferred Class XII in science	465	25
4	1-3325759047	Aditya College of Engineering	SCRO	Andhra Pradesh	Construction	Assistant Electrician	3	Preferably 10th Class	400	20
5	1-3325759047	Aditya College of Engineering	SCRO	Andhra Pradesh	IT/ITeS	Domestic Data entry Operator	4	10th Std. Pass	400	20
6	1-3325186238	Aditya College of Engineering & Technology	SCRO	Andhra Pradesh	Infrastructure	Junior Mechanic Engine	3	Preferably Class 8th	160	25



4831	1-3325374358	Ponnaiyah Ramajayam Polytechnic College	SRO	Tamil Nadu	Construction	Bar Bender and Steel Fixer	4	Preferably 5th standard	400	25
4832	1-3325374358	Ponnaiyah Ramajayam Polytechnic College	SRO	Tamil Nadu	Automotive	CNC Operator Machining Technician L4	4	ITI - Mechanical/ Machine Technology	400	25
4833	1-3325374358	Ponnaiyah Ramajayam Polytechnic College	SRO	Tamil Nadu	Iron and Steel	Iron & Steel - Machinist	3	Class XII Pass	390	25
4834	1-3325374358	Ponnaiyah Ramajayam Polytechnic College	SRO	Tamil Nadu	Electronics	LED Light Repair Technician	4	ITI	200	25
4835	1-3325374358	Ponnaiyah Ramajayam Polytechnic College	SRO	Tamil Nadu	Electronics	Wireman - Control Panel	3	10th Pass	200	25
4836	1-3325434979	Ppg Institute of Technology	SRO	Tamil Nadu	Automotive	Forging Operator	4	ITI	400	25
4837	1-3325434979	Ppg Institute of Technology	SRO	Tamil Nadu	Automotive	Lathe Operator	4	Class VIII	400	25
4838	1-3325398017	Prathyusha Engineering College	SRO	Tamil Nadu	Construction	Assistant Electrician	3	Preferably 10th Class	400	25
4839	1-3325398017	Prathyusha Engineering College	SRO	Tamil Nadu	Construction	Assistant Electrician	3	Preferably 10th Class	400	25
4840	1-3325398017	Prathyusha Engineering College	SRO	Tamil Nadu	IT/ITeS	Domestic Data entry Operator	4	10th Std. Pass	400	25
4841	1-3325398017	Prathyusha Engineering College	SRO	Tamil Nadu	Electronics	Field Technician - Computing and Peripherals	4	12th Std. Pass	200	25
4842	1-3325398017	Prathyusha Engineering College	SRO	Tamil Nadu	Life Sciences	Lab Technician/ Assistant - Life Sciences	3	12th Class	230	25





# PRATHYUSHA ENGINEERING COLLEGE

Approved by AICTE & Affiliated to Anna University, Accredited by National Board of Accreditation (NBA), ISO 9001 : 2008 Certified Institution  
NAAC accredited A Grade Institution

**Dr. Ramesh P.L.N., M.Tech., Ph.D.,**

**Principal**

**To**

**Date: 21.08.2018**

**Prof. Ruchika Kem**

Assistant Director

Skill Development Cell, AICTE

Nelson Mandela Marg, Vasant Kuni

New Delhi – 110 070.

**Respected Sir**

**Sub:** Submission of Utilization certificate (First installment) released for PMKVY-TI – Reg.

**Ref:** F. No: 2-6/D-NSQF/PMKVY-NSC/2016, dated 16<sup>th</sup> November, 2017.

I bring to your kind attention that our institute (PMKVY-TI: unique id: I-3329130165) has completed first phase PMKVY courses [Assistant Electrician (2 Batch), Lab Technician (2 Batch), Domestic Data entry Operator (1 Batch), Field Technician – Computing and Peripherals (1 Batch)].

The utilization certificate for the amount (Rs. 5, 75, 626/-) released first installment (30%) has been uploaded in our portal. A hard copy of the same is enclosed herewith for kindly release the grant conduct second installment of the course at the earliest.

Thank you

*PCNA*

**PRINCIPAL**

**Encl:**

1. List of institution with sector and approved by NSC form PMKVY-TI
2. Original Utilization certificate of First installment.

Dr. RAMESH P.L.N., B.Tech., M.Tech., Ph.D.  
Principal  
PRATHYUSHA ENGINEERING COLLEGE  
Poonamallee to Thiruvallur High Road,  
Chennai- 602025



Name of the Institute: PRATHYUSHA ENGINEERING COLLEGE

### UTILISATION CERTIFICATE FOR THE FINANCIAL YEAR -2018

Name of the Scheme under which the amount was sanctioned under the **Pradhan Mantri Kaushal Vikas Yojana for Technical Institutes (PMKVY-TI) Scheme.**

(to be submitted separately for each sanction order)

Sl. No	AICTE sanction order/ Letter No. & Date under which the amount was sanctioned	Amount (Rs.)	
1		<p>(A)* .....</p> <p>Rs. 5,76,502.00</p> <p>(Five lakhs Seventy six thousands five hundred and two rupees only)</p>	<p>Certified that out of Grant- in-Aid of (A)*: Rs. 5,76,502.00 (Five lakhs Seventy six thousands five hundred and two rupees only) sanctioned by the AICTE during the financial year 2017-18 in favour of <b>Prathyusha Engineering College</b> as per letter mentioned in column 2 and Rs. (B)*: Nil on account of unspent balance of previous year, Rs. Five lakhs Seventy six thousands five hundred and two rupees only-(C)* has been utilized for the purpose for which it was sanctioned and the balance of Rs. Nil (D)* remained unutilized at the end of the year.</p>

Certified that I have satisfied myself that the conditions on which the amount was sanctioned have been duly fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

**Kinds of checks exercised:-**

1. Audited Annual Accounts of the Institute
2. Receipt and Payment account

Signature of Chartered Accountant *B. S. Deenadayalan*

Name of Chartered Accountant **B. S. DEENADAYALAN**

Membership No.: **228728**

Full Address with Seal  
(Mandatory for Self Financing Institutes)

Signature of the Finance Officer *G. Saravanan*

Name & Designation

Name of the Finance Officer **G. SARAVANAN**

Full Address with Seal

(Govt. Aided/University & wherever applicable)

Place:

Date:

Signature of Head of the Institute *P. Ramesh P. N.*

Name & Designation

Full Address with Seal  
Dr. RAMESH P. N., B.Tech., M.Tech., Ph.D.

Principal

PRATHYUSHA ENGINEERING COLLEGE  
Poonamallee to Thiruvallur High Road,  
Chennai- 602025



\*\*\*\*\*

A\*: Amount released by the Council under PMKVY-TI

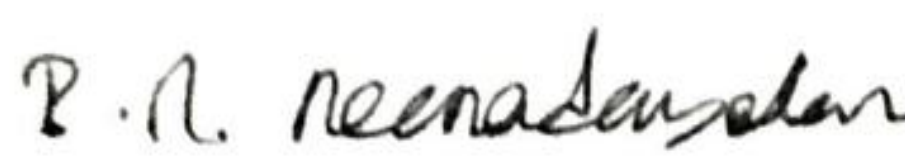

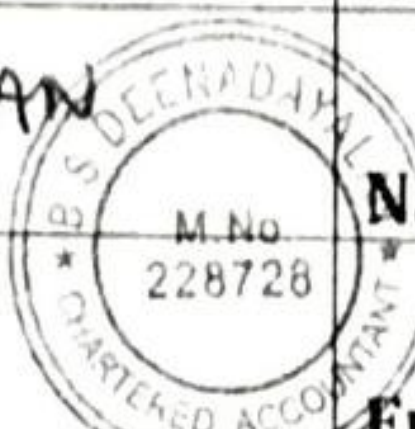
B\*: Any unspent balance from the previous Grant released under the Scheme (to be filled at the time of 2<sup>nd</sup> instalment onward)

C\*: Actual amount spent

D\*: Unspent balance (including interest earned)



## FORMAT FOR RECEIPT AND PAYMENT ACCOUNT

Sl. No.	Receipt	Amount (Rs.)	Sl. No.	Payments	Amount (Rs.)
1	To Opening Balance	A*: 5,76,502.00		<b>Expenditure Head wise: (B*)</b>	
			1	Mobilization	371150.00
			2	Teaching Aids	17650.00
			3	Amortization of infra-structure cost/ Utilities	38002.00
			4	Raw Materials	26200.00
			5	Salary of Trainers	120000.00
			6	Training for Trainers	3500.00
				TOTAL Expenditure	576502.00
				Closing Balance (C*)	0.00
	<b>Grand Total</b>	<b>5,76,502.00</b>		<b>Grand Total</b>	<b>5,76,502.00</b>
 <b>Signature of Chartered Accountant</b>			 <b>Signature of Head of the Institute</b>		
 <b>Name of Chartered Accountant</b>			<b>Name &amp; Designation</b> Dr. RAMESH P.L.N., B.Tech., M.Tech., Ph.D. Principal PRATHYUSHA ENGINEERING COLLEGE Poonamallee to Thiruvallur High Road, Chennai- 602025		
<b>Membership No.:</b> 228728			<b>Full Address with Seal</b>		
<b>Full Address with Seal</b> (Mandatory for self Financing Institute)					

  
**Signature of the Finance Officer**
**Name & Designation** G. SARAVANAN  
 SR. Accountant

**Name of Finance Officer:** G. SARAVANAN

**Full Address with Seal**  
 (Govt. Aided University & wherever applicable)

\*\*\*\*\*

A\*: Unspent Balance of previous Grant (if any)

B\*: Expenditure incurred on different heads

C\*: (A-B)





ESTD. 2001

# PRATHYUSHA ENGINEERING COLLEGE

Approved by AICTE & Affiliated to Anna University, NAAC Accredited "A" Grade, National Board of Accreditation (NBA) Institution

**Dr. RAMESH P.L.N**, B.Tech, M.Tech, Ph.D

PRINCIPAL

28.06.18

To

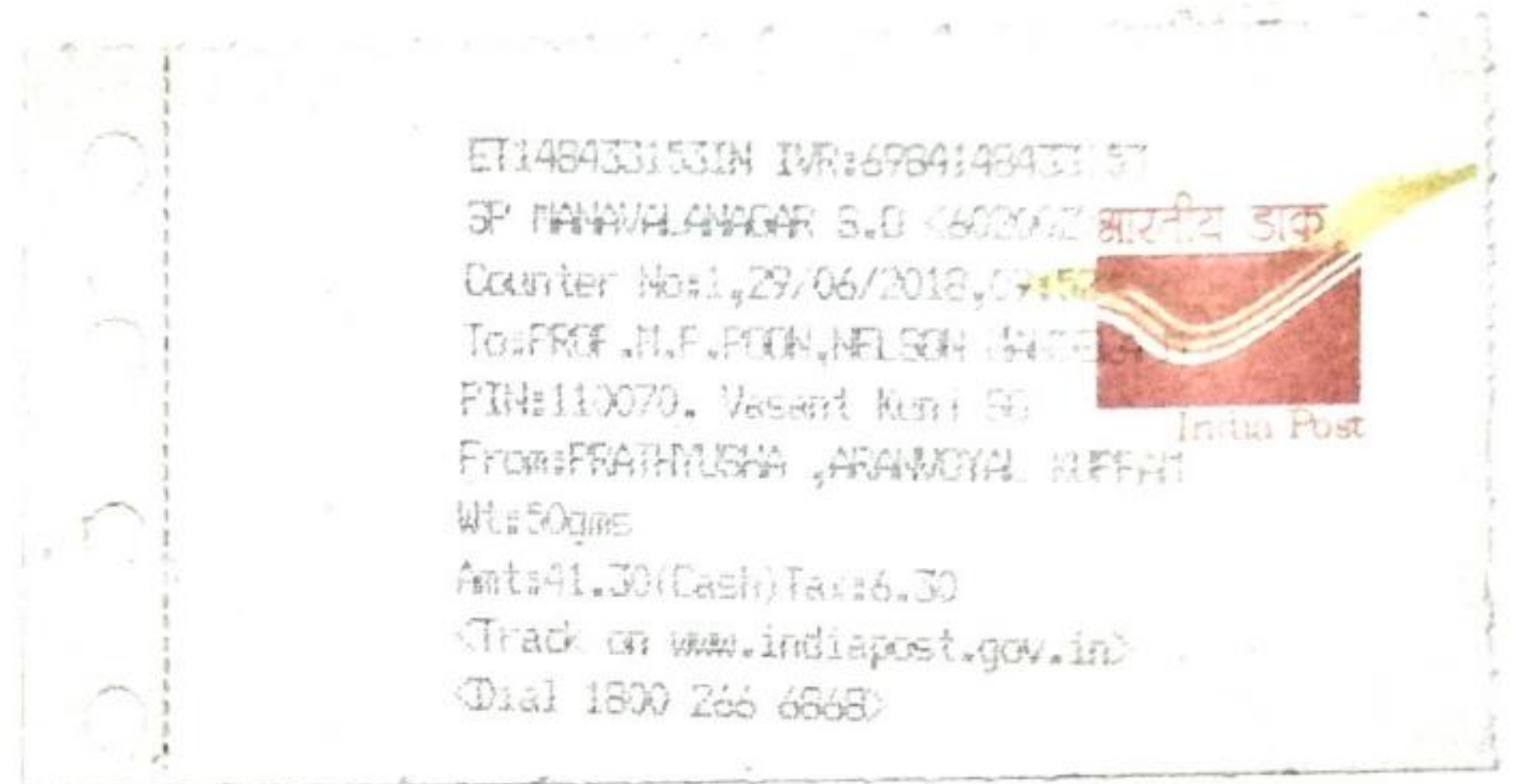
**Prof. M. P. Poonia**

Vice Chairman

AICTE

Nelson Mandela Marg, Vasant Kuni

New Delhi – 110 070.



**Respected Sir**

**Sub:** Submission of Utilization certificate (First installment) released for PMKVY-TI – Reg.

**Ref:** F. No: 2-6/D-NSQF/PMKVY-NSC/2016, dated 16<sup>th</sup> November, 2017.

I bring to your kind attention that our institute (PMKVY-TI: unique id: I-3329130165) has completed first phase PMKVY courses [Assistant Electrician (2 Batch), Lab Technician (2 Batch), Domestic Data entry Operator (1 Batch), Field Technician – Computing and Peripherals (1 Batch)].

The utilization certificate for the amount (Rs. 5, 76, 502/-) released first installment (30% on 19.03.18) has been uploaded in AICTE Website portal on 21.06.2018. A hard copy of the same is enclosed herewith for kindly release the grant conduct second installment of the course at the earliest.

**Encl:**

1. List of institution with sector and approved by NSC for PMKVY-TI for the AY 2017-18.
2. Original Utilization certificate of First installment



*[Signature]*  
PRINCIPAL  
Principal

PRATHYUSHA ENGINEERING COLLEGE  
ARANVOLIYALKUPPAM,  
TIRUVALLUR - 602 025.





ESTD. 2001

# PRATHYUSHA ENGINEERING COLLEGE

Approved by AICTE & Affiliated to Anna University, NAAC Accredited "A" Grade, National Board of Accreditation (NBA) Institution

24.02.2021

To

**Prof. Ruchika Kem**

Assistant Director

Skill Development Cell, AICTE

Nelson Mandela Marg, Vasant Kunj

New Delhi – 110 070.

**Respected Sir**

**Sub:** Requesting for releasing next installment for PMKVY-TI – Reg.

I bring to your kind attention that our institute PMKVY Batch 2018 – 2019 (Application No.: **1-3511384485**, Permanent ID: **1-16570211**) the below mentioned batched has completed the courses and placed in reputed companies. Herewith I have attached the placement details of the batch specified. So kindly release the 3<sup>rd</sup> and 4<sup>th</sup> installment as early as possible.

Course	ID
Domestic data entry operators (2 batch)	1-4112995256 & 1-4113187741
Computer peripherals and field technician (2 batch)	1-4112995254 & 1-4113187844
Automotive service technician (two and three wheelers) level 4	1-4112995258
Assistant electrician (2 batch)	1- 4113187846 & 1-4112995251

**Thanking You**



**Encl:**

Placement details of the batch 2018 – 2019 of all batches

**PRINCIPAL**

**PRINCIPAL**

PRATHYUSHA ENGINEERING COLLEGE  
Ponnur Street, Tiruvallur Road,  
Aranvoyal Kuppan, Tiruvallur - 602 025





HOD BIOTECH <hod.biotech@prathyusha.edu.in>

## Fwd: PMKVY-TI Final Progress Report for A.Y. 2017-18

1 message

**Prathyusha Principal** <principal@prathyusha.edu.in>  
To: HOD BIOTECH <hod.biotech@prathyusha.edu.in>

Thu, Feb 25, 2021 at 4:11 PM

Respected Sir/Madam,  
Herewith attached the copy for your kind perusal

Regards  
Dr.Ramesh P.L.N.  
Principal

----- Forwarded message -----

From: **Google Forms** <forms-receipts-noreply@google.com>  
Date: Thu, Feb 25, 2021 at 4:08 PM  
Subject: PMKVY-TI Final Progress Report for A.Y. 2017-18  
To: <principal@prathyusha.edu.in>

Thanks for filling out PMKVY-TI Final Progress Report for A.Y.  
2017-18

Here's what we got from you:

[View score](#)

## PMKVY-TI Final Progress Report for A.Y. 2017-18

For the information which is not relevant, kindly fill the detail as - or not relevant

Email address \*

principal@prathyusha.edu.in



Name of the Institute \*

PRATHYUSHA ENGINEERING COLLEGE

Institute Permanent ID issued by AICTE \*

1-16570211

Number of training courses sanctioned for your institute under PMKVY scheme \*

4

Names of the training courses sanctioned for your institute under PMKVY scheme  
(enter the course names separated by comma) \*

Asst Electrician, Domestic Data Entry Operator, Lab Technician/Asst-Life Sciences, Field  
Technician-Computing and Peripherals

Number of training courses actually run/conducted by the institute under PMKVY  
scheme \*

4

Names of the training courses actually run/conducted by the institute under  
PMKVY scheme (enter the course names separated by comma) \*

Asst Electrician, domestic Data Entry Operator, Lab Technician/Asst-Life Sciences, Field  
Technician-Computing and Peripherals

---

#### Installment Details

For the grants which you have not received, kindly fill the detail as 0 and for date 1/1/1990  
Amount should be mentioned in Rs.



Total amount/budget sanctioned for your institute under PMKVY scheme \*

1900000

Date and Number of Sanction Letter for your institute under PMKVY scheme \*

16/11/2017 & F.No. 2-6/D-NSQF/PMKVY-NSC/2016

First Installment Amount Received \*

575626

Date of Receipt of First Installment \*

MM DD YYYY

03 / 14 / 2018

Reference/GIA number of First Installment \*

SBINR5201803190004087

Second Installment Amount Received \*

524783

Date of Receipt of Second Installment \*

MM DD YYYY

10 / 18 / 2018

Reference/GIA number of Second Installment \*



FRM96109011643

Third Installment Amount received \*

273000

Date of Receipt of Third Installment \*

MM DD YYYY

09 / 16 / 2019

Reference/GIA number of Third Installment \*

55113200222

Fourth Installment Amount received \*

0

Date of Receipt of Fourth Installment \*

MM DD YYYY

01 / 01 / 1

Reference/GIA number of Fourth Installment \*

0

Any other amount received from AICTE under PMKVY scheme other the above four installments \*

0



Date of Receipt of amount mentioned under SNo.21 \*

MM DD YYYY

01 / 01 / 1

Whether Utilization Certificate (UC) of First Installment is submitted? \*

☒ YES

☐ NO

Submission Date of UC of First Installment \*

MM DD YYYY

01 / 21 / 2018

Expenditure (%) as reported in UC of First Installment \*

576502

Whether UC after Fourth Installment is submitted? \*

☐ YES

☒ NO

Submission Date of UC after Fourth Installment \*

MM DD YYYY

01 / 01 / 1

Expenditure (%) as reported in UC after Forth Installment \*

0



Total amount received from AICTE under PMKVY scheme \*

1374285

Total Expenditure till date under PMKVY scheme \*

1899902

Unspent amount left , if any \*

0

Whether unspent amount returned to AICTE ? \*

☐ YES

☒ NO

If answer to the above question is YES , then specify the mode of payment and transaction reference number

---

### Detail of Students

For the information which is not relevant, kindly fill the detail as - or not relevant  
For the Number field fill the default value as 0 and for date 1/1/1990

Total number of students admitted initially in all courses \*

150



Upload Details of students in excel sheet (containing the columns in table as follows in the same sequence: 1)Name of Student 2)Date of Birth 3)Highest Qualification at the time of enrolling in the course 4)Name of Institute of the Highest Qualification 5)Name of the course in which enrolled ) \*

Submitted files

☒ upload 1 pmkvy Enrolled student (2017-18) at PEC - Prathyusha Principal.xlsx

Upload Details of students in excel sheet who successfully completed the training and were issued the certificates (containing the columns in table as follows in the same sequence: 1)Name of Student 2)Date of Birth 3)Name of the course in which enrolled 4)Date of Certification) \*

Submitted files

☒ upload 2 pmkvy Passed student (2017-18) at PEC - Prathyusha Principal.xlsx

Upload Details of students in excel sheet who were successfully placed in wage employment after completion of training (containing the columns in table as follows in the same sequence: 1)Name of Student 2)Date of birth 3)Name of the course in which enrolled 4)Name of the organization where placed 5)Date of joining the Organization 6)Initial position/post in the Organization when placed 7)Amount of initially salary 8)Current position/post in the Organization 9)Current Salary 10)If left and joined some other organization then Name of that organization, Position and Salary) \*

Submitted files

☒ upload 3 pmkvy Placed student (2017-18) at PEC\_1 - Prathyusha Principal.xlsx

Upload the details regarding percentage(%) of students placed successfully in excel sheet (containing the columns in table as follows in the same sequence: 1)Name of the training course 2)Total number of certified students 3)Number of students placed 4)%age of placement 5)Number of students placed with wages at least equal to minimum wages as per the norms of the state concerned 6)%age of placement of such placed students as mentioned at SNo.5 ) \*

Submitted files



☒ upload 4 pmkvy Wages of placed student in course wise (2017-18) at PEC - Prathyusha Principal.xlsx

Upload Details of students in excel sheet who were Self Employed after completion of training (containing the columns in table as follows in the same sequence:

- 1)Name of Student 2)Date of Birth 3)Name of the course in which enrolled
- 4)Whether setup an enterprise?(YES or NO) 5)If YES , Name of the Enterprise
- 6)Monthly Earning from the enterprise 7)Any gainful livelihood enhancement occupation started based on the skill acquired through the training ) \*

Submitted files

☒ upload 5 pmkvy Startup student (2017-18) at PEC - Prathyusha Principal.xlsx

Additional Information , if any

FOURTH INSTALMENT IS STILL DUE TO BE RECEIVED

Create your own Google Form



### **3. ID card App**





ESTD. 2001

2018-2019

# PRATHYUSHA ENGINEERING COLLEGE

Approved by AICTE & Affiliated to Anna University, NAAC Accredited "A" Grade, National Board of Accreditation (NBA) Institution

Thiruvallur

July 22, 2018

To

Ms. Sudharani  
Founder  
ISpark Smart Solutions  
Thirumulaivoyal  
Chennai- 600062

Respected Madam.

Sub: Requisition for consultancy work. Reg.

We would like to introduce our Institution; Prathyusha Engineering College as one of the best Engineering Colleges, located in Thiruvallur district in the rural area of Tamilnadu functioning from the academic year 2001 onwards. We are accredited by NAAC-"A Grade" and ISO 9001:2008 certified and we are permanently affiliated to Anna University, Chennai. PEC currently has above 2,000 students from all over the country with 6 UG branches (ECE, EEE, CSE, CIVIL, MECH and Bio-Tech) and 4 PG programmes [ME (CSE), ME (Communication Systems), ME (Power Electronics) & ME (Structural Engg.)]. Our Institution is recognised as research centre for pursuing PhD /M.S by Anna University, Chennai

The aim of this letter is to request for consultancy work on Mobile App Development to improve and upgrade our industry institute interaction.

To meet the growing demand of technology, we need to explore our interaction with the Industry and add new flavour in our teaching and learning methodology. This in turn helps in building innovative thinking between our faculty members and students.

We have a eminent faculty and Knowledgeable student who can develop an application using current technologies and satisfy the industry needs. We will be happy if our request is been considered.

Awaiting for a Positive reply.

Thanking you

Yours truly

Dr.S.PADMAPRIYA  
PROFESSOR, CSE



October 1, 2018

To

Dr.S.PadmaPriya

Professor, CSE

Prathyusha Engineering College

Respected Madam

We are pleased to inform you that we have accepted your proposal on Mobile App Development. We will welcome you to be a part of our Mobile App development project on "ID Card App". We also encourage the student involvement in this work. The project begins in one month's time so we need to begin discussing details immediately.

We would like to arrange a personal meeting where we could review the project specifications and sign the necessary paperwork. We are excited to have a long and mutually beneficial business relationship.



Yours sincerely

For iSPARK SMART SOLUTIONS  
*[Signature]*  
Proprietor





Username  
password

LOGIN


no account yet? Create one

Screenshot


JOLLY CREATIONS  
Member  
Join April 2020

**YOUR NAME**  
**DESIGNATION.**

Id No :  
Blood :  
E-mail :  
Phone :



WWW.JOLLYCREATIONS.ORG

  
Upload profile pic

Name  
Name  
Email  
Email  
password  
password  
Phone Number  
Phone Number  
Designation  
Designation  
Blood Group

CREATE ACCOUNT

Already a member? Login



Date: 11.12.2018

**LETTER OF APPRECIATION**

This is to appreciate the exemplary, prompt and commendable technical contribution in the development of Mobile App for "ID Card App" by Mr.Jothesh of second year Computer Science and Engineering, Prathyusha Engineering College under the able guidance and efficient helm of Dr.S.PadmaPriya Computer Science and Engineering Department. The project development was done in the month of November 2018.

We wish the organization all success in future endeavors.



Yours sincerely

For iSPARK SMART SOLUTIONS  
*[Signature]*  
Proprietor





**iSPARK Supporting Solutions Pvt, Ltd.,**

**CASH VOUCHER**

No:...0345....

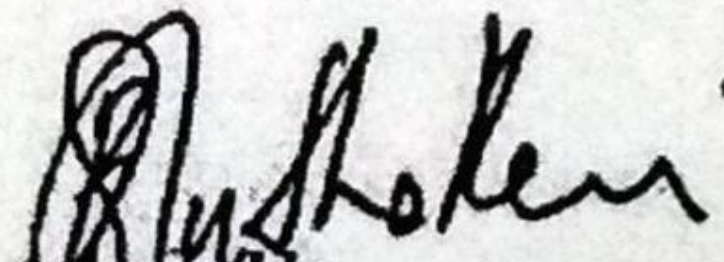
Date:..11.12.2018

Pay Mr. JOTHESH, 11 YEAR CSE, PRATNYUSHA ENGG COLLEGE

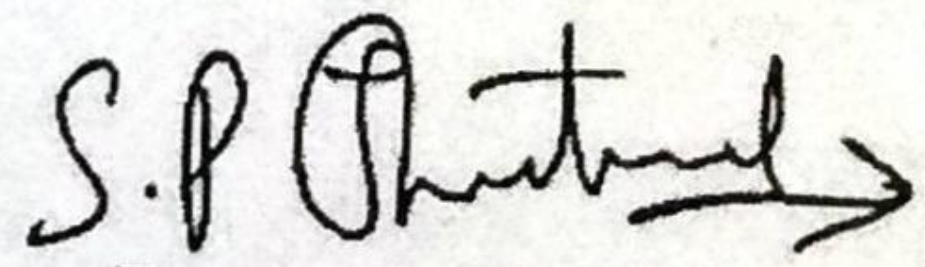
Rupees Fifteen Thousand Rupees

For Development of ID card APP

Rs. 15,000/-

  
Admin/Hr



  
Receiver's Signature

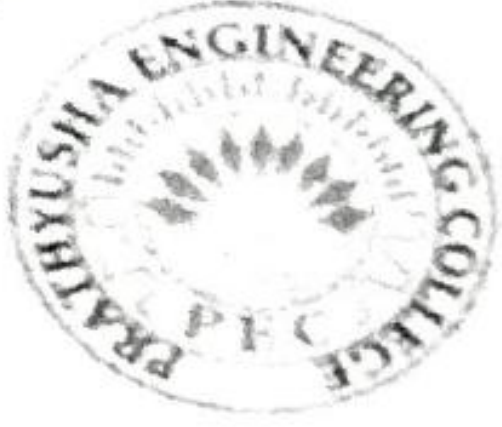


#### **4. Remote sensing of patient using power line and visible light communication**



264	Mr.B.Rajadurai Assistant Professor Dept. of Mechanical Engineering Sri Lakshmi Ammal Engg College, Selaiyur, Tambaram East, Chennai 600 126	Design of hybrid vehicle using compressed air and solar panel	Pappu Kumar Prateek Pandey Ram Kumar Pradeep Kumar	EME-39
265	Dr S.Baskara Sethupathy Professor Dept. of Mechanical Engineering S.A. Engg College Avadi Poonamallee Main Road, Chennai 600 077	Generation and testing of Bio oil from prosopis juliflora	R.Ram Kumar B.Navaneetha Krishnan N.G.Rakesh	EME-40
266	Mr.V.G.Pratheep Assistant Professor Dept. of Mechatronics Engg Kongu Engg College Perundurai – 638 052	Automatic money separator and estimator	M.Alex Paulraj C.Harish K.V.Meir Aravind	EME-41
267	Dr.G.Kumaresan Teaching Fellow Madras Institute of Technology Anna University, Radha Nagar Chrompet, Chennai 600 044	Investigation of Superplastic forming of Al 2024 and Al2024 reinforced with SiC for uniform thickness distribution	Guruarunpandian R	EME-42
268	Mr.S.Krishnakumar Associate Professor Dept. of Mechanical Engineering Prathyusha Engg College Aranyolkuppam-602025	Remote sensing of patient using power line and visible light communication	E.Kavitha J.Aparna M.Dhanalakshmi	EME-43
269	Mr.Prabakaran K Assistant Professor Dept. of EIE Erode Sengunthar Engg College, Erode – 638 057	Smart circuit breaker for electrical substation	Arivu Prasad R Ashok Kumar R Ashokkumar V	EME-44





**ESTD. 2001**

**PRATHYUSHA ENGINEERING COLLEGE**  
Poonamalle -Tiruvallur road, Chennai 602025

**REMOTE SENSING OF PATIENT USING POWER LINE AND VISIBLE LIGHT  
COMMUNICATION**

**STUDENT PROJECTS SCHEME 2016 - 2017**

**PROPOSAL SUBMITTED TO  
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY  
DOTE Campus, Chennai-600025**



# **REMOTE SENSING OF PATIENT USING POWER LINE AND VISIBLE LIGHT COMMUNICATION**

## **INTRODUCTION**

Nowadays, people begin to pay more and more attention to the health. To provide higher diagnostic efficiency and better patient experience, E-HEALTH has been lately proposed as efficient complements to the traditional healthcare services. E-HEALTH services will result in numerous and various types of data exchanges and thus reliable communication systems with high capacity in hospitals are urgently needed to distribute and exchange so many data flexibly. Moreover, considering the safety of the patient and precision instruments, electro-magnetic radiation of the communication systems should be as less as possible. These strict requirements have led to the abandonment of the widely deployed radio communication solutions, for example, WiFi or 3G, in the hospital scenarios.

With the successful commercialization of the In GaN based light-emitting diode (LED), the white LED has been widely deployed in the public illumination systems (transport, hospitals, etc.) instead of the current incandescent and fluorescent lights due to its better energy efficiency, smaller size and longer lifetimes. In fact, LEDs can be utilized not only for illumination but also for indoor visible light communications. The VLC technology has many attractive features, such as worldwide available and unlicensed bandwidth, non-interference with radio frequency bands, electro-magnetic radiation, high data rate (1 Gbps) and so on. These exciting assets have generated considerable research and industrial interests for indoor VLC, especially with the approval of the IEEE 802.15.7 standard.

On the other hand, power line communication (PLC) has been widely utilized in the power grid as an effective communication solution, since it does not require additional communication line and can cover almost all the grid locations. Because of all the equipment and electronic appliances can access the Internet when plugged into the PLC network, the PLC network is considered to be the natural backbone for indoor VLC systems, making the integration technique more and more attractive.



## **OBJECTIVES**

Modern hospitals are beginning to adopt E- HEALTH as efficient complements to the traditional healthcare services. To support the E-HEALTH services, a locatable, radiation-free and high-capacity communication system is urgently needed in hospitals. Power line communication (PLC) system can use the ubiquitous power line network to power the light-emitting diode (LED) lights while serving as the backbone network for the indoor visible light communication (VLC) systems naturally. In this project, an integrated broadband power line and visible light communication systems with OFDM modulation is proposed for the indoor hospital applications. This gives a brand-new solution to replace the conventional wireless communication systems in hospitals.

## **METHODOLOGY**

In this project, a new communication system is introduced for Hospital which is to be radiation free and transfer data at a faster than the existing system. Power Line Communication and Visible Light Communication system is used. Using this communication system the patients can be monitored and alerts the Doctors if the data is beyond normal. It makes doctors to automatically monitor the patients throughout the day.

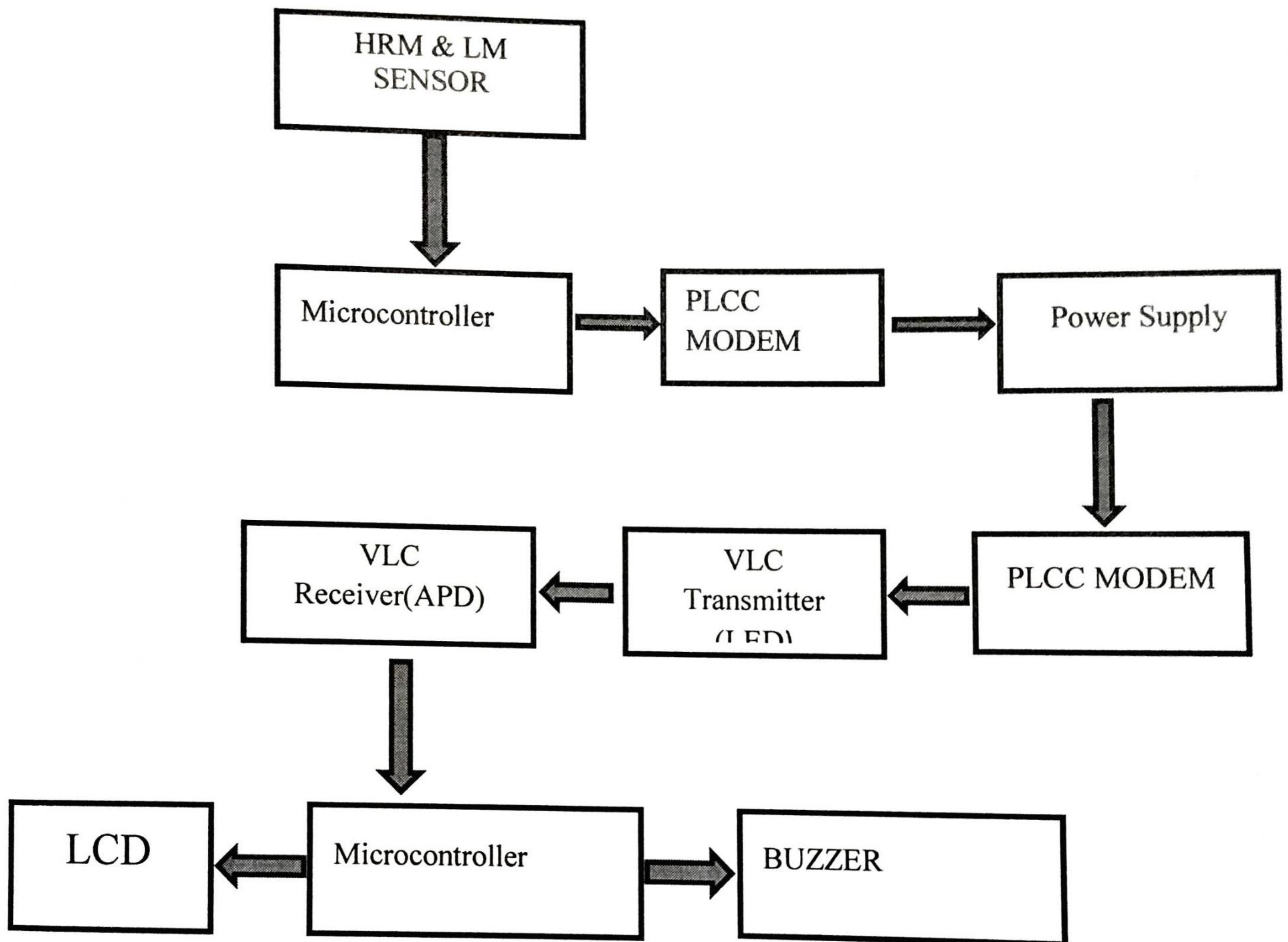
- For any communication, a communication medium like a wire or radio frequencies is required.
- With conventional RF communication bandwidth becoming more and more crowded by existing wireless communication technologies like Wi-Fi, Bluetooth etc, there is a need for new communication technologies that are not using RF.
- Visual Light Communication (VLC) and power line carrier communication (PLCC) is fast emerging as a new technology that can serve as an alternative to many wireless communication technologies.



- Instead of having a separate medium such as wires or radio frequency the project proposes to have visible light as medium.
- Data transfer is a single phenomenon that can be said for communication between different people/computer or to communication between machines or even remote control and monitoring operations. The project proposes a unique way of putting power lines as a medium for data transfer and more importantly bi directionally.



## BLOCK DIAGRAM

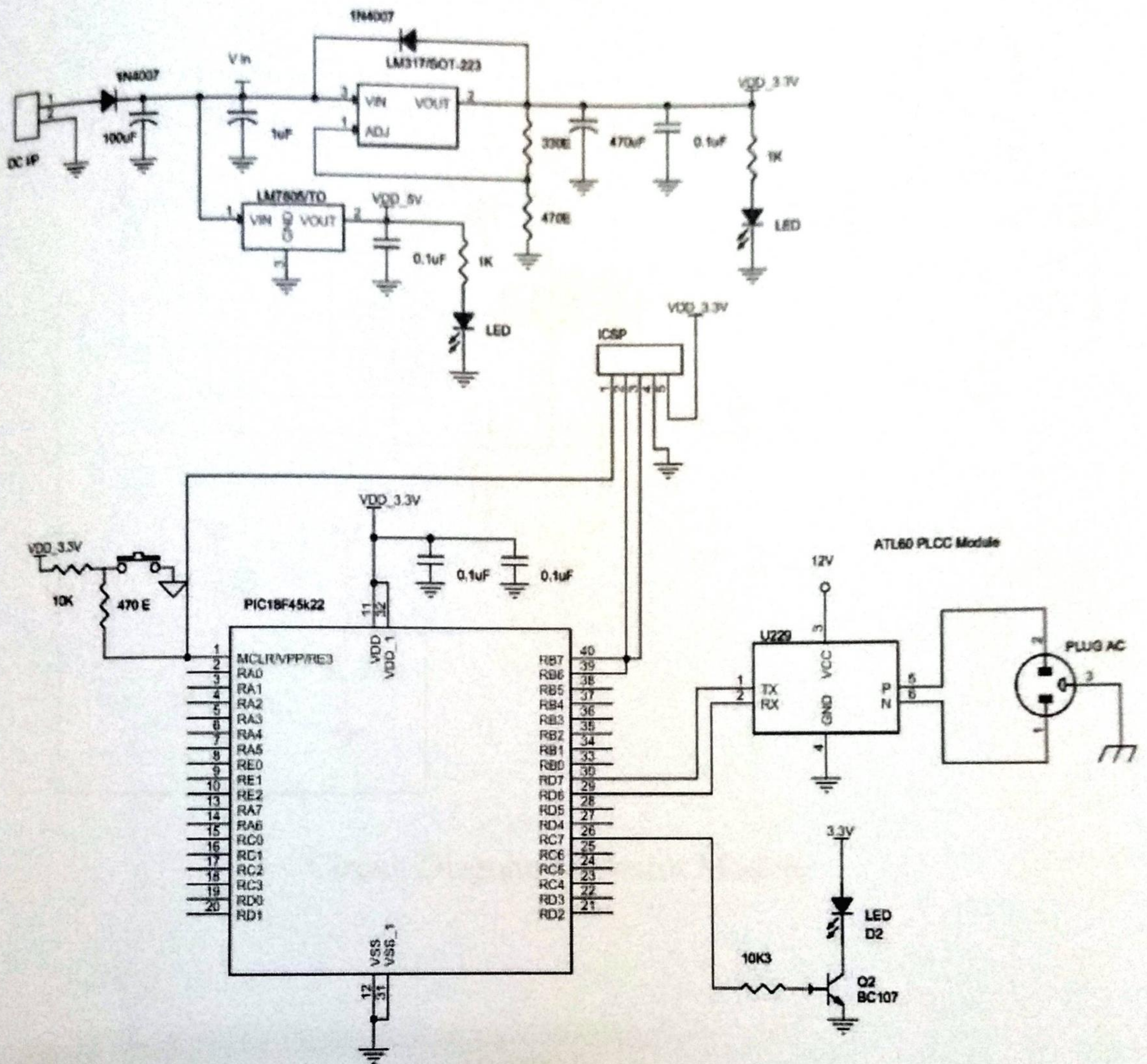


**Block Diagram of the Proposed System**



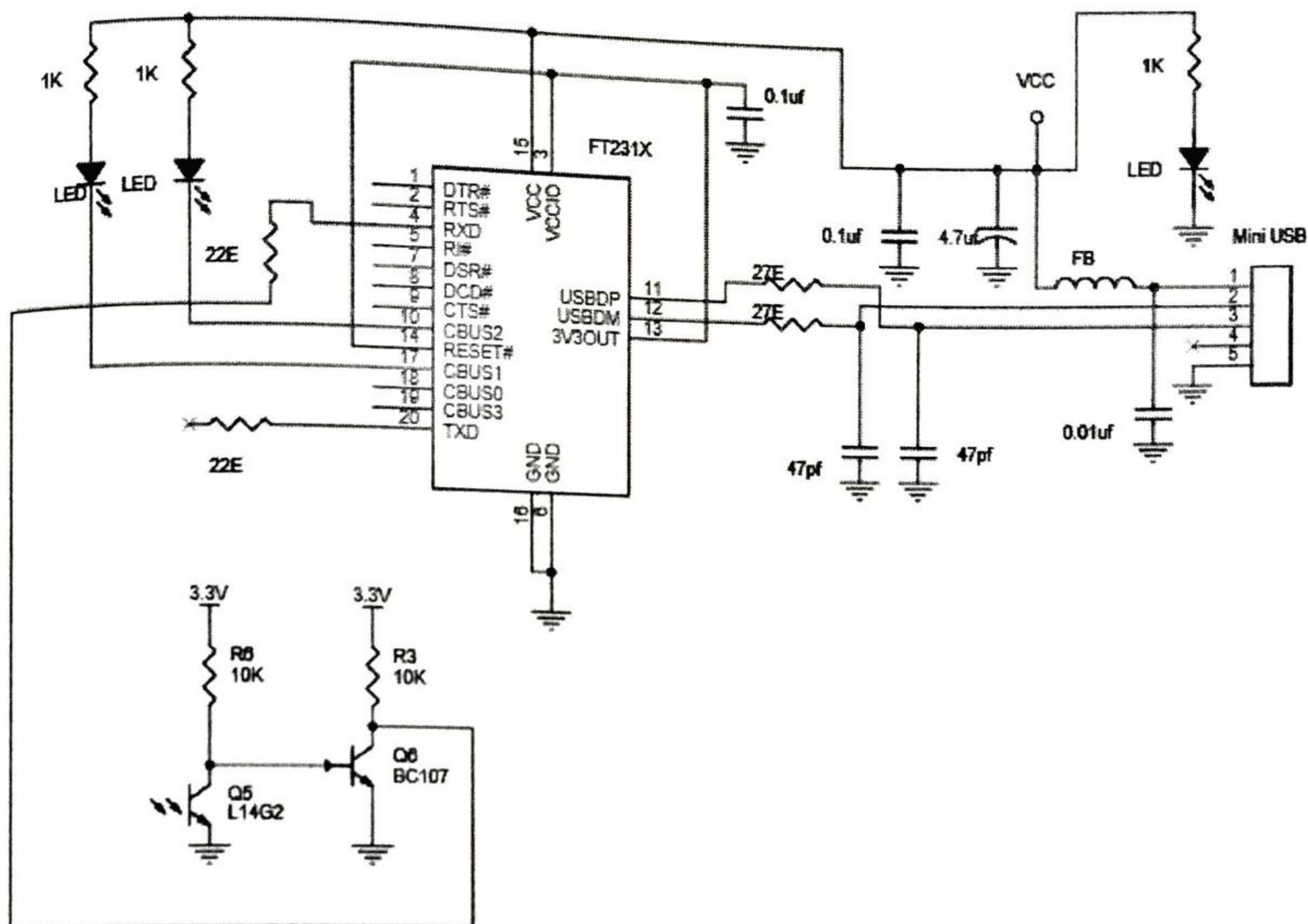






Circuit Diagram of Transmitter Module





Circuit Diagram of Doctor Module

## WORK PLAN

S.N	Nature of work	Duration for Completion	Deadline
1	Design of detailed circuitry	One month	December 21, 2016
2	Purchase of components and Fabrication of Printed circuit board	Three weeks	January 15, 2017
3	Hardware assembly	One month	February 08, 2017
4	Interfacing	Two weeks	March 8, 2017
5	Installation, Testing and Commissioning	Two weeks	March 18, 2017
6	Preparation of Project report	Two weeks	April 7, 2017



## BUDGET

### ESTIMATION OF EXPENDITURE

Sl.No	Name of the equipment	Required quantity	Cost per quantity	Overall cost in Rs
1	Practical Heart Rate Sensor	1	1500	1500
2	centigrade temperature sensor	1	1700	1700
3	Microcontroller	1	1700	1700
4	PLCC Modem ATL90	1	2000	3000
5	LCD	1	1000	1000
6	Photodiode	1	500	500
7	Miscellaneous	-	-	3000
Total				12400

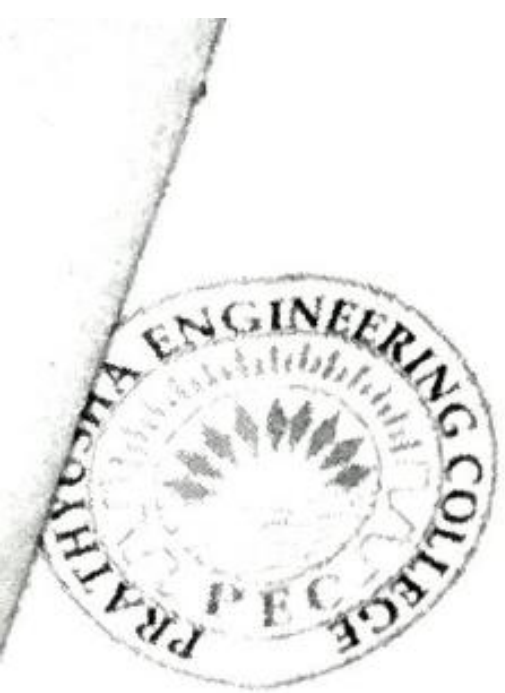


## **5. Design and implementation of pothole detection system**



238	Dr.A.Kalaimurugan Associate Professor Dept. of Mechanical Engg. Prathyusha Engineering College, Aranvoyaluppam Tiruvallur Dt. – 602 025	Design and Impkementation of pothole detection system	M.Selvamani N.Rudhran R.Ramkumar	EME-13	10000/-
239	Dr.P.Karunakaran Associate Professor Dept. of Mechanical Engg. Erode Sengunthar Engineering College, Thudupathi, Erode – 638 057	Design and Fabrication of flower tying machine	Sundharaj.A Mohanram.S Sowndriya.R Vishnukumar.P	EME-14	10000/-
240	Mrs.K.Gomathi Assistant Professor Dept. of Mechatronics Engg. School of Building and Mechanical Sciences Kongu Engineering College Perundurai – 638 052	Design and Fabrication of Automatic paper bag making machine	S.Sanjay Raj S.Selvaganapath y S.Soundara Kannan	EME-15	10000/-
241	Prof.C.Eswaramoorthy Assistant Professor Dept. of Mechanical Engg. Knowledge Institute of Tech. KIOT Campus, Kakapalayam (Po), Salem – 637 504	Smart Helmet with Alcohol detection	Rakulprasath.S Gokul.V Gowtham.T	EME-16	10000/-
242	Dr.A.Anandha Moorthy Assistant Professor Dept. of Mechanical Engg. Bannari Amman Institute of Technology Sathyamangalam – 638 401 Erode Dt.	Solar and Foot operated tricycle with foot controlled steering mechanism for disabled peoples	Gowtham.R Jalandiran.V Mahesh.K	EME-17	10000/-





**ESTD. 2001**

**PRATHYUSHA ENGINEERING COLLEGE**  
Poonamalle -Tiruvallur road, Chennai 602025

**DESIGN AND IMPLEMENTATION OF POTHOLE DETECTION SYSTEM**

**STUDENT PROJECTS SCHEME 2016 - 2017**

PROPOSAL SUBMITTED TO  
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY  
DOTE Campus, Chennai-600025



# **DESIGN AND IMPLEMENTATION OF POTHOLE DETECTION SYSTEM**

## **INTRODUCTION**

The increase in world's population has been increasing load on the Infrastructure. Roads have been flooded with the vehicular traffic. It has become more difficult to manage this traffic. This is the prime motivation behind making a vehicle intelligent enough to aid driver in various aspects. One of the increasing problems the roads are facing is worsened road conditions. Because of many reasons like rains, oil spills, road accidents or inevitable wear and tear make the road difficult to drive upon. Unexpected hurdles on road may cause more accidents. Also because of the bad road conditions, fuel consumption of the vehicle increases causing wastage of precious fuel. Because of these reasons it is very important to get the information of such bad road conditions, Collect this information and distribute it to other vehicles, which in turn can warn the driver. But there are various challenges involved in this process. First of all there are various methods to get the information about the road conditions. Then this information must be collected and distributed to all the vehicles that might need this information. Lastly the information must be conveyed in the manner which can be understood and used by driver. In this system the access point collects the information about the potholes in the vicinity of a wireless access point and distributes to other vehicles using a wireless broadcast. Here 'vicinity' is a user defined term. Ideally the vicinity is every route till the next access point.

The problem of vehicle overcrowding on roadways is becoming more common around the world. This is mainly due to the steadily increasing population around the globe in developed and third world countries alike. Expansions were made to the network of roads to accommodate the increasing number of vehicles. However, these changes resulted in an increase in the rate of deterioration of road



health, out-pacing current road health monitoring techniques and increasing the number of accidents.

The significant increase in the number of drivers can be put to use to help address these problems, through continuous monitoring and reporting of events by the drivers and their vehicles. However, to enlist the help of the public and their vehicles the system must be inexpensive to attract participants. To achieve such a goal we have to repurpose existing hardware available to all drivers that is capable of sensing, processing, and reporting events in real-time.

Current smart phones boast powerful processing capabilities supplemented by a number of sensors available to all smart phones with different degrees of quality and sensitivity. These phones are capable of acquiring information such as current location, direction, speed, and tilt and report this information through multiple forms of communication such as cellular, Wi-Fi, and Bluetooth.

In this project, we present a client server system that utilizes smart phone technology to monitor both road conditions and driver behavior collected from individual drivers, and to report any anomalies in real-time; thus providing better road conditions. Maintaining traffic and road safety standards is becoming a burden on the current infrastructure due to the increasing number of vehicles on the road. This is manifested in the form of increasing incidents of traffic congestion, collisions, and hazardous road conditions. These problems pose a significant cost for both governments and drivers. The presence of more vehicles on the road in a poorly managed environment also results in more fatal accidents. In Canada alone 1,66,725 people were injured during 2011 as a result of traffic collisions 2,006 of those injured died within one month of the accident. These numbers can be significantly reduced through better monitoring of road conditions and driving



behavior. The information collected can help agencies concerned with road safety address issues such as prolonged traffic congestion, slippery roads, potholes, and collisions. This information can also be shared directly and instantaneously with other drivers to avoid problems, such as bad road conditions and collision locations. This allows for safer traffic and better emergency response when needed.

Information dissemination systems for traffic safety exist in a number of countries. The main purpose of such systems is to detect events such as collisions, congestion, and poor road conditions. In general such systems are referred to as Intelligent Transportation Systems (ITS), and are discussed in Chapter 2. Although they offer a solution to the problem of the increasing volume of vehicles on the road in a timely manner, they require an extensive network of infrastructure that is both costly to install and maintain. Efficient capturing of information in ITS also requires a form of standardization to be implemented by car manufacturers. However, this process faces many problems due to the long life cycle of current light vehicles which on average is 9 years; moreover, at least 35% of new vehicles are expected to pass the 10 year mark, thus making the implementation of such systems impossibility for rapid deployment.

The above reasons make such systems unfit for deployment in many regions of the world that lack the financial support or the time to implement such systems. In order to address these shortcomings, we propose a system that is inexpensive, requires minimal hardware, and can be rapidly deployed using readily available technology. Our system does not seek to replace ITS technologies already in place, but offers solutions for the current environment until such systems are fully implementable.



## OBJECTIVES

The objective of this project is to present a system capable of detecting real-life events, on road conditions, and driver behavior, and report such events to a dedicated server. The system relies on smart phones to act as both the sensing platform and the reporting mechanism, thereby alleviating the need for an infrastructure-based approach. Data gathered from individual vehicles are aggregated to authenticate events based on the frequency of detection, and alert governmental agencies about the event, along with a measured level of urgency. The public is also allowed access to the collected information through an interactive map of recent unaddressed events to help avoid them. Smartphone are utilized in various ways to attain our goals. The system is designed to function without interrupting the driver's focus, and is seamlessly able to detect dangerous road conditions and driving behavior. In case the passenger would wish to contribute actively in the monitoring process, the system also allows for a detailed mode of operation that entails interaction and media collection.

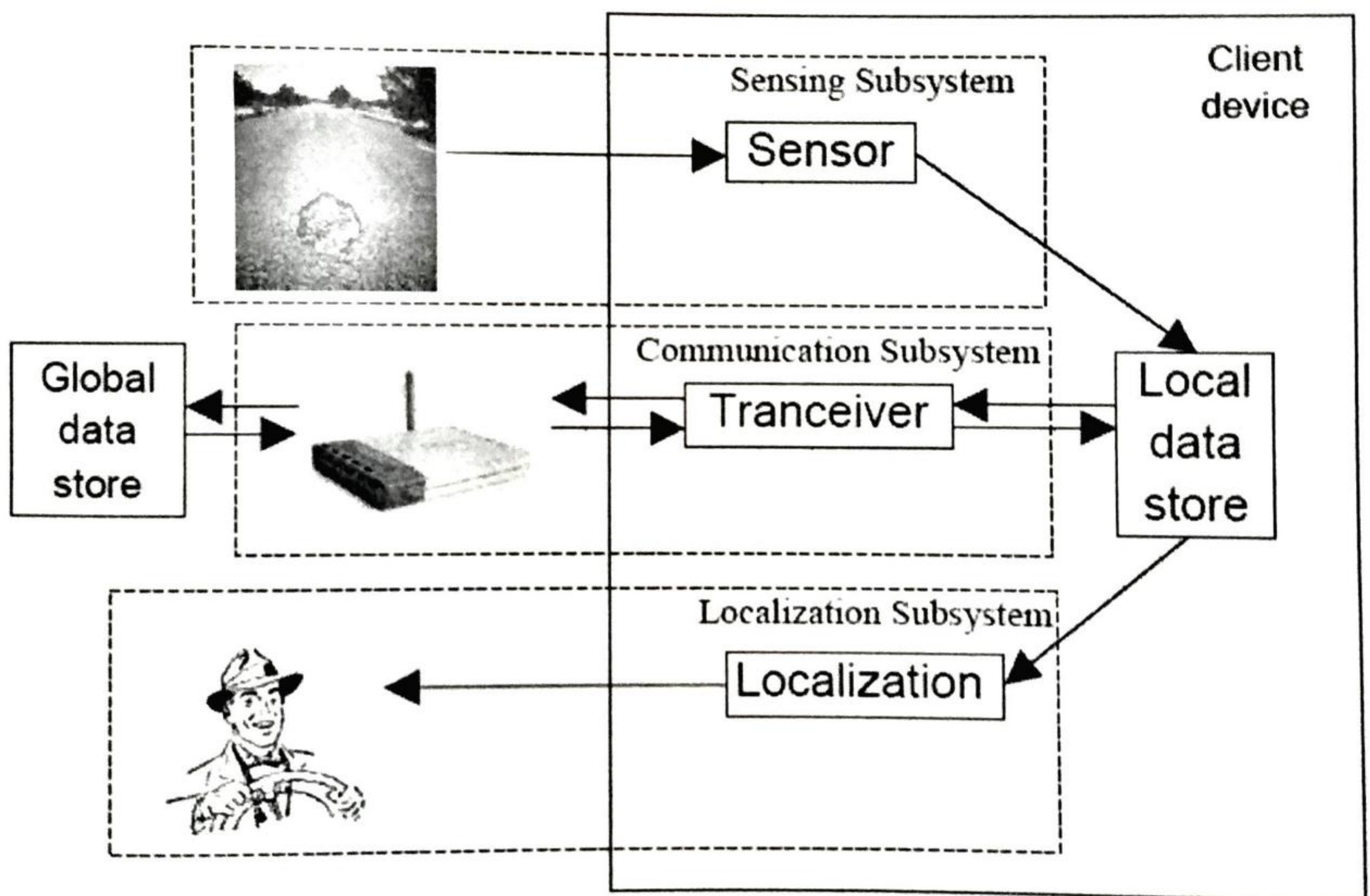
## METHODOLOGY

Pothole detection system is a system that aims at warning the driver about the uneven roads and potholes in its path. This system consists of two components one is mobile node and other is the access point. Access points responsible for storing the information about potholes in its vicinity, taking the feedback from vehicles, updating the information in repository and broadcasting the information to other vehicles. Whereas Mobile node which is the small device placed in vehicle is responsible for sensing those potholes which it did not have previous information about, locating and warning the driver about the potholes which it has information about, and giving the data about newly sensed pothole to access point. The whole scenario works as follows. While deploying the access point we feed in some initial data about potholes to it. Then it keeps on broadcasting the data.

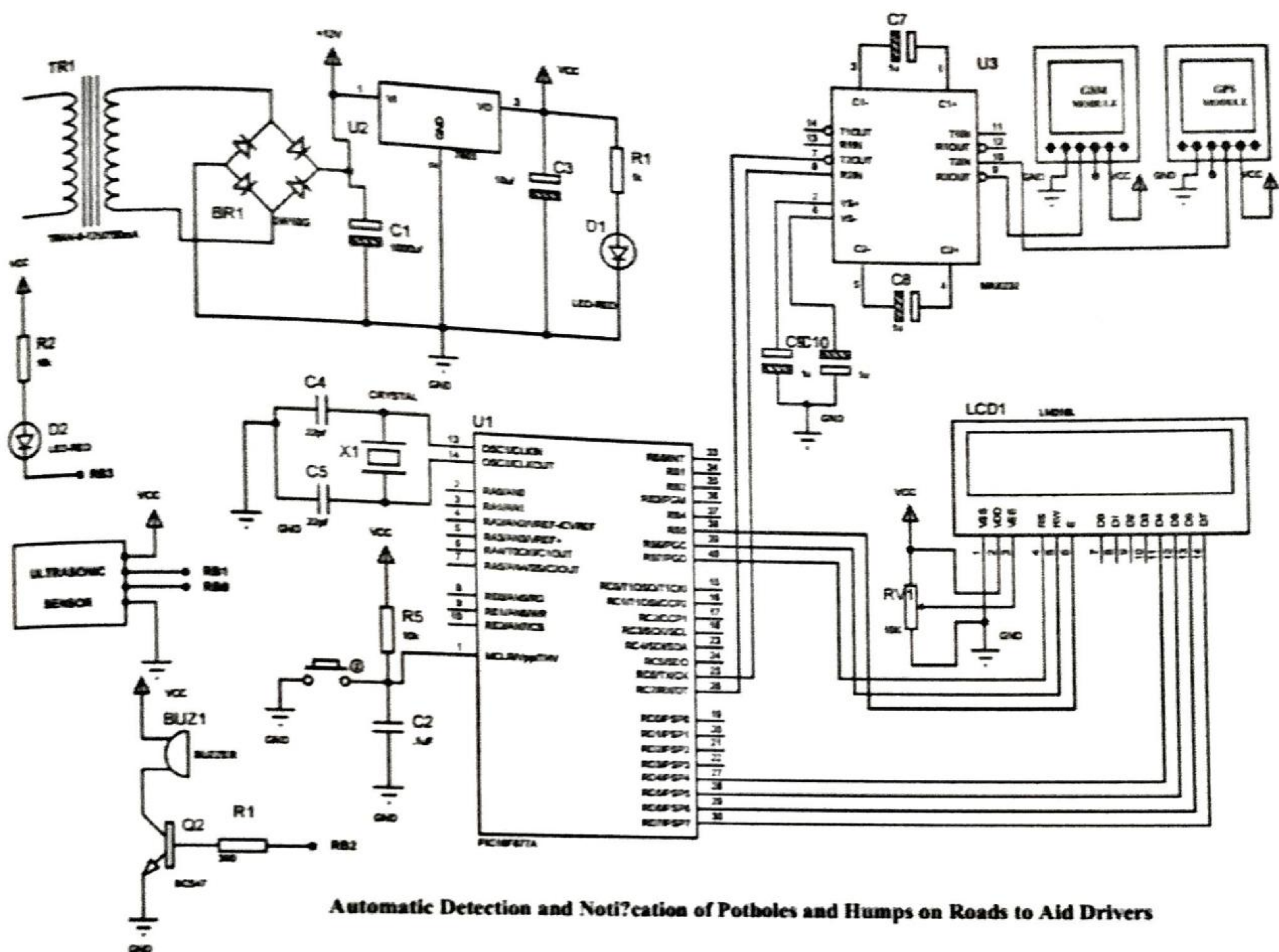


Vehicle equipped with the client device catches that data. Now the device has the information about the locations of potholes. The device is responsible for warning the driver about occurrences of pothole. But new potholes may always be formed because of environment or fatigue. So client device also acts as a sensor and finds out the occurrence of newly formed potholes on the road. If it finds out any new potholes it gives data of new pothole to Access point in terms of the feedback. Access points updates this information to its data store and then adds it to the information broadcast.

### BLOCK DIAGRAM







Circuit Diagram

### WORK PLAN

S.N	Nature of work	Duration for Completion	Deadline
1	Design of detailed circuitry	One month	December 18, 2016
2	Purchase of components and Fabrication of Printed circuit board	Three weeks	January 10, 2017
3	Hardware assembly	One month	February 12, 2017
4	Interfacing	Two weeks	March 15, 2017
5	Installation, Testing and Commissioning	Two weeks	March 10, 2017
6	Preparation of Project report	Two weeks	April 12, 2017



## BUDGET

### ESTIMATION OF EXPENDITURE

Sl.No	Name of the equipment	Required quantity	Cost per quantity	Overall cost in Rs
1	Ultrasonic Sensor	1	3000	3000
2	Microcontroller	1	2500	2500
3	Optocoupler	4	600	2400
4	Step down transformer	1	500	500
5	GSM modem	1	3000	3000
6	Buzzer	1	200	200
7	Miscellaneous	-	-	2500
Total				14100



## **6. Entrepreneurship awareness camp**



07/01/2021

PRATHYUSHA ENGINEERING COLLEGE Mail - Fwd: 2nd & Final Installment of Programme/s conducted under DST-NIMAT Project 2017-18



Jayaseelan MECH <jayaseelan.mech@prathyusha.edu.in>

## Fwd: 2nd & Final Installment of Programme/s conducted under DST-NIMAT Project 2017-18

HOD MECH <hod.mech@prathyusha.edu.in>

Tue, Jan 5, 2021 at 1:53 PM

To: "jayaseelan.mech" <jayaseelan.mech@prathyusha.edu.in>

Dr. P. JAYARAMAN,  
PROFESSOR & HEAD,  
DEPARTMENT OF MECHANICAL ENGINEERING  
PRATHYUSHA ENGINEERING COLLEGE,  
TIRUVALLUR,  
PIN: 602025  
MOBILE : 9840397361  
LAND LINE: 044-37673750

—— Forwarded message ——

From: Rituraj Singh <riturajsingh@ediindia.org>

Date: Fri, Jun 15, 2018 at 12:53 PM

Subject: 2nd & Final Installment of Programme/s conducted under DST-NIMAT Project 2017-18

To: <principal@prathyusha.edu.in>, HOD MECH <hod.mech@prathyusha.edu.in>, <admin@prathyusha.edu.in>

Cc: psolanki psolanki <psolanki@ediindia.org>

**Dr. P. L. N. Ramesh**

Principal

**Prathyusha Engineering College**

Poonamallee - Trivellore High Road

Aranvoyal Kuppam

District - Trivellore

**Chennai - 602 025**

Tamil Nadu

**Kind Attention:** Mr. P. Jayaraman, Professor & Head (Dept. of Mech Engg.)

Dear Sir,

**Sub: 2<sup>nd</sup> & Final Installment of Programme/s conducted under DST-NIMAT Project 2017-18**

Warm Greetings from Entrepreneurship Development Institute of India!

This is with reference to the programme/s conducted under DST-NIMAT Project 2017-18. As per the Agreement, we have already paid the first installment for the programme/s. Now we are releasing second & final installment of **Rs. 10000/-** which has already been credited in your account on **13/06/2018**. The Detail



break-up of the total amount is as following.

Sr. No.	Programme / Activity	No. of Programmes Sanctioned	2nd Installment per programme @ 50% (Rs.)	Total Amount of the programmes (Rs.)
1	EAC	1	10000/-	10000/-
Total				10000/-

You are requested to please acknowledge the receipt.

Your cooperation is really appreciated. We are sure that in future we will have same cooperation for the entrepreneurship development activity.

Thanking you, with regards,

Yours sincerely,

Prakash Solanki

—  
Rituraj Singh  
Project Officer  
Entrepreneurship Development Institute of India  
P.O Bhat 382428 Dist Gandhinagar,  
Gujarat  
M:- 8000699250, 8780407375  
Tel- 079-23969159, 61, 63  
Fax- 079-23969164



**REPORT ON ENTREPRENEURSHIP AWARENESS CAMP (EAC)  
CONDUCTED FROM 04.01.18 TO 06.01.18**

**FUNDED BY NSTEDB**

(National Science and Technology Entrepreneurship Development Board, Govt.  
of India)

**DST-NIMAT PROJECT 2017-18**

Prathyusha Engineering College  
Poonamallee-Trivellore High Road,  
Aranvoyal Kuppam, Trivellore Dist.,  
Tamil Nadu, India, PIN: 602025  
Phone: 044-37673750



## DST – NIMAT PROJECT

### PROFORMA FOR POST PROGRAMME REPORT (PPR) OF EAC

1. Name & Address of Programme :  
Implementing Agency  
(with Tel/ Fax /E-mail) : **Prathyusha Engineering College,**  
Poonamallee-Trivellore High Road,  
Aranvoyal Kuppam, Trivellore Dist.,  
Tamil Nadu, India, PIN: 602025  
Phone: 044-37673750  
Fax: 91-44-37673703  
Email: [admin@prathyusha.edu.in](mailto:admin@prathyusha.edu.in),  
[hod.mech@prathyusha.edu.in](mailto:hod.mech@prathyusha.edu.in)  
Website: [www.prathyusha.edu.in](http://www.prathyusha.edu.in)
2. Programme Location : Seminar Hall, Prathyusha Engg.College
3. Programme Date : From 04.01.18 to 06.01.18
4. Name of the Coordinator : Dr. P. Jayaraman, Professor, Mech Engg.
5. No. of candidate attended the programme : 75 (Male 58 Female 17)
6. List of participants : *ANNEXURE – I*
7. Program schedule : *ANNEXURE – II*
8. List of resource persons : *ANNEXURE – III*
9. List of industries visited : *ANNEXURE – IV*
10. Participant's feedback : *ANNEXURE – V*
11. Photographs of Programme : Attach one group photo, one classroom  
photo and one industry/institute visit photo



**ANNEXURE – I****LIST OF PARTICIPANTS**

Sl.No	Name of Participant	Age	Male/F emale	Education	Category Gen / SC / ST / OBC / Minority	Aadhar Number
1	2	3	4	5	6	7
1	Abirami. P	21	Female	B.E./EEE(IV Year)	OBC	3618 8754 5681
2	Sai Lakshmi. B.	21	Female	B.E./EEE(IV Year)	GEN	4033 2273 7723
3	Parimala. M	21	Female	B.E./EEE(IV Year)	OBC	3136 8400 5354
4	Parimala Priya. U.	21	Female	B.E./Civil (IVYear)	GEN	4233 1219 2106
5	Vaishalli. G	21	Female	B.E./Civil (IVYear)	GEN	4521 3927 5679
6	Rooshmica. K.	21	Female	B.E./CSE (IVYear)	GEN	6597 6916 1350
7	Yureka. G	21	Female	B.E./CSE (IVYear)	GEN	4716 7699 2570
8	Priyadharshini. R	21	Female	B.E./CSE (IVYear)	OBC	3750 3091 6186
9	Shaik Ruksaar	20	Female	B.E./CSE (IVYear)	OBC	7060 7406 2465
10	Swathi. N.C	20	Female	B.E./CSE (IVYear)	OBC	3083 9829 9630
11	Shajini. V	20	Female	B.E./CSE (IVYear)	OBC	6082 3359 4729
12	Sowmiya. K.	21	Female	B.E./CSE (IVYear)	GEN	3462 4285 7462
13	Ramya. M	21	Female	B.E./CSE (IVYear)	OBC	5896 0455 9250
14	Nivetha. M. A	21	Female	B.E./CSE (IVYear)	OBC	6640 6703 2516
15	Subhasini. P	21	Female	B.E./CSE (IVYear)	OBC	5701 7879 9217
16	Vijayalakshmi. T.S	20	Female	B.E./CSE (IVYear)	OBC	9415 4640 1751
17	Surabhi. P	21	Female	B.E./CSE (IVYear)	GEN	2949 2510 9617
18	Balaji .R	21	Male	B.E./Mech/(IV Year)	GEN	3745 8151 6063
19	Bhuvanesh .S	21	Male	B.E./Mech/(IV Year)	OBC	7326 7426 4078
20	Chavali sarathchandra	21	Male	B.E./Mech/(IV Year)	OBC	2707 7263 9428
21	Chinnarasu .M	21	Male	B.E./Mech/(IV Year)	OBC	8821 3433 8499
22	Chittem mounikumar	21	Male	B.E./Mech/(IV Year)	OBC	6807 1177 4888
23	Gokul .K	21	Male	B.E./Mech/(IV Year)	OBC	2960 1811 8973
24	Hariharan .S.B	21	Male	B.E./Mech/(IV Year)	OBC	2024 2767 6866
25	Harthik .T	21	Male	B.E./Mech/(IV Year)	OBC	5296 3515 9931
26	Jayavel .R	21	Male	B.E./Mech/(IV Year)	OBC	8284 2505 9773
27	Kanuparthi aravind reddy	20	Male	B.E./Mech/(IV Year)	GEN	3871 6147 1104
28	Lokesh .M	21	Male	B.E./Mech/(IV Year)	GEN	7728 8944 5361
29	Madesh .K	21	Male	B.E./Mech/(IV Year)	OBC	6680 6229 4181
30	Magesh .E	21	Male	B.E./Mech/(IV Year)	SC	7037 6238 1856
31	Mohammad Danish Muttain Khan	21	Male	B.E./Mech/(IV Year)	OBC	3712 7364 7834
32	Mohankumar .V	21	Male	B.E./Mech/(IV Year)	OBC	5834 5804 5590
33	Murali muruganantham. J	21	Male	B.E./Mech/(IV Year)	OBC	9082 0448 5332



34	Paluri vijaya bhaskara reddy	21	Male	B.E./Mech/(IV Year)	GEN	5107 5970 3612
35	Ramakrishna .G	21	Male	B.E./Mech/(IV Year)	GEN	7201 9318 0633
36	Santhosh kumar. B	21	Male	B.E./Mech/(IV Year)	GEN	2683 8081 1522
37	Santhosh kumar. M	21	Male	B.E./Mech/(IV Year)	GEN	9227 0417 1708
38	Saravanan. R	21	Male	B.E./Mech/(IV Year)	OBC	5016 7030 6296
39	Sasikumar. S	21	Male	B.E./Mech/(IV Year)	SC	7948 1978 4088
40	Selvaprakash. S	21	Male	B.E./Mech/(IV Year)	OBC	7119 7272 8459
41	Shanmugam. V	21	Male	B.E./Mech/(IV Year)	OBC	3255 0556 9026
42	Shanmuga rajan. B	21	Male	B.E./Mech/(IV Year)	OBC	5763 9444 9614
43	Sheik Mohammad Tameem	21	Male	B.E./Mech/(IV Year)	OBC	2323 1213 9723
44	Siva. J	22	Male	B.E./Mech/(IV Year)	OBC	3794 2528 3962
45	Sivaprakasam. K	21	Male	B.E./Mech/(IV Year)	OBC	4053 4759 5484
46	Sivarajan. R	21	Male	B.E./Mech/(IV Year)	OBC	3488 0676 7438
47	Somalingam. S	21	Male	B.E./Mech/(IV Year)	OBC	4620 6756 3924
48	Srivathsan. M	21	Male	B.E./Mech/(IV Year)	GEN	3432 5476 6477
49	Tharun. K	21	Male	B.E./Mech/(IV Year)	OBC	6503 5750 8832
50	Ullasa anadababu	21	Male	B.E./Mech/(IV Year)	SC	2074 6374 9000
51	Vasudevan. B	21	Male	B.E./Mech/(IV Year)	OBC	6196 4458 6903
52	Balaji. P	21	Male	B.E./Mech/(IV Year)	GEN	9643 4309 1406
53	Kola Krishnaprasad Chowdary	20	Male	B.E./Mech/(IV Year)	GEN	7928 3480 4146
54	Yerramsetty Saiharish	21	Male	B.E./Mech/(IV Year)	GEN	2253 5315 6037
55	Padmesh. B	21	Male	B.E./EEE(IV Year)	OBC	2665 7730 2468
56	Shrre Vishnu. A. R.	20	Male	B.E./EEE(IV Year)	OBC	2062 0238 8813
57	AbithRahuman. N	21	Male	B.E./ECE(IV Year)	OBC	6902 6117 2509
58	Sairam. B	21	Male	B.E./ECE(IV Year)	GEN	5309 8025 2366
59	Orumpati Vamsikrishna	21	Male	B.E./ECE(IV Year)	SC	3473 4434 3370
60	Kedhar Nath. M	21	Male	B.E./ECE(IV Year)	GEN	6348 2520 2002
61	Dheena dayalan. P	21	Male	B.E./EEE(IV Year)	SC	8809 3961 0243
62	Balachandar. K	22	Male	B.E./EEE(IV Year)	OBC	7036 1843 1202
63	Balu Ashok	21	Male	B.E./EEE(IV Year)	GEN	5086 1981 9852
64	Balachandar. S	21	Male	B.E./EEE(IV Year)	OBC	7546 5848 0789
65	Elango. T	21	Male	B.E./EEE(IV Year)	OBC	2700 0661 0192
66	Dilli babu. G	21	Male	B.E./EEE(IV Year)	OBC	7273 3931 5740
67	Ajith kumar. S	20	Male	B.E./EEE(IV Year)	OBC	3924 2133 1626
68	Krishna kumar. M	21	Male	B.E./EEE(IV Year)	OBC	3536 2404 6884
69	Arun. J	21	Male	B.E./EEE(IV Year)	OBC	7214 0390 7459
70	Kotla Janardhan reddy	21	Male	B.E./Civil(IV Year)	OBC	9255 0040 6985
71	Dinesh kumar. K	21	Male	B.E./Civil(IV Year)	GEN	9674 3602 1610
72	Fasik Ahamed.S	21	Male	B.Tech./IT(IV Year)	OBC	6452 3430 2583
73	Ajith kumar. B	20	Male	B.Tech./IT(IV Year)	OBC	8796 9736 5148
74	Rahul raj. A	20	Male	B.E./Civil(IV Year)	OBC	9520 1626 7474
75	Thirunthaiyan. K	20	Male	B.E./Civil(IV Year)	OBC	2191 0912 6316



## ANNEXURE – II

### PROGRAMME SCHEDULE

Date and Day	Session	Subject /Topic	Faculty
04.01.18 1 <sup>st</sup> Day	I	Historical background, Indian values, Entrepreneurship and the present scenario.	Dr. G. Gangi Reddy, MD, TBI, University of Madras
	II		
	III	Identification of opportunities for entrepreneurs, Mechanism of product selection and technology-assistance from R&D labs and others on choice of technology.	Mr. V. Ramakrishnan, Deputy Director, MSME, Govt. of India,
	IV		
05.01.18 2 <sup>nd</sup> Day	I	Procedure to start a SSI unit, General concept about the Govt. formalities, Rules & regulation, location and different aspects of an industrial venture and commercial aspects of SSI unit	Dr. K. Gurusami, Project Manager, TBI, St.Peter's University, Chennai
	II	Business planning, Business plan essentials, Executive summary, Business strategy, Marketing strategy, Competitive strategies, Financial budgets & Forecasts, Business plan format, Financial aspects of SSI unit including salient features of a Project report.	Dr. K. Gurusami, Project Manager, TBI, St.Peter's University, Chennai
	III	Support and financial assistance from Govt. agencies, Banks, Financial institutions, SFCs and others-securities demanded by FIs/banks etc	Mr. M. M. Shah, MD, D-Cube Designs (Startup company), Chennai,
	IV	Start ups, staffing, Management aspects, Industrial dispute act, insight of The Factories act, compliance under The Factories act, Employees state insurance scheme, Payment of Bonus act, 1965 and Payment of minimum wages act etc.	Dr.P. Jayaraman, Prof/Mech, Coordinator, EAC Programme, Prathyusha Engineering College
06.01.18 3 <sup>rd</sup> Day	I	Industrial visit to M/s. Popular Engineering Pvt. Ltd., Ekkattuthangal, Chennai-32 & iacharya silicon Ltd., Kodambakkam	Managing Partners of respective companies. Mr. N. Giri & Mr. S. Ganesh kumar.
	II		
	III		
	IV		



**ANNEXURE III**  
**LIST OF FACULTY/RESOURCE PERSON**

<b>Sl . No</b>	<b>Name and address</b>	<b>Designation</b>	<b>Organization</b>
1	Dr. G. Gangi reddy, Managing Director, TBI, University of Madras, Chennai, TN	Managing Director	TBI, University of Madras, Chennai
2	Mr. V. Ramakrishnan Deputy Director, MSME, Govt. of India	Deputy Director	MSME, Chennai, Tamil Nadu
3	Dr. K. Gurusami, Project Manager, TBI, St.Peter's University, Chennai	Professor	TBI, St.Peter's University, Chennai- 54
4	Mr. M. M. Shah, MD, D-Cube Designs (Startup company), Chennai.	Managing Director	D-Cube Designs, Chennai-25
5	Dr. P. Jayaraman, Professor, Dept of Mech, Prathyusha Engg.College, Trivellore- 602025	Professor	Prathyusha Engg.College, Trivellore-602025



**ANNEXURE – IV**

**LIST OF INDUSTRIES VISITED**

Sl. No.	Name, Address and contact details	Products / Service
<b>1</b>	<b>2</b>	<b>3</b>
<b>1</b>	M/s. Popular Engineering Pvt. Ltd., 41, 3rd Cross st., (Duraishamy st.,) Vishalakshi Nagar, Ekkattuthangal, Chennai-32, Ph: 95516 85236	Fabrication of Injection moulding dies
<b>2</b>	M/s. iacharya silicon Ltd., New No: 39-B, Thirumangalam Flats, 5th Cross St., Trust puram, Kodambakkam, Chennai-24, Ph: 044-43565238, 09790941993	Design and Fabrication of Solar panel and installation of solar power plant for corporate and house hold applications.



## ANNEXURE – V

### **FEED BACK ANALYSIS OF PARTICIPANT - SUMMARY**

Programme Location: PRATHYUSHA ENGG.COLLEGE, TIRUVALLUR

Date : From 04.01.18 To 06.01.18

Total No. of Participants: 75

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Q.1) From where you got the information about this programme?

- |                             |               |
|-----------------------------|---------------|
| a) Pamphlets / Broacher     | 72 Nos. (96%) |
| b) News paper Advertisement | 00 Nos. (00%) |
| c) Posters/ Hand Bills      | 00 Nos. (00%) |
| d) Other (word of mouth)    | 03 Nos. (04%) |

Q.2) What is your opinion about the duration of Programme?

- |             |               |
|-------------|---------------|
| a) Short    | 00 Nos. (00%) |
| b) Adequate | 70 Nos. (93%) |
| c) Long     | 05 Nos. (07%) |

Q.3) Did you find the Programme useful?

- |                   |               |
|-------------------|---------------|
| a) Very much      | 60 Nos. (80%) |
| b) To some extent | 15 Nos. (20%) |
| c) Not useful     | 00 Nos. (00%) |

Q.4) Did it fulfill your expectations?

- |                   |               |
|-------------------|---------------|
| a) Yes            | 72 Nos. (96%) |
| b) To some extent | 03 Nos. (04%) |
| c) No             | 00 Nos. (00%) |

Q.5) Planning of the Programme

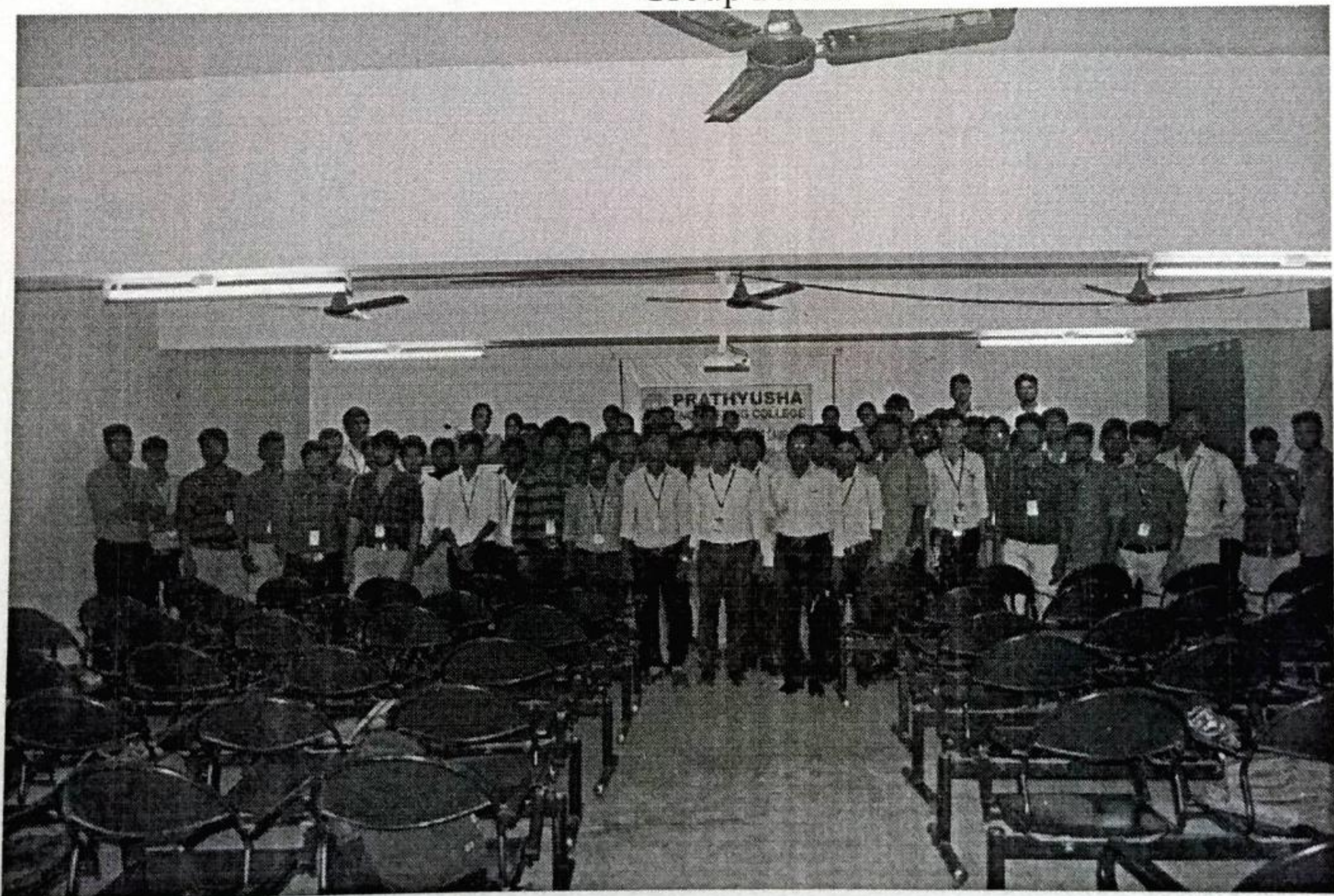
- |                 |               |
|-----------------|---------------|
| a) Excellent    | 69 Nos. (92%) |
| b) Very good    | 06 Nos. (08%) |
| c) Good         | 00 Nos. (00%) |
| d) Satisfactory | 00 Nos. (00%) |
| e) Poor         | 00 Nos. (00%) |



Photograph of Programme  
Class Room Photo

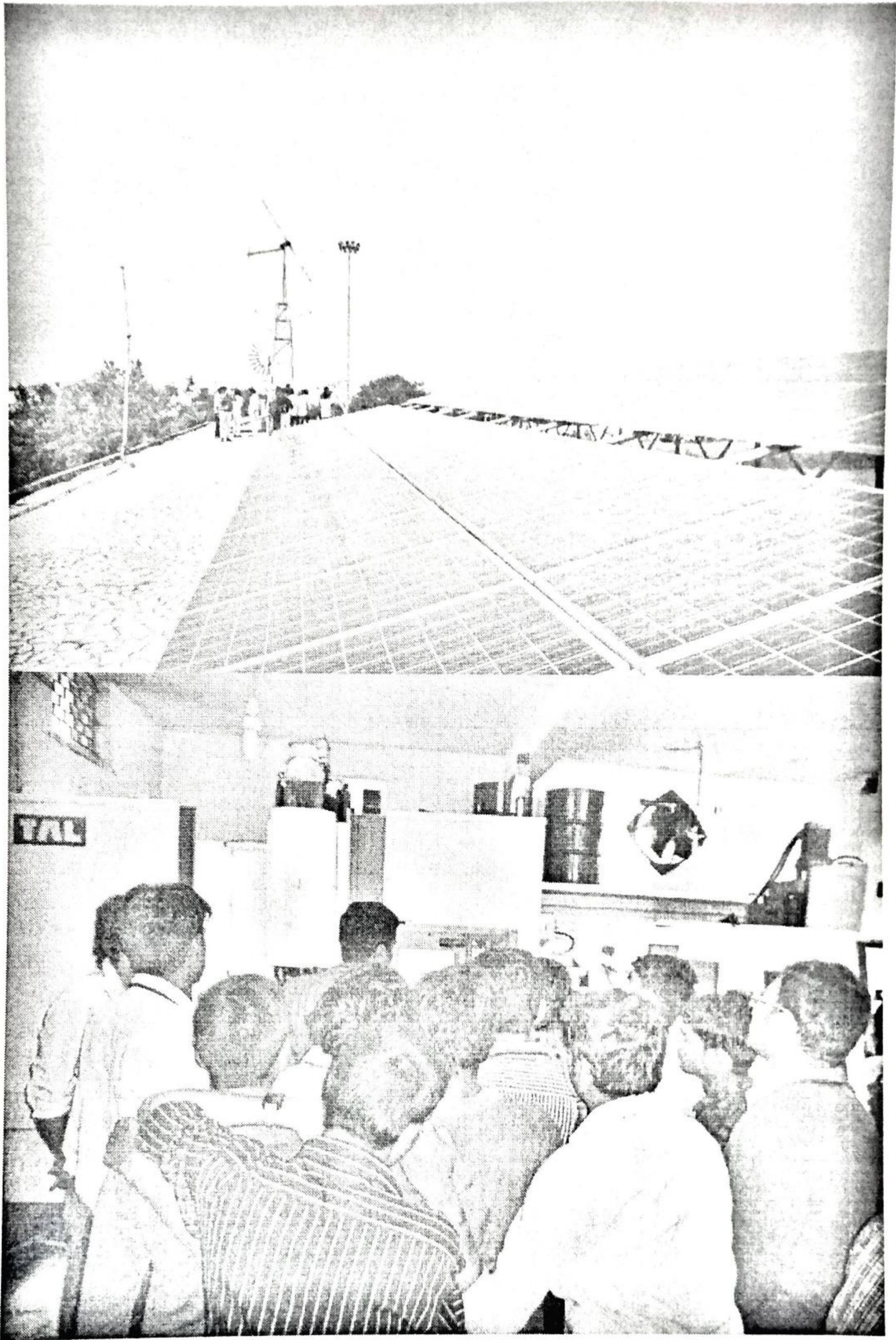


Group Photo





## Industrial Visit Photo





# MINISTRY OF SCIENCE AND TECHNOLOGY

## DEPARTMENT OF SCIENCE AND TECHNOLOGY

### UTILIZATION CERTIFICATE

**1. Name of the guide and address:**

Dr.P. Jayaraman

Department of Mechanical Engineering

Prathyusha Engineering College

Aranvoyal Kuppam

Tiruvallur-602025

**2. Title of the Program : Entrepreneurship Awareness camp**

**3. Project code : DST-NIMAT PROJECT 2017-18**

It is certified that a sum of Rs 0.20 Lakhs (Rupees Twenty thousand Only) sanctioned by the council for carrying out above mentioned Entrepreneurship Awareness camp has been utilized for the purpose for which it was sanctioned and sum Rs Zero (Nil) remaining unutilized is refunded.

  
Signature of the Guide

  
Signature of the HOD