

# INSEF ABSTRACT BOOK

INDIAN SCIENCE & ENGINEERING FAIR (INSEF)

## INSEF Regional Fair – Moodubidire

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Conducted By



**ALVA'S**

EDUCATION FOUNDATION(R.), MOODUBIDIRE.

**Moulding a better tomorrow**

**Alva's Education Society**

in association with



**Science Society of India**

<http://sciencesociety.in>

on November 4<sup>th</sup>, 2017 at

**Alva's English Medium High School**

Vivekananda Nagara, Puttige, Sampige Post, Moodbidri- 574227

**(The abstract text provided is exactly as submitted by the participants)**



Innovation Partner of INSEF

**Project Code: BehvSc-01 (Team) (Jr)**      Online ID:2161

**Title: A safe audio receiver for the common public and a care taker for the hearing impaired**

**Name: Sushruth Vasista M & Tejas P Bhat      Std: 8**

**Guide: Prakash Bhat**

**School: Vivekananda English Medium school, Tenkila**

**ABSTRACT:**

We have tried here to come out with some solution for such a problem. This new device allows us to listen to the incoming call without using the handset close to the ear. In this system output sound waves from the receiver mobile is converted to vibrations using a driver or a vibrator which is supported by a 5 volts battery. This vibrator, worn on the wrist (like a wrist watch) sends vibrations through a bone on the wrist to the fingers. When the finger tip is pressed just inside the ear these vibrations again in the form of voice reaches the central ear and are passed on to the brain in the form of nerve impulses.

**Project Code: Bio-01 (Team) (Jr)**      Online ID:2068

**Title: Nitrification inhibitors**

**Name: Isha Sulochana Muliya & Aadhya Sulochana Muliya      Std: 7**

**Guide:**

**School: Sudana Residential School Nehru Nagar Puttur**

**ABSTRACT:**

Urea is the most popular fertilizer around the world. When urea is applied to soil it is first hydrolysed into ammonical form and nitrate. This process is called nitrification. Most crops use nitrate as a source of nitrogen available to plants. If the process of nitrification is too rapid, nitrogen will escape to atmosphere and plants will not be able to recover it from urea efficiently. Generally plants are able to recover a fraction of all urea and this fraction is known as NITROGEN USE EFFICIENCY. NUE stands between 30 to 50%. Thus 2/3 of urea nitrogen escapes from the soil and is not used by plants. Faster conversion of nitrate into urea also results in accumulation of nitrates in soil or underground water. Once nitrate reaches underground water, it is difficult to remove and causes disease called BLUE BERRY SYNDROME. So there is a need to regulate urea hydrolysis and nitrification. This is done by natural agents called NITRIFICATION INHIBITORS. Most of the nitrification inhibitors are costly and beyond reach of farmer. Coating urea with neem oil or neem cake has been proved to be an effective natural

alternative. Neem coating leads to more gradual release of urea helping plants gain more nutrients and resulting in higher yields. It also served as natural insecticide.

**Project Code: Bio-02 (Team)**

Online ID:2287

**Title: A rat repellent product from *Gliricidia maculata***

**Name: Chaithanya .k & Nithesh shetty     Std: 9**

**Guide: Vasanthi .K**

**School: Sri Ramakrishna high school Puttur D.K**

**ABSTRACT:**

*Gliricidia maculata* is commonly found across India. It is a tree with small leaves and light pink flowers of fabaceae family and order fabales. This tree is commonly used in south India as green manure. Instead in this use it has no other commercial importance. This tree has a pungent smell in its bark and pleaves. So it is experimented to find out the insecticide property.

The aim of our project is to find a novel way to use this *Gliricidia maculata* tree as a pesticide. This plants leaves has a pungent smell .So the leaves are used here to make cake by adding slaked lime and ethanol to repel rat . The leaves of *Gliricidia maculata* is dried and crushed and made into powder and mixed with slaked lime and made into a cake. And adding ethanol which can be used as spray for repelling rat.

It can be applicable in house cars and other rat infected areas. By this in future it can be used as a natural rat repellent and this trees will get commercial attraction and make this tree useful.

**Project Code: Bio-03 (Team) (Jr)**

Online ID:2312

**Title: *Jatropha* and Groudnut cake pesticides**

**Name: Hindushree J & Mehek Sharma     Std: 8**

**Guide: Soumya M**

**School: Alva's Higher Primary School , Puttige , Moodbidre**

**ABSTRACT:**

JATROPA AND GROUNDNUT CAKE PESTICIDES

Aim: Protecting coconut tree from Beetle.

Materials Required: Jatropha seed, Cow's urine, Groundnut cake, 10 litre water filling container

Procedure: Keep the pot in between coconut trees. Fill half of the pot with water and soak the groundnut cake into the water. Construct a roof in which the rain water should not enter through the pot, on the duration of 15 days to decay groundnut cake. Add some Cow's urine to the pot and stirred the ingredients daily. Due to this stinky smell all the insects about 500m which get attracted to this stinky smell falls into that water. The pot should not fill more than half, If the water is filled more than half in the pot half of the insects will come out of the pot. In 3 or 4 days the insects will die in it, From this pesticides will not effect for other animals and soil etc...

Uses: Protects the coconut trees from Beetle

**Project Code: Bio-04 (Jr)**      Online ID:2338

**Title: USE OF MORINGA OIL AS A PAIN RELIEVER**

**Name: Chirag M      Std: 8**

**Guide: Sadhana Hebbar**

**School: Sudana High school, Nehrunagar, Puttur**

**ABSTRACT:**

This project is an oil extracted from drumstick leaves, in sesame oil to be used as a joint pain and wound reliever. Since drumstick leaves has property of anti-inflammatory, anti-rheumatic, muscle relaxant, I have used it in this project. It is easily available and prepared, economical. There are many pain relievers in the market. But I wanted something that is completely natural and that can be prepared at home as and when necessary. Knowing the properties of the drumstick leaves I thought of using it in the preparation

50 grams of drumstick leaves is taken and made into a paste form.

200 ml sesame oil is taken in a wide mouthed iron vessel and placed over mild fire. When it becomes lukewarm, the paste of the leaves is added and allowed to boil for 2 min. Then 800 ml of water is added and is allowed to boil on moderate fire. Then filter the oil using clean cotton cloth and store this oil in a clean container. I have used on my family members who have given 80% relief. The test in lab also confirms wound healing property. This oil is used as an external applicant. Since I have used sesame seed oil as the base, it does not turn rancid.

The product was given for testing of pH and chemical analysis and the results show its efficacy in relieving pain effectively within a short duration

**Project Code: Bio-05 (Team) (Jr)**      Online ID:2345

**Title: Smart Tiffin Box**

**Name: Riyana Sonali Pinto & Ananya      Std: 5th std**

**Guide: ROSHAN PINTO**

**School: BRMPC School Vidyagiri, Bantwal**

**ABSTRACT:**

The system consisting of two aluminium foils, 220Ω resistor, 9volt battery, LED bulb, and buzzer. These are arranged according to the circuit diagram. This system is attached to the lid of the tiffin box.

Case-1: When the student without washing his hand he is opening the tiffin box buzzer will not give alarm sound and LED lamp will not glow, because the circuit is incomplete.

Case-2: When the student with washing his hands is opening the tiffin box the buzzer will give the alarm sound and LED lamp will glow. Because the water present in the wet hands conducts electricity in the given circuit. Hence the circuit is completed.

**Project Code: Bio-06 (Team) (Jr)**      Online ID:2347

**Title: HERBAL GEL FOR EYE CARE FROM CYCLEA PELTATA**

**Name: Akanksha A Rao & Thushara Balakrishna      Std: 7**

**Guide: Ranjitha M B**

**School: Sudana residential school, nehru nagar, puttur**

**ABSTRACT:**

Eye, the sense of sight organ is subject to problems like redness, itching, allergies etc. Many allopathic medicines which cure the eye problems have their own side effects because of the synthetic chemicals ingredient contained in them. Many local folk medicine practitioners develop folk medicines as an alternative to allopathic medicines. As a solution to the eye problems they have been using the leaves of Cyclea peltata (family of Menispermaceae). In Ayurveda this plant is commonly known as Rajpatha and its local name is Hadeballi. It is a slender, much

branched turning shrub found throughout south and east India and is easily available to people.

The main objective of the project is to innovate a herbal gel for eye care from the leaves of this plant as an alternative to allopathic medicine.

Phytochemical screening, pH, microbiological safety, cytotoxicity and gelling property tests have been conducted. Test result revealed the presence of Alkaloids, Saponins and Phytosterols which have the antibacterial and antifungal property to prevent and cure eye diseases. pH 6 revealed no negative effect on eyes. Antimicrobial property and absence of toxicity revealed microbiological safety and no damage to tissues. Finally, good gelling property of leaves gives an idea to innovate a herbal eye gel for preventing as well as curing eye diseases as an alternative to allopathic medicine.

**Project Code: Bio-07 (Team) (Jr)**      Online ID:2353

**Title: Inducing calcium through the Inluorescence**

**Name: Varsha K & Sazna Saniya      Std: 8**

**Guide: KAVYA M R**

**School: Alva's Higher Primary School, Moodbidri**

**ABSTRACT:**

**INDUCING CALCIUM THROUGH THE INFLORESCENCE**

**Aim:** To produce banana with Calcium.

**Method:** A banana plant with completely developed inflorescence (approximately 3 weeks) has to be chosen. The tip of the inflorescence has to be removed so grams of calcium hydroxide has to be tied to the tip of the inflorescence tightly so it has to be left there for 3 months.

**Analysis:** The banana from the bunch has to be tested for calcium in the laboratory by using standardized methods.

**Findings:** The banana will have higher amount of calcium compared to other bananas.

**Project Code: Bio-08 (Team)**

Online ID:2432

**Title: Eco- Friendly Dyes**

**Name: Harsha A N & Vishal M Sapate    Std: 10**

**Guide: Sumalatha G**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

My Project is about production of Eco-friendly dyes

Plant materials: Dry seeds of *Thespesia Populnea* (L) collected in the month of August 2017 from surrounding areas of rural area of Malur, Kolar District. The plant material was authenticated at the botanical survey of India, Howrah west bengal, India.

Preparation of plant extract: The dry material of *Thespesia Populnea*(L) passed through sieve[100 $\mu$ ].The coarse powdered drug (250gm) was extracted in Soxhlet apparatus for 28 hour with n-butanol [40-50°C, 2L] n-butanol extract obtained was concentrated under reduced pressure in rotary evaporator below 55°C temperature to get semi solid sticky residue [15gm].

Next step involves the column Chromatography : n-butanol extract of the plant material to column chromatography by using silica gel[80-120] adsorbed and diluted with the mixture of n-butanol:ethyl acetate in gradient manner n-butanol: ethyl acetate[60:40] fraction yielded dark brown color liquid.

**Project Code: Bio-09 (Team)**

Online ID:2435

**Title: Formation and extraction of cashew shell**

**Name: Shashank S & Jayaraj R    Std: 10**

**Guide: Nandini C B**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

I have collected the sample from Moodbidri on August, 2017, then scientific classification analysis is done. The classification is as follows:

Kingdom-Plantae

Class-Magnoliophyta

Order-Sapindales

Family-Anacardiaceae

Species-Occidentale

Once after the collection of sample . It is washed , dried and used for further procedure.

Next 3 separate samples of 10g each were extracted with 100ml of 100% acetone, 70% acetone and 100% methanol, respectively. The mixture is kept for 0 hours on rotary shaker at 190220 rpm.

The mixture were filtered using Whatman No 1 filter paper. The precepitate were discarded and the filtrate was collected

Phytochemiact test: Phytochemiact are analysing for tannins, saporins, alkaloids, filawnoidea Torpenoides, glycenides steroides phenols etc.

Antimicrobial test: After Phytochemiact test, Antimicrobial test will be done to check the antimicrobial capacity of this particular sample.

Formulation and evaluation :this will be done with respect to the traditional chemical method with a reference of Dr Subramanya Sir, Alva's Ayurveda Medical college, Moodbidri.

**Project Code: Bio-10**

Online ID:2436

**Title: Formulation and evaluation of medicinal compounds of tridax procumbers to acne vulgaris**

**Name: Rahul Yadav I G Std: 9**

**Guide: Shailaja P**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

Formulation and evaluation of medicinal compounds of 'Tridax Procumbens' to Acne Vulgaris

Aim: to evaluate and formulate medicianl components of 'Tridax Procumbens' to Acne Vulgaris.

Objective: Collection of sample.

Primary screening

Phytochemical test

Formulation

Evaluation

Principle: This is a plant which is grown as a weed every where during rainy season. It has many medicinal properties as it is playing important role as a anticoagulant, antifungal and other medicine. I got to know about the traditional use of this flowers as leaf for acnes. Under the guidance of Dr. Subramanya Sir we are performing some tests to approve in a scientific manner by performing chemical analysis. But we got to know some of the chemicals were used in formulaton of the drugs in medicine of acne vulgaris are common they are sulphur and other elements.

The tests which we are going to conduct are primary screening Phytochemical test.

**Project Code: Bio-11 (Team)**

Online ID:2437

**Title: Extraction, formulation and evaluation of medicinal compound from muca paradisiaca for treatment for burns**

**Name: Raghavendra Prasad G Shetty & Kushal Gowda V     Std: 9**

**Guide: Sumalatha G**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

Banana is one of the most important fruit crop cultivated in tropical parts of the world. Banana plant itself contains several applications. Pseudostem play an important role to cure the burnt scard. Characteristics of preliminary phytochemical composes of banana[musa panadisiaca] pseudostem juice was determined.

Chopped Pseudostem is placed under medicinal juices and it is then filtered using whatman filter paper No 40. then it is tested for trace elements [Fe, Cu,Zn,Mg,Ca,Na] Further step involves the antimicrobial test by disc diffusion method.

Formulation involves procedure from Ayurveda classical method.

100ml of juice 16 times that means 1000ml of juice is boiled and reduced to 400ml. Then added equal volumes of coconut oil boiled for dehydration. It is done upto formulation of foams formation of foam indicates the complete removal of oil shell life is for about 2 years. Formulating agents can be added like lemon , citron etc.

**Project Code: Bio-12 (Team)**

Online ID:2440

**Title: extraction and formulation of tooth powder using mangifera indica seeds**

**Name: Channabasamma Angadi & Chandana Std: 10**

**Guide: Sumalatha G**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

collected the mango seeds removal, and processing of the kernel; Mangifera indica . seeds were collected washed repeatedly in running water. then they were crushed and kernel were removed. were dried at room temperature and were made powder using mortar and pestle then they are preserved in air tight polythene bag abd kept in dry place.

preparation of the aqueous extract of mango kernel; concentration of 50,55.6,100,125,166,250 and 500mg or ml of the powdered mango kernel were prepared using sterile distilled water.20ml of distilled water was added to 1g of the ground kernel to achieve 50mg/ml concentration. similarly 1g in 18ml,1g in 12ml,1g in 8ml,1g in 6ml,1g in 4ml,1g in 2ml, for 55.6,100,125,166,250,500 mg/ml concentration respectively and refrigerated till 4°C

we have also prepared methanol extract of mango kernel . after the extraction there will be many test to be done , like

Phytochemical screening

microorgaism used

antimicrobial acitivity test

antibiotic sensitivity test.

**Title: ECO FRIENDLY MOSQUITO REPELLENT CREAM FROM LEMON GRASS**

**Name: Gayatri Hegde Std: 10th std**

**Guide: Malini**

**School: Alva's Kannada Medium High School Vivekanandanagar**

**ABSTRACT:**

**SYNOPSIS**

**MOSQUITO REPELLENT CREAM**

**FROM LEMMON GRASS**

**☐ REQUIRED THINGS :**

1. A bowl
2. Air tight container
3. Lemon Grass 10 gram.
4. Coconut oil 10 ml
5. Wax 5 gram.

**☐ METHOD OF PREPARATION :**

Take 10 gram of Lemon grass, clean it and prepare a juice. Take 10 ml of Coconut oil in a bowl, boil it and pour the Lemmon grass juice in the boiling oil. Let it heat for 2 minutes. Take 5 gram of Wax and add it in to the boiling oil. Stir the mixture till it evaporates the water content from it. Let it get cooled. Store this mixture in a air tight container for further purpose to use as a mosquito repellent cream. It can be used for 3 months from the date of manufacturing.

**INTRODUCTION**

Truly Creation is a great miracle. There are hundreds of discoveries within the creation. From the inception of humanity, man has been discovering thousands of new things till today. Indeed it is a positive reality. On the other side it also has its negative effects, which is a sad thing. Man has made lot of achievements even either field of Bio chemistry. Man has been dependent on the chemicals rather than utilizing the natural resource which are easily available. This trend has spread into the field of health and agriculture which is worry some. The

continuous use of chemicals would not only harm human being but also have adverse effects on the life chain of creation. Therefore we have to learn the techniques of using the natural recourse readily available in the nature to live healthily & efficiently.

Thus we have prepared a mosquito repellent cream with the natural things. We have used the natural insecticides which were already used by our ancestors in the past.

As the land gets polluted by the repeated use of chemicals, so our body loses itself by the repeated use of chemicals. We have been throwing a lot of useful things available around us considering them as useless or waste. A plant which belong to such neglected category is Lemon Grass. We have used its juice to prepare mosquito repellent cream to prove the prominence of natural resources.

#### MORPHOLOGY OF LEMMON GRASS

##### ☐ CLASSIFICATION :

Kingdom : Plantae

Division : Magnoliophyta

Class : Liliopsida

Order : Poales

Family : Poaceae

Genus : Cymbopogon

Species : Citratus

*Cymbopogon citrates*, commonly known as Lemon Grass is widely used as medical herb in India. It produces a volatile oil on steam extraction of its leaves.

Lemon grass is an easy going tropical plant that is quite happy in full sun and average garden soil. Lemon grass forms dense clumps that can grown 2-3 feet tall every 1-2 years depending on how vigorously they are growing.

**Project Code: Bio-14 (Team)**      Online ID:2537

**Title: Special property of jackfruit leaves to prepare cookwar.res**

**Name: Yashwith Saroli & Sumanth      Std: 9**

**Guide: Pavithra K & Rashmi B S**

**School: Shree Ramakunjeshwara High School Ramakunja.**

**ABSTRACT:**

Our aim is mainly concentrated on jackfruit leaves. So we compared jackfruit leaves and found that in the three varieties tuluva has got highest structural fibers. Then we compared the same leaves with the other leaves and we get that jack leaves is the strongest leaves when compared with other leaves. So we continued our project and we planned to prepare some utensils from these leaves. So we prepared utensils from jack leaves using guar gum. Fresh jack leaves are taken and washed with water. We should grind it well with small quantity of water to make it paste. Then they are mixed with guar gum. Then we can prepare cookwares of different shapes.

**Project Code: Chem-01 (Team) (Jr)**      Online ID:2296

**Title: Larvicidal properties of zanthoxylum rhesta seed covers against mosquitoes**

**Name: Shashank P H & Praneesh      Std: 8**

**Guide: Jayalaxmi A**

**School: Sri Ramakrishna high school Puttur**

**ABSTRACT:**

Mosquitoes serve as vector for various tropical and subtropical diseases which cause destructive effects to human. The most common diseases associated with mosquitoes are dengue fever, chikungunya, malaria etc. Mosquito control includes targeting the adult mosquito through spraying chemical insecticides or by killing the mosquito larvae before they emerge into adults via using synthetic larvicides or botanical extracts as an alternative larvicide. Instead of using synthetic larvicides, the use of plant-derived products in controlling mosquito larvae is inexpensive and environment-friendly.

We decided to prepare plant-derived product from the seed covers of zanthoxylum rhesta and to test its larvicidal property. We chose the seed covers of zanthoxylum rhesta because of its odour repel the insects.

We collected approximately 1kg of zanthoxylum rhesta seed covers from the tree in our place and shade dried it for 2 weeks and then we powdered it using a food processor. We concentrated it by boiling 100 gms of the powder with 500ml of distilled water and strained out the sediments. We prepared 3 such samples by adding 200gms and 250 gms in 500ml of distilled water.

After 48 hours we sprayed 50 ml of each sample on the larvae in 100 ml of water collected from mosquito breeding water sources. Every day we observed the three samples and we found dead larvae within 24 hours in the max. concentrated sample.

The 100gm /litre dilute extract did not have deaths until Day 3. The other 2 concentrated solutions i. e 250gm/litre & 500gm/litre had deaths starting in 24 hours after spraying. The final mortality in the 100gm /litre solution was 100% after 5 days, while the 250gm/litre & 500gm/litre water extract had a final mortality of 100% after 2 days..

The water extract of zanthoxylum rhesta seed covers started taking effect immediately, which suggests that it was a larvicide. All the three samples of natural larvicides were made from a common plant zanthoxylum rhesta tree that grows everywhere in the forest area in our place and can be purchased quite cheaply. It was easy for us to produce them in our kitchen. So this experiment could lead to many more larvicides that could improve the mosquito controlling processes we use today.

We decided to use zanthoxylum rhesta seed covers because no natural larvicide is prepared from this plant. We used no chemicals to make larvicide.

**Project Code: Chem-02**      Online ID:2422

**Title: Green synthesis of Zinc Oxide Nanoparticles (ZnO NP) and its study as a novel antimicrobial nanoweapon against Multi-Drug Resistant (MDR) microorganisms.**

**Name: MANSHA ASHRAF Std: 10**

**Guide: Dr. Phirdose Ashraf**

**School: The Yenepoya School , Jeppinamogaru, Mangalore**

**ABSTRACT:**

Multi Drug Resistance has been framed by WHO as a pressing global health problem with drug resistant infections killing about 700,000 people annually around the world .Pharmaceutical and biomedical sectors are facing challenges of relentless increase in MDR pathogens thus exacerbating mortality, morbidity and cost of prolonged treatment especially in developing countries.Breakthrough innovations beyond conventional antibiotics is the need of the hour and nanomedicine is a promising alternative. Zinc oxide nanoparticle (ZnO NP) is known for antimicrobial potential since ancient times with mention in Ayurveda in the form of 'Bhasmas'.This project aims to study antimicrobial efficacy of ZnO NP synthesized from green sources like Neem(Azadirachta indica),Clove bud(Syzygium aromaticum),Drumstick leaves(Moringa oleifera) against MDR microorganisms. Plant-mediated synthesis of ZnO Nanoparticles is simple,rapid,cost-effective and eco-friendly as compared to ZnO NP obtained from chemical methods.The ZnO NP thus obtained was characterised categorically using SEM and FTIR spectroscopy since plants differ in concentration and composition of biologically active compounds hence affecting the outcome of the nanoparticles obtained.Antimicrobial activity was studied by Minimum Inhibitory Concentration (MIC) assay which clearly showed greater sensitivity of gram positive bacteria.Further study of synergistic action of ZnO NP obtained from the different aforementioned sources was done to obtain optimum antimicrobial efficiency. Results obtained prove significant antimicrobial potential of green-synthesized ZnO NP against MDR pathogens thus rendering a potentially novel and effective nanoweapon to combat this global health menace.

**Title: Purification of sea water**

**Name: Bharathkumar & Vikrand Std: 8th**

**Guide: Sadhvitha Jain & Prameela Jain**

**School: Alva's Kannada Medium High School Vivekanandanagar**

**ABSTRACT:**

About 71% of earth's Surface is water is covered and the oceans hold about 96.5% only 2.5% being fresh water.

**☒ MATERIALS REQUIRED :**

1. Graphene
2. Net Filter
3. Organic Fertilizer
4. Sea Water
5. Pipes
6. 3 Tank
7. Gatewal
8. Nano pillar

**☒ WORKING :**

Consider sea water flows from 'A' pipe to 'B' pipe. At that time stop the gatewal 1, on gatewal 2 the water flows to Tank '1'. Top of the Tank '1' adopt graphene filter, at the bottom adopt another net filter. When the Water falls on Graphene filter the salt content will remain on that, the water flows on net filter, waste materials will remain on that filter. Pure water falls on Tank 1. Now we have to connect a pipe from Tank 1 to Tank 3. We have adopt Nano piller which destroys bacteria. Now the pure water flows to 3rd Tank. This pure water will be used drinking and domestic purposes.

Now stop the 2nd Gatewal and on 1st Gatewal the sea water flows to Tank 2. Adopt grapheme filter to the 2nd Tank and connect a small Tank near the 2nd Tank. Collect organic fertilizer in Tank 2. In that time water and organic fertilizer will mix. Now this slurry as shown in the diagram, when you on the Gatewal 3

this slurry will flow to the agricultural field. And it helps to grow the crops and plants.

**Project Code:** Chem-04 (Team)      Online ID:2469

**Title:** REMOVAL OF HARDNESS OF WATER USING BANANA PITH.

**Name:** AYESHA AL JEZERRA & ANCILLA JOHN      **Std:** 10th std

**Guide:** HARINAKSHI P.R

**School:** INDRAPRASTHA VIDYALAYA UPPINANGADY.uppinangadycity

**ABSTRACT:**

**INTRODUCTION:**

The scientific and Binomial name of banana stem is *Musa acuminata*. *Musa acuminata* is a species of banana native to Southeast Asia. Most of modern edible dessert bananas belong to this species, although some are hybrids with *Musa balbisiana*.

**AIM:**

TO REMOVE THE HARDNESS OF WATER USING BANANA PITH.

**ABSTRACT:**

An analysis of the chemical composition and anatomical structure of banana stem was carried out using light Microscopy, scanning Electron Microscopy. The chemical analysis indicated there is a high holocellulose content and low lignin content in banana stem. In addition, we report for the first time from using banana stems possess a structure involving helicoidal fibers separated by barrier fibers.

**EXPERIMENT:**

We have taken 100ml of water and 2.50 grams of salt and we placed banana stem in the same vessel and kept it for three to four days to check the results using banana stem.

**RESULT:** We performed the experiment of banana stem and the sample was given to the laboratory. It was observed that banana stem can remove the hardness of water.

We have done this experiment for four to five times and no one have attempted this project so far.

**Project Code: CompSc-01 (Team)**      Online ID:2442

**Title: The heat producing jacket**

**Name: Sameer Nadaf & Shree Harsha      Std: 9**

**Guide: Vinni Wilson**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

we are making a jacket which heats our body

the speciality of the jacket is that it heats up. the source of heating is that it has a heating pads which provides the desired amount of heat to the person. the uniqueness of the pad is that it was originally a direct source of power for it to heat but by making some adjustments we made a storage unit such as a power bank to store the charge to heat the jacket later. the storage unit or the power bank can be of 13000Amph. after converting the heating pad to storage power the jacket and pad should be attached. there will be three levels of heating for jacket

low

moderate

high

the materials used are synthetic material such as nylon rayon etc.

Synthetic materials are used because if water falls on the outside of the jacket, it will not be absorbed and damage the jacket. inner part of the jacket can be made of wool or cotton.

the uses of the jacket are ; it heats up to a desired temperature

temperature of the jacket can be adjusted

can be used in coastal areas at winter or night

**Title: SMART CHAIR**

**Name: Manaswith Shankar Std: 8**

**Guide: Sadhana Hebbar**

**School: Sudana High school, Nehrunagar, Puttur**

**ABSTRACT:**

The main objective of this Project is to alert user with body-seat interface measurements for the prediction of seating posture. The 'necessity' is source for inspiration for designing this smart chair. The smart chair is improved version of regular office chairs including a feature for warning user about sitting position/time.

Prolonged sitting will tighten the muscles of the anterior hip and our shoulders leading to tight shoulders and stress to our lower back. Smart chair is a simple solution for wrong sitting position for long hours. It directly helps to improve the posture muscular health of the employees.

The Smart Chair has a feature for warning users about wrong sitting position. The chair is fitted with inbuilt pressure sensor which activates computer on accordance with the user. A timer is activated automatically as soon as person starts to interface with this chair. In first slot of active mode the device starts to emit audible warning signal and in the second, the chair itself starts to vibrate in such a way that the user becomes aware of his body and posture. The final stage consists of warming up seat so that user has to leave his place, providing user an indication. This chair is being used in my father's office and proved to be working efficiently. With the timer set, the employee gets to use the computer only for some time before he is forced to get up and relax his muscle. Only after break he can reuse the computer.

**Project Code:** Env-01 (Team)      Online ID:2126

**Title:** ORGANIC TINCTURE BY RAUVOLFIA SERPENTINA  
**Name:** CHANDANA SHANKAR & KUMKUMA SHANKAR      **Std:** 9  
**Guide:** GEETHA.A  
**School:** SRI RAMAKRISHNA HIGH SCHOOL PUTTUR

**ABSTRACT:**

Animals often get wound or may be poisonous bites which may cause damage to the animal or may affect the health because of the poison. So, we have prepared the tincture using Rauwolfia serpentina (Sarpagandha) which can be applied to poisonous bites and wound which cures the wound faster without damaging the animal's health.

To prepare it we have to add 180ml of vinegar to roots of Sarpagandha by cutting it into small pieces and fill 90grms of snake root into clean dry glass jar. After it, close the jar tightly and keep it for 4 weeks. It is typically an alcoholic extract of plants to use as medicine. The vinegar acts as a solvent, extracting primarily the medicinal compounds. So, the tincture prepared can be used to heal the wound or rashes on the body of animals. Purpose of the work is to make other people to use the herbal tincture.

Rauwolfia serpentina (Sarpagandha) which is commonly known as black snakeroot or Indian snakeroot or devil pepper .It is composed of many chemical compounds like Reserpine, serpentine and Ajmalacin. And it has the compound to heal wound, it's non-toxic and safe for animal's health. So, we have prepared the tincture which is pure herbal. It helps to heal and stay healthy.

**Project Code:** Env-02 (Jr)      Online ID:2154

**Title:** ORGANIC AGRI SEED PRESERVATIVE  
**Name:** LAHARI V PRABHU Std: 6  
**Guide:** SINDHURA SHANKAR  
**School:** SUDANA RESIDENTIAL SCHOOL PUTTUR

**ABSTRACT:**

Commercial agriculture plays an important role in developing and undeveloped countries because most of these countries rely on agriculture for their economic development . In commercial farming crops such as green gram, paddy , rage , wheat etc are harvested and sold into world markets.

Fungal and insecticidal attacks are some of the common problems in crop seeds preservation. To avoid these problems in seeds preservation farmers use some commercially available product which are highly chemical and are harmful.

My Project aim is to protect the crop seeds from fungal and insecticidal attacks. Purpose of the work is also to replace the use of hazardous chemical product with our organic product.

General information's and properties of many natural products were collected through the discussion with resource persons Based on this I have scientifically produced a Bio product which can protect seeds from insects and fungal effect. Materials involved in the preparation of this seed preservative powder are cow dung ash and Vitex nigundo dry leaves.

Cow dung ash contains potash , carbonic acid , vitex nigundo dry leaves contains methanol antibacterials , organic acid malic acid , bioaction compounds , antioxidant , germicide , potast , nitrogen proseporic oxide, ammonium carbonate , carbonic acid hydrochloric , nisindine amnd crysopyrol.

As per the result obtained it is proved that when compared to commercially available product. My product is safe to preserve crop seeds from insect's attacks.

By conducting several field trails and observation I concluded that this is one of the best eco friendly without causing environmental damage.

**Project Code: Env-03 (Team)**      Online ID:2285

**Title: Extended applications of Artocarpus heterophyllus fruits in the production of Jaggery and other relative products**

**Name: Prakhyath .Y.B & Pranav .Y.B      Std: 9**

**Guide: Vasanthi .K**

**School: Sri Ramakrishna high school Puttur D.K**

**ABSTRACT:**

The aim of our project is to find an alternative source for making sugar and jaggery as sweeteners. Traditionally Artocarpus heterophyllus (jack fruits) are converted into a hard mass by roasting and preserved for a year to make sweet food known as payasam. In this project the ripped portion of jack fruit are utilized to produce jaggery.

The method of production is similar to that of preparing jaggery and sugar from sugar cane. The amount of slaked lime required is estimated by measuring the acid strength of the juice of jack fruit and sugar cane by titration. The amount of slaked lime required for neutralization of the juice is found to be in the ratio of 3.5:3 in grams correspondingly for sugar cane and jackfruit per litre of juice. Several trials have been worked out to refine the product jaggery.

If jackfruit jaggery is produced and marketed as an alternate for sugar cane jaggery, then the wastage of jack fruit grown in large quantity during the rainy season in our tropical area can be reduced and jack fruit will get a better commercial importance as a value based/added product.

**Project Code: Env-04 (Jr)**      Online ID:2286

**Title: A Novel Tooth Paste Using Jatropha curcas**

**Name: Yashas.U.P Std: 8**

**Guide: Vasanthi .K**

**School: Shri Ramakrishna high school Puttur D.K**

**ABSTRACT:**

Jatropha plants latex is collected. Then 80ml of J.curcas ls mixed with 32g of Rice husk charcoal and 8g of Sodium chloride. Thus 100g natural tooth Paste is formed

Materials, (to make 100gm tooth paste)

. 80ml of J. curcas latex, 32g of Rice husk charcoal, 8g of Sodium chloride

- Our mouth is highly absorbent, so chemicals lurking in our toothpaste get a fast-track into your bloodstream
- Triclosan, sodium lauryl sulphate (sis), artificial sweeteners, fluoride, and diethanolamine are examples of toothpaste ingredients that may be toxic

We can make our own natural toothpaste at home – and remember that a healthy diet is key for optimal oral health

In Colgate there is sorbitol, abrasivesilica, purifiedwater, thickening silica, sodium lauryl sulphat, mintflavour, carrageenam, monosodiumphosphate, peg 400, sodium saccharin, sodium fluoride, sodium cmc, ci 16255

Determination of antibacterial activity,

Antibacterial activity

The extract and the liquid were tested for antibacterial activity against enterococcus faecalis and streptococcus mutans by agar well diffusion method. Mueller Hinton agar plates were prepared and swabbed with the bacterial cultures. 6 mm wells were made and extracts were loaded into the wells. The plates were incubated for 24 hrs and zone of inhibition was recorded

Phytochemicalscreening

These tests were done at an

Yenepoya university road, derlakatte mangalore-575018 Then I went to, Vivekananda College Puttur, 574201 For the vertical section of the leaf

**Project Code: Env-05**

Online ID:2297

**Title: Larvicidal properties of Phyllanthus amarus plant against mosquitoes**

**Name: Deehsha A Std: 9**

**Guide: Jayalaxmi A**

**School: Sri Ramakrishna high school Puttur**

**ABSTRACT:**

Mosquitoes can transmit more diseases than any other group of arthropods and affect million of

people throughout the world. To prevent proliferation of mosquito borne diseases and to improve quality of environment and public health, mosquito control is essential. Mosquito control includes killing the mosquito larvae. Instead of using synthetic larvicides, the use of plant-derived products in controlling mosquito larvae is inexpensive and environment-friendly.

We decided to prepare the water extract of Phyllanthus amarus plant and to test its larvicidal property.

We collected approximately 1kg of Phyllanthus amarus plant and shade dried and powdered

We concentrated it by boiling 100 gms of the powder with 500ml of distilled water and strained out the sediments. We prepared 3 such samples by adding 200gms and 250 gms in 500ml of distilled water.

After 48 hours we sprayed 25 ml of each sample on the larvae in 100 ml of water collected from mosquito breeding water sources. Every day we observed the three samples and we found dead larvae within 24 hours in the max. concentrated sample.

The 100gm /litre dilute extract did not have deaths until Day 2. The other 2 concentrated solutions i. e 250gm/litre & 500gm/litre had deaths starting in 24 hours after spraying. The final mortality in the 100gm /litre solution was 100% after 5 days, while the 250gm/litre & 500gm/litre water extract had a final mortality of 100% after 2 days..

The water extract of Phyllanthus amarus plant started taking effect immediately, which suggests that it was a larvicide. All the three samples of natural larvicides

were made from a common weed that grow every where It was easy for us to produce them in our kitchen.So this experiment could lead to many more larvicides that could improve the mosquito controlling processes we use today.

We decided to use water extract of Phyllanthus amarus plant because no natural larvicide is prepared from this plant.We used no chemicals to make larvicide.

**Project Code: Env-06 (Team)**

Online ID:2298

**Title: A novel product to prevent defoliation of Banana leaves using  
Cymbopogon citratus**

**Name: Rohan & Nishan Rai Std: 09**

**Guide: Vasanthi .K**

**School: Sri Ramakrishna high school, Puttur, D.K**

**ABSTRACT:**

Banana leaves are attacked by leaf eating caterpillars and cause damage to leaves by defoliation. The leaves dry up, show irregular holes on them.So as to deactivate the caterpillars and prevent defoliation ,Cymbopogon citratus extract is experimented here in this project. Cymbopogon citratus is a tropical plant grown in our South Asia,belongs to the family Poaceae known commonly as lemon grass or oil grass.It is traditionally used as a medicinal plant . But, in this project it is used as a biodegradable pesticide.

50g of Cymbopogon citratus leaves are crushed and mixed 2 litres of water and boiled for half an hour and filtered to get one litre extract. It is then sprayed to the leaf eating caterpillars present on the banana leaves.The mortality rate of the product is 100% .The product is also experimented on the pests of Abelmoschus esculentus,Solanum lycopersicum .It is observed that the our natural product is having good pesticide property also. Studies on its phytoconstituents have documented the presence of tannins,Saponins,Flavonoids,Phenols,Anthraquinones,Alkoloids,Deoxysugars and various essential oil constituents in the herb.The presence of these natural chemicals may have carbonyl and hydroxyl groups which may be responsible for its insecticidal property . Studies are to be done to find it out.

**Project Code: Env-07 (Jr)**

Online ID:2334

**Title: IWE PENS-For a Greener Tomorrow**

**Name: Alisha Jose & SHRIVATSA SHETTY Std: 10**

**Guide: JOSE M J**

**School: INDRAPRASTHA VIDYALAYA,,DAKSHINA KANNADA**

**ABSTRACT:**

'Use and throw' pens are such a thing that almost all of us use daily and throw it anywhere forgetting its ill effects. A student uses about 60 pens in a year. If a use and throw pen weighs just 10grams 60,000 pens used by thousand students in a year have an aggregate of 6 quintals of plastic is disposed to the environment .

With this realisation, we tried to pen with some eco-friendly materials, but none of these were strong enough to be handled. Our hunt for such a material yielded result when we came across a biodegradable, flexible, bio waste, i.e 'ARECANUT PALM TREE LEAF SHEATH' which is considered as a waste by the farmers. The arecanut leaf sheath have an average length of 3 feet and 1.5 feet width. It has to be dried and then cut into small strips of 14cm length and 1.5cm breadth. On an average 30 to 50 pens can be prepared from one such sheet. Once these small strips are prepared they have to be rolled around any type of refills then the edges are glued together and a nib top of an old pen is used to give the strength and hold.

To make it further eco friendly we have implanted a seed in each of these pens. When a child throws this pen after use the pen gets decomposed and seeds in it germinate. If 1000 student scatter about 60,000 seeds in a year on an average 6000 seeds can grow into trees.

**Project Code:** Env-08 (Team) (Jr)      Online ID:2340

**Title:** A NOVEL APPROACH TO THE USE OF ARECA HUSK

**Name:** Sthuthi M S & B Sandhya Prabhu      **Std:** 8

**Guide:** Sadhana Hebbar

**School:** Sudana High school, Nehrunagar, Puttur

**ABSTRACT:**

The objective of this project is to make an eco-friendly, economical board that is easily made and biodegradable. To fabricate bio-degradable, eco-friendly economical easily preparable blocks which give the strength and durability. Areca husk is easy and cheap way to get raw material. We immersed 2 kg of dry husk in water for 4-5 days for easy de-fibered. They were then removed from water, surface fibres separated manually, cleaned and dried under sunlight. The inner thick fibres are used in our project. We have tried making a block using concrete mixture for the block. We have also tried mixing the fibres with tar to be use as cushions under huge machines to prevent vibrations. We have tested it for strength and breakability and the results are good. We have used fibres and various binding materials in different proportions and have tested them for its stability and breakability. Both the tar preparation and the concrete preparation yielded good result. We have tried using garlic-gelatin mixture to bind with the fibres to be used as packing material. The use of this coastal produce will help in value addition to a material that has least use. With concrete it adds to the strength of the block. Its use with tar helps in reducing the vibrations of heavy machines. The parameters they were tested also have shown good results.

**Project Code:** Env-09 (Team)      Online ID:2346

**Title:** DEVELOPMENT OF STAIN REMOVER FROM NATURAL DETERGENT

**Name:** RAMACHANDRA VIDYASAGAR & A.U ANIKETH KUMAR      **Std:** 9

**Guide:** Vinutha D

**School:** indraprastha vidyalaya uppingangady, puttur TQ,D.K

**ABSTRACT:**

In modern era, chemical detergents are highly used to remove the stain from the clothes which harmful

to the environment, clothes, skin . So we are preparing a natural liquid detergent from the weed fruit

which are abundant in the nature ,they are- sapindus, Randia spinosa and averrhoa Bilimbi.

To prepare 1ltrs of liquid detergent .

☒ extract of each fruit is prepared.

☒ 250 ml of each fruit extract is added and mixed

☒ Add 250ml of water and boil the solution for 30mins

☒ Add powdered camphor to the final solution.

The prepared solution is used to remove the stain on the cloths, such as turmeric, ink, mud etc and it

removes the stain better than the chemical detergent. The prepared sample is given for Yenepoya

Research centre for the antifungal, antimicrobial tests. pH of the solution is 2.17. Washed clothes are

tested no significant difference were observed , therefore we can infer that our natural detergent is

equally good. Finally we conclude that our product is natural ,non-toxic ,eco-friendly, cheaper, contains

easy methodology available in bulk.

**Project Code: Env-10**

Online ID:2391

**Title: Heavy Metal Removal from Landfill Leachate using Laterite Adsorption**

**Name: ANVITH A HEBBAR Std: 11**

**Guide: Prof. H Ajith Hebbar**

**School: Ambika P U College, Puttur**

**ABSTRACT:**

In this project work the leachate from landfill site located in Bannur Village (Puttur Taluk, Dakshina Kannada District, Karnataka, India) was tested for

presence of heavy metals like Arsenic, Chromium, Lead and Nickel. Due to improper management of the landfill site, there were indications of presence of significant concentration of heavy metals in the Leachate. The groundwater sample from the adjacent source was tested for possible contamination due to heavy metals. The results revealed the presence of heavy metals. A column study was conducted to treat this leachate for heavy metals using Laterite grain adsorption. Considerable reduction in the heavy metal concentration was observed. Since laterite is locally available in the region there is a good potential for the treatment of leachate.

**Project Code: Env-11 (Team)**

Online ID:2394

**Title: The innovative method to convert sea water into drinking water using banana stem which is an agricultural waste**

**Name: SHARAN P & VIKYATH J U Std: 1 puc**

**Guide: Skhanda N bhat**

**School: Vivekananda pu college Nehru Nagara puttur dk**

**ABSTRACT:**

we have scarcity of water which is the major problem we are facing. In other hand we have banana plant which gives yield only 1 time later it is cut so in there is waste. In this project we have converted waste into useful item By converting sea water into potable water.

**Project Code: Env-12 (Jr)**

Online ID:2404

**Title: SRISHTI - A NOVEL SEEDER FOR SYSTEMATIC CULTIVATION**

**Name: Rakeshkrishna K Std: 8**

**Guide: Rashmiparvathi K**

**School: Vvekananda English Medium School , Puttur**

**ABSTRACT:**

As you sow, so you reap!

Farming is still the major occupation of Indians. But due to lack of affordable technology, farming is still a non-profitable burden! One of major drawback of Indian system of farming is inappropriate sowing. Due to lack of systematic cultivation, our farmers are always at the verge of loss or least profit.

Indian system of farming demands huge amount of manpower. One such case is to sow the seeds uniformly. Farmers spend a lot of time, energy and manpower in sowing seeds at equal distances. Now I have come up with a model: SRISHTI, which enables easy and fast sowing of seeds at fixed distances.

SRISHTI is a purely novel and innovative model of seeder which enables easier systematic cultivation for the farmers. It is so cost feasible that every farmer could definitely afford for. Moreover easy handling and maintenance, one-time-investment for sowing all types of seeds makes it even more useful.

**OBJECTIVES**

To improve the present seed sowing and cultivation method among the farmers to improve farming and promote high yielding.

#### PRINCIPLE

The seeds which are sown into funnel enter the sowing wheel. The sowing wheel has holes of required size at fixed distance. As we pull the machine the seeds of required size are sown at required fixed distance.

**Project Code: Env-13 (Team)**      Online ID:2478

**Title: Persea Macrantha tree gum alternate to cement**

**Name: Neha H Rao & Sahana S      Std: 10**

**Guide: Anand M**

**School: Kumaraswamy Vidyalaya Subrahmanya**

#### ABSTRACT:

Persea macrantha is a species of plant in the lauraceae family. It is native in western Ghats of India and Srilanka. The plants grows to about 30m.

Kindom :Plantae

Unranked:Angiosperms

:Mangnolieds

The bark of the persea macrantha tree should be removed and crushed. The crushed material should be kept in water for one day

Next day the gum will be separated from the crushed material later to this mixed limestone and jaggery should be mixed in proper proportion

Advantages:To construction

**Project Code: Physics-01 (Jr)**      Online ID:2282

**Title: BIODEGRADABLE INSULATOR USING ARECA CATACHU SHEATH**

**Name: ANUSHA N Std: 8**

**Guide: Mr.Clament Pinto**

**School: St.Philomena High School, Darbe, Puttur**

#### ABSTRACT:

We manufactured the insulators using the Areca sheaths. The areca sheaths which are the agriculture waste materials. Manufacturing methods: we used two

methods. Method 1: Cut the areca nut sheaths in to pieces. Prepare 4% solution of sodium hydroxide and add. Grind the softened pieces to obtain the pulp. The required quantity of the mixture is pressed using mechanical pressing unit. Squeeze out excess water and allow it to evaporate in the atmosphere. After the water content is decreased again press the sheet to increase the compactness. Once it is fully dried the sheet becomes ready to use as insulator. We measured the pH variation in the pulp with concentration of sodium hydroxide to find the toxicity in the product. Method 2: Cut the areca nut sheaths in to pieces and cooked in hot water. The heating process is continued until the areca sheath softens. The nominal time of boiling is found to be about 30 minutes. Grind the softened pieces to obtain the pulp. The remaining procedure is same as the method 1. Characterization: We measured the Thermal conductivity, electrical conductivity and Dielectric constant of the material. The thermal conductivity was measured using lies disc method and is found to be about 0.02 to 0.05 W/mK. Parallel plate capacitors are made using this material and hence the dielectric constant was measured and is about 1.4 to 1.6. The tensile strength of the material is measured using Asian Tensile Strength apparatus MIL0301P. The young's modulus is measured to find the stiffness. All these characteristics are compared with commercially available thermocol.

**Project Code: Physics-02 (Team)**

Online ID:2343

**Title: Advanced Electronic Water Tap**

**Name: Deelia Primal Rodrigues & Sahana      Std: 10th std**

**Guide: ROSHAN PINTO**

**School: CARMEL HIGH SCHOOL, MODANKAP**

**ABSTRACT:**

As per the circuit diagram , when we turn on the tap the positive terminal of the battery comes in contact with the switch 1. Hence the green LED bulb glows which ensure the low flow of water which controlled by solenoid valve. The same is repeated for the switch 2 at which orange LED glows with supply of medium flow of water .

By default the solenoid valve is activated by the battery through the electromagnetic relay .The electromagnetic relay has two contacts at the out put side .

One is normally closed(NC) another is normally opened(NO) The solenoid valve connected to 12V through the NC contact.

When we turn on the tap to the switch 3,the red LEDlamp glows along with the buzzer .In this position there is heavy flow of water ,hence to control this we need the following circuit operation.The switch 3 is also connected to the transistor switch SL-100,to which is connected .Hence transistor switch is turned on which energises the electromagnetic relay by the 12V supply.Due to electromagnetic effect of the relay NC contact which is already connected to the solenoid valve is opened ,hence water flow is stoped.

**Project Code: Physics-03 (Team) (Jr)**

**Online ID:2344**

**Title: Innovative portable inverter with more features and less cost.**

**Name: K. Sathwik padiyar & Rithesh.M Std: 8**

**Guide: Akshatha B**

**School: Indraprastha Vidyalaya, Uppinangady**

**ABSTRACT:**

The portable inverters available in the market consists many components such as power transistors, resistors, oscillator, DC to AC converters, IC and so on. Our DC to AC inverter is prepared by using only three electronic components, which are

Relay

Capacitor

Transformer

We used relay as oscillator to convert DC current to AC signal, a fuse for safety, a capacitor to decouple the effects of the inductance from the DC voltage source, and a transformer to step up the voltage. Input is 12v DC and output is 220v AC.

**Features**

It has inbuilt battery and it can be connected to solar panels to charge the battery. It has a bulb holder with a switch, AC power supply through 2 sockets, 2 USB ports for mobile charging, a fuse for safety, a main switch, a handle to carry, an indicating system which consists of;

Main switch on indicator.

Battery charging indicator.

Fuse blown indicator.

The charge remaining in the battery can be identified by the charge indicator system.

We provide these facilities in our product in a low cost range where as these facilities are not provided in the products available in the market in lower range. This product is very helpful for the emergencies through which we can reduce most of the problems. Such as: in camps, hikes, place where there is no current, we can use our portable inverter

- to provide AC current
- to charge torch
- to charge mobiles
- to glow bulbs, etc.

**Project Code: Physics-04 (Team)**

Online ID:2381

**Title: Findsor**

**Name: K Chinmaya Hebbar & Deepak R     Std: 10**

**Guide: Anusha p**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

Usually every one have a problem of finding their personal things lika mobile, keys, watch, wallet, glasses etc. It just takes our lot of time and energy. So we hav a device called as FINDSOOr which helps in finding our personal things in time.

Findsor is a device which is very light weight can be moveable. There will be two sensors called as sensor A and sensor B. Sensor A will be fixed to our personal things and sensor B will be fxed to a keyboard which will be fixed in the wall. When the sensor b pressed it sends the infrasonic waves and is recieved by sensor A and it makes a beep sound. Whenever the frequency of the infrasonic wave is more the distance travelled by the wave will be less and vice versa. Frequency of the wave is inversely proportional to the wavelength.

**Project Code: Physics-05 (Team)**

Online ID:2383

**Title: Scare Pigs**

**Name: Rahul A & Lakshmi Prasad     Std: 9**

**Guide: Pooja**

**School: Alva's English Medium High School , Moodbidri**

**ABSTRACT:**

India's major problem is that the pigs destroy crops cultivated by the farmers. Before farmers were using crackers but it caused a lot of pollution. So we have planned to put a laser security which would be non-pollutant. We will be using transistors, resistors and LDR etc. It won't give more than 10volts. It can be mainly used during night.

The pigs are scared of light and sound . When it enters the field the laser gets stopped. Because of sudden movement LDR sends a power to the calling bell and an alarm is heard due to which the pigs run away.

**Project Code: Physics-06 (Team)**

Online ID:2480

**Title: Lithium Engine Bike**

**Name: Prateek R.H & Amit B.K     Std: 9th std**

**Guide: Jayashree Jain & Ashwini**

**School: Alva's Kannada Medium High School Vivekanandanagar**

**ABSTRACT:**

**Synopsis**

In our world ,because of population explosion ,there is an increase in the number of vehicles .We are using non-renewable energy sources and the amount of these sources is decreasing .So we have to use alternative energy sources. Lithium is one of the alternative energy sources.

Atomic number of lithium is 3 Lithium belongs to alkali metals .So it can be easily mixed with other elements .Here we are mixing Lithium with water and the heat energy produced is used for vehicles .

In a petrol engine, using the movement of a piston vehicles can move .But in a lithium engine ,lithium is mixed with water and heat energy produced is passed to a ATEG and then heat energy is converted to electrical energy this electrical energy is used in the movement of vehicles.

When piston moves ,AC dynamo connected to this is helps in production of electrical energy and helps in movement of vehicles .

Working :

At the first water is transferred to engine then lithium .In engine water is mixed with lithium and heat energy is produced .Then heat energy is transferred to Automotive thermoelectric generator (ATEG ).

Later heat energy is converted into electrical energy. This electrical energy will be stored in battery and this electrical energy is used to move piston .

When piston moves ,the dynamo connected to this here produce electrical energy this electrical energy is transferred to D.C motor and using this vehicles can move from one place to another.

Uses of Lithium Engine :

1. Decrease in the use of fuels .
2. Decreases sound pollution
3. Air pollution decreases
4. cost is less
5. Lithium is an alternate source of energy .
6. We can produce lithium in our country and it helps to our country's economic level.

**Project Code: Tech-01**      Online ID:2262

**Title: Sugarcane Bark Pairing System**

**Name: Ramakrishna Std: 9**

**Guide: Ashwin**

**School: SDM Eng. Med school, Ujire Ujire**

**ABSTRACT:**

ABSTRACT

Aim & Objective:

This invention helps sugar cane juice maker to remove the skin of sugar cane easily.It works on the basis of spring concept. We have to insert the sugar cane

inside the hole. Then we have to pull the cane from one side. Since the hole has sharp edge, it removes the skin easily; it removes the skin easily without easily So one can use it safely without making any wound.

Method:

- Materials required for the project- Iron rod and metal plates
- For the base of this tool, he fixed two rod in both edge as shown in image and connected this using metallic plate.
- To this metallic plate he did half round shaped hole at the top.
- Again, he took another metallic plate and he is connecting it to the bottom metallic plate using spring in both sides
- For this metallic plate he made half round shaped hole at the bottom To this metallic plate, he made handle.
- We have to pull the handle and then we should insert the sugar cane in to it.
- On other side, we should pull the cane. That time the sharp edge in the hole peels the skin of the cane.

Results:

- 1.It reduce the time for the skin peeling process
2. It saves the worker by getting injury while skin removing process.
3. We can save customers by getting the chances of disease (in some case the shopkeeper may have the diseases)

Conclusion:

. We said about list out the problems in different livelihood. One of the students in 8 th standard list this issue. He observed that in sugar cane juice maker use to peel out the skin of cane using sickle. It is difficult work and also there may be chances of get injury. This problem is very important. Because using sickle the person who is removing the skin of cane may get the injury also the blood comes out from his body may spread to the cane. So if we drink that juice, there is a chance of getting diseases

Novelty:

He thought of building a tool in such a way that it should make the shopkeepers work easily . He want to make a automatic tool instead of sickle.

**Project Code: Tech-02 (Team)**

Online ID:2318

**Title: A novel way of getting clean water from carbon- ceramic Water filters**

**Name: Kshithij H S & Roshan V     Std: 9**

**Guide: Jayalaxmi A**

**School: Sri Ramakrishna high school Puttur**

**ABSTRACT:**

Most of the people in our country do not have easy access to clean drinking water. The scope of this project is to study the existing water filtration methods, and use the knowledge to design a water filtration system.

The objective to this project is to design a low-cost and easily manufactured water filtration system for use. Based on the characteristics of the present filtration methods and the objective of this project, ceramic and activated carbon and vetiver grass roots were chosen to the media to be considered.

Methodology

This water filtration system will include a water filtering component, a lidded container to hold clean water and a valve for easy access of water.

Coconut shells are burnt at 300oC for 3 hours. Burnt charcoal is activated by first soaking it in chemical solutions of either CaCl<sub>2</sub> or ZnCl<sub>2</sub> for 12-18 hours.

Crushed coconut coir pith-to-clay powder ratio of 1:3 is required for the mixture . Water needs to be added in the middle of the mixing process. After the shape of this particular filter level is formed, the filter is to be air dried. The ceramic part is placed in a kiln or pottery oven to complete the firing process. After the ceramic filter element is fired and cooled, a coating of silver nitrate can be applied. The ceramic filter being placed inside a casing. Water is poured in through the top, where a fine mesh mesh locks the activated carbon and vetiver grass roots housed inside the ceramic filter. Water goes through the filter and collects at the casing. Users can then dispense clean water through the nozzle.

When the water went through the ceramic filter, the pH level measured to be 6.5 and the conductivity was 27%. The flow rate of this filter was calculated to be 50 litres per day

This water filtration system focus on cutting down the cost while maintaining filter effectiveness.

We can prepare our own water filters using raw materials available in our place.

**Project Code: Tech-03 (Jr)**      Online ID:2358

**Title: NON CHEMICAL PEST MANAGEMENT - STICKY PLANT RESINE GLUE TRAPS**

**Name: Bakula M Std: 6**

**Guide: Sunitha M**

**School: S V S english medium school, Vidyagiri Bantwala**

**ABSTRACT:**

Flying insects are attracted to bright yellow, blue, and white colors. Traps, consisting of square pieces of cardboard or hard plastic coated with sticky substances placed throughout the growing area among the plants, attract them.

The main part of our natural glue is the mixture of cashew nut shell oil and cashew tree resin. Cashew trees provide the resin. Using a knife, very delicately we scraped large drops of resin into a bag weighing 200gms. Then heated this resin with 100 gms of cashew nut shell oil obtained by roasting the nut shell and mixed 1% sand. The cashew nut shell liquid (CNSL) is one of the sources of naturally occurring phenols.

Cut used yellow coloured plastic sheet, 1 feet wide x 1 feet long. Spread cashew nut shell liquid directly on the sheet. Leave a small space uncoated for easy handling. Hang the sheets from wire supports not facing direct sunlight. The hard plastic sheets coated with sticky substances are placed throughout the growing area among the plants, attract insects. As a general rule, place 1 to 2 sticky sheets per 100 square meter growing area.

Monitored the traps and replaced with freshly made sticky traps as needed. Every day we tracked the numbers of dead and live insects. We graphed the cumulative mortality of the pests.

**Project Code: Tech-04 (Team)**      Online ID:2510

**Title: An Economical Early Detecting and Dosage monitoring tool for PEM.**

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**ABSTRACT:**

PEM is the major protein deficiency disorder which almost accounting for about 6 million deaths of children and adults annually in developing as well as developed countries. WHO estimated that 32%(182 Million) of children in developing countries are Malnourished. Saliva is well validated in diagnosing and monitoring health status because of its composition, function, interaction and mainly due to its non-invasive and easy sample collection procedure. Taking into account the above-mentioned advantage a unique strip has been developed to diagnose PEM. Based on salivary amylase activity on starch to detect PEM in its early stages. This strip also helps to estimate the approximate quantity of supplementation required to overcome the deficiency. This strip is prepared by mixing starch, iodine and food coloring agents in the ratio of 2:3:1. When the saliva comes in contact with the strip the color changes originally from green to red based on the salivary amylase activity. The magnitude of the deficiency can be analyzed by filling of square spaces, based on the magnitude of the reaction the number of empty squares will be filled with the color.