

# ABSTRACT BOOK

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

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**Project Code: BIO-01 (Team)**      Online ID:380

**Title: SEPARATION OF PHOTOSYNTHETIC PIGMENTS BY PAPER CHROMATOGRAPHY**

**Subject Category: Biology**

**Name: PAVAN M KULKARANI & DEEPAK KUMAR JAIN.G Std: 9**

**Guide: P.GAYATHRI**

**School: sri seshaas international public school , Salem**

**ABSTRACT:**

Medicinal plants of sources of important drugs used in the treatment of diseases either alone or combination with other plants.

Chemical substances found in plants include alkaloids, tannins, steroids, terpenoids, glycosides, essential oil, saponins, resins, flavonoids, proteins and others.

These substances are potent bioactive compounds found in medicinal plants parts that can be used for therapeutic purposes.

In the paper chromatography, the different pigment is separated based on their molecular weight.

**Project Code: BIO-02 (Team) (Jr)**      Online ID:384

**Title: USAGE OF COCONUT HUSK TO MAKE PACKAGING CARTON**

**Subject Category: Biology**

**Name: JAI GANESH T.M & M.K.RISHI BALA KUMARAN Std: 8**

**Guide: THASNEEM IQBAL**

**School: sri seshaas international public school, Salem**

**ABSTRACT:**

It has been found that the hemp plant fibres are widely used in the manufacture of car dash boards, skate boards etc.This principle is being tried by using coconut huskin the preparation of packaging materials.

**Project Code: BIO-03 (Jr)** Online ID:397

**Title: Effect of the extract of *Tridax procumbens* on microbes causing post operative infections**

**Subject Category: Biology**

**Name: S.Abishek Std: 8**

**Guide: Mrs.G.Preetha**

**School: GKM Vidyashram, New perungalathur, Chennai-63.**

**ABSTRACT:**

In spite of the availability of so many effective antibiotics, there are increasing cases of post operative infections even in many multi-speciality hospitals. I was in search of some remedy to completely control or cure these types of infections. Since the microbes causing these infections are mostly resistant to antibiotics, I decided to work on the application of herbs. India being the country with a traditional base of Ayurvedic medicines. I could find many types of herbs of which I selected *Tridax procumbens*. I prepared an extract of the above said plant and applied it to a medium containing the pus cells taken from post operative infection with the help of my teacher. I found that it was effective in controlling the growth of microbes that are present in the pus cells.

**Project Code: BIO-04**Online ID:398

**Title: Antibacterial screening of crude extracts of *Tinospora cordifolia* and *Adathoda vasica***

**Subject Category: Biology**

**Name: Sourabh S. Dandagi Std: 10**

**Guide: Chidanand Gavimath**

**School: St.Paul's High School, Camp, Belgaum**

**ABSTRACT:**

In the present investigation, crude extracts of *Tinospora cordifolia* and *Adhatoda vasica* was investigated for its ability to inhibit the growth of bacteria. Day by day microbial susceptibility in terms of synthetic drugs becomes extremely critical therefore it is necessary to search an alternative way for managing infectious diseases with efficient cure and very low or no side effects. Secondary metabolites produced by medicinal plants are broad source of bioactive substance that effect on a wide range of antibiotic resistant bacteria.

Materials and methods:

Fresh leaves of plants free from disease were collected from healthy *Adhatoda vasica* plant. The leaves were washed thoroughly 2-3 times with running water and once with sterile distilled water, then air-dried on sterile blotter under shade. The stem bark of *Tinospora cordifolia* was collected and washed, dried in shade. The dried leaves and stem bark was powdered separately using a mechanical grinder powder. The dry leaf powder of *Adhtoda vasica* & dry stem bark of *Tinospora cordifolia* were subjected for soxhlet extraction using

organic solvents ethanol & chloroform respectively. Then the extracts were subjected for phytochemical screening. The antibacterial tests were carried out against different bacteria by disc agar diffusion method. The nutrient broth was used to culture bacteria at 37°C for 24 hours. Sterilized nutrient agar medium was poured into the Petri plates to form a uniform depth of 5mm and allowed to solidify. Then 100 µl of bacterial suspension was spread over the surface of each nutrient agar plate using a sterile cotton swab by swab culture technique. Then 20 µl of extract was loaded on each 6 mm diameter sterile What No.1 filter paper disc, which was then aseptically placed on the surface of the nutrient agar at spaced intervals. The plates were incubated at 37°C for 24 hours. 20 µl of sterile water was used as negative control and standard antibiotic gentamycin (50 mg/ml) as a positive control. Microbial growth inhibition was determined as the diameter of the inhibition zones around the discs. All tests were performed in triplicates. The resultant clear zones around the discs were measured in mm.

Results:

The leaf extract of *Adathoda vasica* showed the presence of alkaloids, saponins, tannins, flavonoids, phenols, reducing sugar and amino acid. The stem bark extract of *Tinospora cordifolia* showed the presence of alkaloids, flavonoids, steroids, glycosides, tannins, phenols and saponins

**Project Code: BIO-05 Online ID:418**

**Title: Anjanei .D**

**Subject Category: Biology**

**Name: Anjanei .D Std: 12**

**Guide: Sarayu Rani. R**

**School: Chettinad Vidyashram, R.A.Puram, Chennai-28**

**ABSTRACT:**

The oceans have been absorbing a large amount of carbon-di-oxide since the industrial revolution and this leads to ocean acidification. . Phytoplankton grows in the euphotic zone of the ocean, and act as biological sinks for carbon sequestration. Industries can use phytoplankton to reduce their carbon foot print by using the algae based CO<sub>2</sub> capture as it is one of the best ways to increase carbon credits is using the concept of sequestration.

Conventional sequestration techniques, despite all its advantages are second only to the vastly effective and attractive option of biological sequestration.

More than 1.7 billion people in the world die from hunger. A far greater number about 3 billion people (with special reference to coastal areas) suffer of “hidden hunger” i.e., nutrient deficiencies which can be fatal as the reduce immunity, reduce lifespan, and reduce mental abilities. Bio-fortification in this context is the best means to improve public health and increasing nutritional value of our daily diet. By increasing the level of the producer of the ocean (Phytoplankton), on both quantitative and qualitative aspects, the following consumers are benefitted on large scales i.e., increasing the nutrient content of producers and thereby increasing the nutritional content of the consumer.

In this project I have proposed a method to limit the rate of ocean acidification and to bio-fortify sea food by selecting a special type of phytoplankton called *Tetraselmis chuii*.

**Title: MOSQUITO ATTRACTION AND ELECTROCUTION**

**Subject Category: Chemistry**

**Name: V. SWATHI KRISHNA & D. MONIKA Std: XI TH STD**

**Guide: Mr. S. Alphonse**

**School: Kaligi Ranganathan Montford Matric. Hr. Sec. School, Chennai**

**ABSTRACT:**

We have invented a device named, “MOSQUITO ATTRACTION AND ELECTROCUTION” which will kill the mosquitoes through attraction and electrocution.

Mosquitoes are Attracted:

1. Towards human beings because of the peculiar smell coming out of the body (sweat).
2. The Carbondioxide we exhale. 3. Visual 4. Heat.

In our device all the four concepts are used.

**DESCRIPTION AND WORKING OF THE PROJECT:**

The mixture of three solutions with definite proportions is kept in a glass flask. Air is passed into the solution through the air pump. The vapours of the solutions come out from the two wire mesh of different hole width having a small gap in between them. An electric current is passed over the wire mesh. A blue bulb is fixed which also acts as a night lamp.

The mosquitoes are attracted towards the wire mesh thinking it as the human being and sits over the wire mesh. Then the mosquitoes are electrocuted at once, since we are passing current through the wire mesh.

**PRODUCT'S USEFULNESS TO THE SOCIETY:**

Our instrument is to be fixed in the inner part of the windows with the windows, open Mosquitoes which are attracted towards it are made to sit on the electrocuted nets which make them be killed. Breeze will flow freely inside our home leaving us sleep happily and peacefully, being Rejuvenated promptly we can attend to our daily chores promptly. Hence, our instrument kills the mosquitoes but at a comparatively lower cost.

This instrument is portable, much cheaper, more efficient, consumes less electric power and it is pollution free, free from Chemical side effects, has no poisonous fragrance. It is an easy solution to live a healthy life. This is more useful for houses, bungalows, conference halls, Dormitories and big Auditorium etc.

According to the sizes of the rooms, we can have different sizes of this instrument. My system will provide sound sleep without the disturbances caused by the mosquitoes. My innovation will be highly useful for the destruction of mosquitoes at low cost.

**CONCLUSION:**

Our initiative is to eradicate the presence of mosquitoes through electrocution. Its cost is Rs. 1750/-. When manufactured at a large scale, the cost will drastically come down to Rs. 1500/-. People might feel that the cost is to very high. In fact, it is a life time investment. Once brought, it will last for many years. The re-fillable liquid used for this for a period of 50 to 60 days quantity of 50ml costs Rs. 35/-. Then, the day today cost does not amount even to 60 paise. In case of being affected by Dengue, the blood culture leading to its diagnosis costs around Rs. 5000/-.

**Title: Using cotton in the bio-synthesis of plastic**

**Subject Category: Chemistry**

**Name: M Abhilash Kumar    Std: 9**

**Guide: P Muthuraman**

**School: SBOA School and Junior college, Annanagar , Chennai**

**ABSTRACT:**

Making bio-plastic from cotton bi-products by obtaining cellulose acetate in them and creating plastic to replace tradition petroleum plastic. Bio-plastics are basically made from starch sources and cellulose sources. Cotton is 90% cellulose and hence plastics can be easily made. Certain research and experimental processing are included in the project to prove the hypothesis.

**HYPOTHESIS:** If I attempt to develop a method for using cotton in the production of bio-plastic, then I will succeed and manufacture bio-plastic from cotton because cotton is rich in cellulose acetate which is preferred to produce bio-plastic. To prove the hypothesis, I have framed the following experiment based on my research.

This involves the extraction of cellulose from cotton and then producing cellulose acetate. The steps are sequenced in the following.

1. The cellulose source, here cotton must be added to the complex solution of Copper and ammonia solution. This mixture has to be decanted.
2. With the help of a syringe, some amount of the so formed substance has to be drawn and injected to 500ml of sulfuric acid. Now cellulose is precipitated as fine thread.
3. Now cellulose has to be pre-treated with glacial acetic acid and sulfuric acid. Acetic anhydride and additional acetic acid will then precipitate the acetate rayon. Now, this experiment has to be performed by me to arrive at conclusions of my hypothesis. I would soon perform this experiment to make bio-plastic from cotton to reduce the harms of petroleum based plastics.

**Title: Dehydrogenation properties of new hydrogen storage material**

**Subject Category: Chemistry**

**Name: K.S.Sathish kumar    Std: 11 std**

**Guide: R.Jagadeesan**

**School: Government Higher Secondary School,Ayyampettai, Thanjavur**

**ABSTRACT:**

As fossil fuels are fastly depleting finding alternate sources for energy is most demanding and has become a challenging task. Hydrogen is the most promising candidate and therefore generation and storage of hydrogen is attracting lot of interest. Chemical hydrides are [1-3] ( $\text{NaAlH}_4$ ,  $\text{NaBH}_4$ ,  $(\text{MgBH}_4)_2$ ,  $\text{LiNH}_2\text{BH}_3$ ,  $\text{N}_2\text{H}_4(\text{BH}_3)_3$ ,  $\text{NH}_4\text{BH}_3$ ,  $\text{NH}_3\text{BH}_3$ . etc) one of the leading materials in hydrogen storage process. Among them Ammonia borane(AB) have potentially emerged candidate for hydrogen storage for transportable applications due to its high gravimetric capacity[4] (19.6%) ,volumetric hydrogen density[2] (145 Kg/m<sup>3</sup>) and facial H<sub>2</sub> desorption. AB is a colorless solid, stable in room temperature and it is isoelectronic with ethane. However, it holds N-B dative bond and the presence of protic (N-H) and hydridic (B-H) residues to release the hydrogen easily by thermal decomposition or hydrolysis [5-7]. Thermal decomposition of AB gives surplus species for instance aminoborane, borazine and diborane derivatives [5-7]. Recently researchers paying attention to developed replacement ammonia boranes , metal amidoboranes etc.,

Recently Sheldon G.Shore et al have synthesized ammonia monochloroborane (CIAB) for hydrogen storage applications [8] and our studies focused on dehydrogenation of CIAB and ammonia monofluoroborane (FAB). Thermal decomposition of CIAB and FAB is two step processes are shown in Scheme1. All the calculations were performed at B3LYP/6-311++g(d,p) level of theory using Gaussian09W[9] program. The energy profiles of the reactions are shown in Figure1 and the reaction mechanism is given in Scheme2.The activation energy of the second step is higher than that of first step which means second step is rate determining step in this process. Energy barrier ( $\Delta E$ ), relative enthalpy ( $\Delta H$ ) and Gibbs free energy ( $\Delta G$ ) are listed in Table1. When compared CIAB, the FAB have minimum activation energy, so FAB is best candidate to release hydrogen.

**Title: Isolation of Calcium citrate from Lemon Juice**

**Subject Category: Chemistry**

**Name: Vigneshkumar S. & Balaganesh M    Std: 10**

**Guide: Karuppannan P**

**School: Sri seshaas International Public school , Salem**

**ABSTRACT:**

Citric acid is one of the commonly distributed plant acids. The citreous fruits are mainly used for citric acid production. This project isolates calcium citrate a dietary calcium supplement which is used to maintain calcium balance.

**Project Code: CHEM-05 (Team) Online ID:382**

**Title: Extraction of Citric acid from Lemon**

**Subject Category: Chemistry**

**Name: Raadhugaa S.V. & Eswari P Std: 9**

**Guide: Roshini R**

**School: Sri seshaas International Public school , Salem**

**ABSTRACT:**

Citric acid is one of commonly available plant acid. This project extracts citric acid found in citrus fruits. This project also lists and gathers data of variety of citrus fruits and its citric acid content. This project describes the uses of citric acids as detailed below

- \* food additive.
- \* House hold cleaner
- \* Carpet cleaner
- \* Water Softner.

**Project Code: CHEM-06 Online ID:386**

**Title: EXTRACTING IRON FROM RUST: THE REVERSE PROCESS OF RUSTING:**

**Subject Category: Chemistry**

**Name: V.Y.BHARATH Std: 10**

**Guide: beulah**

**School: sri seshaas international public school, Salem**

**ABSTRACT:**

Rusting is a major impact on the availability Iron resources. To get back the iron from rusted particles we are going to do the following steps. First, take 71.8 g of FeO, it is the molar mass of FeO and it contains  $6.022 \times 10^{23}$  molecules of FeO, in a china dish and 40.1 g of calcium to it, which is the molar mass of calcium and it contains  $6.022 \times 10^{23}$  atoms and heat the mixture with the burner to get 55.8 g of Fe and 56.1 g of CaO. Calcium is more reactive than iron, therefore when we add calcium to FeO, it displaces iron from FeO and leaves Iron and Calcium oxide. Likewise Ferrous oxide, we can do for Ferric oxide (Fe<sub>2</sub>O<sub>3</sub>) also, when we add 120.3 g of calcium to 159.6 g of Fe<sub>2</sub>O<sub>3</sub> we get 116.6 g of iron and 168.3 g of calcium oxide. In this case also calcium displaces iron from Fe<sub>2</sub>O<sub>3</sub>. In this reaction 159.6 g of Fe<sub>2</sub>O<sub>3</sub> contains  $6.022 \times 10^{23}$  molecules of Fe<sub>2</sub>O<sub>3</sub> and 120.3 g of Ca contains  $18.066 \times 10^{23}$  molecules of calcium.



**Title: IMAPACT OF Carboxylic acid ON BONES**

**Subject Category: Chemistry**

**Name: MD ASHFAQ UL HUQ.S & ATEEQ UL HUQ Std: 12**

**Guide: SYED SAMIULLAH**

**School: Murthuzaviya oriental HR SEC SCHOOL TRIPLICANE ,  
Chennai**

**ABSTRACT:**

Carboxylic acid is usually used for in digestive problems but nowadays people are using soft drinks like coco kola, 7up, sprit, etc...which content large amount of carboxylic acid.

If we use large amount carboxylic acid then it well affect our bone calcium on prolong use when total calcium is remove then our bone become very week this well lead to bone fractures and problems like rheumatoid arthritis occurs in bone.

So, we have to avoid using soft drinks & carboxylic acid content products then and there. Otherwise it will cause several problems to our bones.

The EXPERIMENT we made:

- 5 strip of bones each of 10 gm are taken and are kept inside 5 different Pepsi bottle and tightly closed and they are marked as 1,2,3,4,5 i.e. They must be kept inside the bottle for the said number of days as marked on the bottle. Strip of bones are burnt in evaporating dish.

- 10 gms of bone ASH was weighed.

To it dilute nitric acid was added

.

- It was diluted with water and the ash was completely dissolved.

- The above solution was filtered and the residue (left on the filter paper) was discarded.

- Ammonium hydroxide was added to the filtrate (left in the beaker).

The solution was made basic. The basicity was checked with the help of ph paper.

- The solution was filtered and the residue was isolated.

Silver nitrate was added .

- To the other test tube ammonium chloride and ammonium carbonate was added simultaneously and boiled.

- The so got white precipitate is filtered and weighed and the data is recorded for all the five bone strips kept in five different pepsi bottles. on analysis of the data we can find up to what extent the carboxylic acid affect our bones.

**Project Code: ENERGY-01 (Team) (Jr) Online ID:350**

**Title: Peado generator**

**Subject Category: Energy**

**Name: P.Sathish & S.Ragul Std: 7th std**

**Guide: A.Soundararajan**

**School: Panchayat Union Middle School,Radhanallur, Tiruvarur**

**ABSTRACT:**

The name of the device is called Peado generator.it is designed in the way of producing electricity and pumping out ground water while playing See-Saw.For that a 12V dynamo is fixed at one side with Rack and Penion arrangement system. When we play See-Saw the Rack and Penion system rotates the dynamo forward and reverse and produces the electricity.The produced current is saved in two batteries of 6V and used when it's needed.Other side a hand pump of No.2 is fixed to pump out the ground water.Since the piston is connected to the See-Saw, the piston moves up and down while we play See-Saw and pumps out ground water continuously.At the bottom, an air pump is fixed which is also operated through playing See-Saw. The pumped air and water are filled and compressed in a cylinder . Besides that,a fumeless oven,a toilet basin and a sprayer are connected to the cylinder through tubeswith suitable valves.By operating the valves the air is flowed out gradually to the oven and helps to burn.As the toilet basin is connected to the cylinder,we can clean the basin with less water consumption since the water is splashed forcely.Similarly we can make use of the sprayer for gardening.

**Project Code: ENERGY-02 (Team) Online ID:352**

**Title: PRODUCING BIOGAS FROM HUMAN FAECES**

**Subject Category: Energy**

**Name: MANOJ KUMAR.T & ARVINDHAN.C Std: 10**

**Guide: S.SHANTHA**

**School: BHARANI VIDHYALAYA,KARUR**

**ABSTRACT:**

Due to population explosion,there is fuel crisis in our world. To face this problem, we have an idea. Nowadays, 3R's (Reduce,Recycle,Reuse) are much helpful to us to face our problem. Here, we are going to recycle the waste into useful one. Human waste will be dumped & pollute the environment if we leave it as such. So to avoid this and to get fuel, we extracted fuel from human waste. Allow human waste to settle in a container and burry it into the underground. By fermentation process, the biogas will be produced and through the outlet, it will be taken out and used as fuel.

**Project Code: ENERGY-03 (Team)**

Online ID:362

**Title: LOW COST BIO GAS PLANT**

**Subject Category: Energy**

**Name: PRADEEPA.S & THARANIS Std: 11 TH**

**Guide: PRIYADHARSINI. A**

**School: BHARANI PARK MAT. HR. SEC. SCHOOL, KARUR.**

**ABSTRACT:**

Producing bio - gas from bio - wastes is our project. We have collected vegetable and fruit waste in a basket for 2 weeks. We have added yeast to them closed the basket. They are decomposed and bio - gas is produced. Bio - gas plant is plugged by a tube and gas is collected in a tank. Then gas is fired and the experiment is proved. This bio - gas plant is used in our house for house - hold purpose.

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

Online ID:365

**Title: ELECTRICITY PRODUCED BY UNSEASONABLE RESOURCES**

**Subject Category: Energy**

**Name: MADHU MITHA.S & DEVATHA NILANI .K.K Std: 10 TH**

**Guide: PRIYADHARSINI. A**

**School: BHARANI PARK MAT. HR. SEC. SCHOOL, KARUR.**

**ABSTRACT:**

Producing electricity using magnetic repulsive force is our project. We have taken magnets fixed in two wheels. We have given force to one wheel for rotation. When we rotate one wheel by the outer force, another wheel is rotated in the opposite direction automatically because of the repulsive force produced from the parent wheel. Outer force is given to a wheel, another set of magnets are rotated and electrical energy is produced by repulsive force created by the parent wheel. Thus, electrical energy can also be produced by this way.

**Title: ELECTRICITY IN MECHANICAL ENERGY**

**Subject Category: Energy**

**Name: A.ANTHONY MARIA VIJAY & J.RAJKUMAR Std: 11**

**Guide: P.RAJA EBENAZER SAM**

**School: NADAR HIGHER SECONDARY SCHOOL ,RAJAPALAYAM**

**ABSTRACT:**

In our country there is a demand for electricity because of that power cut is common. Therefore, to produce electricity and store it we have found this new way. Scientific principle: Law of conservation of energy. Invention of the project. Every where we are using fan and light at a time. For fan we are using separate current (65w) and for light we are using separate current (40w) but from our invention due to mechanical work the electricity required for fan is also utilized to generate produces 12V (DC) current. There will be no change in the ampere and watt of the fan and the speed is not reduced will generating. 12V (DC) current and storing 12v battery. The electricity produced can be stored in 12V battery for 1 hour. There will be no change in the ampere and watt of the fan (No any energy loss). By using the 12V current directly. We can alone 5 LED light from this we can save 120 unit for 2 months. But light is directly used the consumption of fan with light load is 66w. But without light load is 65w. The fan function with light load is extra needed 1w only. But our project produces the current is 6w and profit stored in the battery with the help of the motor. So it is gain (5w) to us. During daytime when there is no requirement of light, we can store it in 12V battery and in night when there is power cut we can use the 12v battery and glow 2 light for 2 hours. Also not wasting air the from fan we generate 3V by using wind mill and this current can be used to glow 1 light. By implying our invention we can save the total electricity required for light. Due to this the electricity charge is also reduced. This will be useful to our country. Materials needed to our experiment : Ceiling fan, Robokit motor (300 (Rpm) and 12v), puss , battery , bulbs , LED, diode, wires, switch etc. Procedure of our experiment: step 1: First we have fixed the puss with the under part of the hole of electric fan. step 2: While the electric fan is on function, the inner motor also rotated. But motor is fixed in scale stand. step 3: Due to rotation DC electric energy (upto 12v) is produced in motor. step 4: From this DC electric energy saved in 12v battery. Diode is using one way travel in motor to battery only. step 5: If we have saved the power for one hours we would have lighted Two LED bulbs for one hour in 6v battery. Step 6: By using the 12V current directly. We can alone 5 LED light from this we can save 120 unit for 2 months in home for using 40W tubelights

**Project Code: ENGG-01**      Online ID:340

**Title: electroless nickel deployment**  
**Subject Category: Engineering**  
**Name: Atul sc    Std: 12**  
**Guide: chandrasekar sp**  
**School: Maharishi Cidya Mandir, Chetpet, Chennai**

**ABSTRACT:**

My thesis is about electroless nickel which is otherwise known as EN, and its deployment technique which is about to be patented.

- Electro less nickel, Electroless nickel plating is an auto-catalytic reaction used to deposit a coating of nickel on a substrate. Unlike electroplating, it is not necessary to pass an electric current through the solution to form a deposit. This plating technique is to prevent corrosion and wear. EN techniques can also be used to manufacture composite coatings by suspending powder in the bath or the deployment device.

- The works,

The process is done in four steps. 1. Surface preparations, which involve removing any foreign impurities such as oil dirt without the use of acid. 2. Activating the target substrate via filing the required region of the target. 3. Heating the target by means of a torch in case of being stationary otherwise we could make the use of a furnace to increase the temperature 4. Apply a thin layer of the EN solution over the prepped material using the EN deployment device and finally quench in cold running water.

**Project Code: ENGG-02 (Team) (Jr)**      Online ID:345

**Title: THE VEHICLE DRIVERS' IN DRIVING HI-TECH MOBILE PHONE INDICATOR ALARM.**

**Subject Category: Engineering**

**Name: A. MOHANRAJ & I. Syed Masood    Std: VIIIth Std**

**Guide: Mr. S. Alphonse**

**School: Kaligi Ranganathan Montford Matric. Hr. Sec. School, Chennai**

**ABSTRACT:**

Cell phone & Mobile is a portable radio telephone. Cell phone has many uses. Cell phone is a good servant but a bad master. The vehicle drivers often use cell phone while driving. This causes lack of attention towards the traffic and hence many accidents occur. Many are killed and wounded and a heavy damage is incurred to the vehicles. This causes material loss and the loss of precious lives. The material loss can be compensated whereas the loss of invaluable lives can never be compensated. Such incidents occur in day-to-day life for all the vehicles like Buses, Cars, Auto, Motor-cycles, Lorries etc.,

**CONSTRUCTION AND WORKING:**

In order to avoid such road accidents, we have devised a system, "THE VEHICLE DRIVERS' IN - DRIVING HI-TECH MOBILE PHONE INDICATOR ALARM" This system has a Microwave (cell phone signals) Receiver. Whenever a driver has an in-coming or out-going call, the receiver system receives the microwave signals. There are two ICs in the system. The First IC receives the microwave signals and the second IC amplifies the signals and feeds it to the Relay System and in turn, the relay system switches on the two loud horns fixed inside and outside the vehicle producing a jarring noise. Moreover, a red lamp indicator

is switched on in the drivers' dash board and on the rear side of the vehicle. The red lamp indicates the message to the policeman that the driver is using a cell phone. When the engine of the vehicle is started, the system is switched on and the system is switched off, when the engine of the vehicle is stopped. Whenever the driver terminates the calls, the jarring sound produced by the two horns is stopped at once. This safety system will safe-guard the vehicle and the driver from the damage.

The government, especially the traffic police has to pass on an order that every motor vehicle should be fixed with "THE VEHICLE DRIVERS' IN - DRIVING HI-TECH MOBILE PHONE INDICATOR ALARM". In addition to that, the traffic police must pass a strict rule that none should use cell phone while driving. Once, the drivers over rule the above-mentioned law and are caught red-handed, they should be punished severely or heavily fined and the punishment should be published in the newspaper and telecasted in the TV channels, so that the other vehicle drivers will become aware of the punishments.

#### APPLICATION AND CONCLUSION:

Our system can receive the microwave signals from the drivers' mobile phone while driving, at about 1 or 1 1/2 feet around the drivers' seat. Except the driver, the other people who are travelling in the motor vehicle can use the mobile phone. In our system, we have fixed a single horn to produce the jarring sound for three wheelers like Autos, Share Autos, Etc., In the same way, we have fixed up two horns, inside and outside the four Wheelers like Car, Van, Etc., and even for more than four wheelers like Buses, Lorries, Trucks, Etc., The total cost of the instrument is Rs. 3500/- (Rupees Three Thousand Five Hundred Only). When the production is done on a large scale the cost of the instrument will come down to Rs. 2500/- (Rupees Two Thousand Five Hundred Only)

**Project Code: ENGG-03 (Team) (Jr)      Online ID:346**

**Title: Swimming pool danger zone alarm**

**Subject Category: Engineering**

**Name: D. Divya Priya & K. Rajsaran Std: VIIIth Std**

**Guide: Mr. S. Alphonse**

**School: Kaligi Ranganathan Montford Matric. Hr. Sec. School Chennai**

#### **ABSTRACT:**

Human beings have been swimming for thousands of years. Swimming has been highly esteemed in ancient Greece and Rome, especially as a form of training for warriors. It is the act of moving through water by using the arms and legs. Swimming is a popular form of recreation, an important international sport, and healthy exercise. Through out the world, millions of people enjoy swimming in lakes, ocean and rivers. Others swim in indoor or outdoor pools. Many schools, recreation centers, hotels, apartment buildings are private clubs which have an indoor or outdoor and water theme parks too.

Today, thousands of swimmers compete in meets held by schools, colleges, and swimming clubs. Good swimmers can also enjoy various other water sports which include spring board and platform diving, water skiing, board sailing, water polo, scuba diving, synchronized swimming. Swimming is one of the best exercises for keeping physically fit. Swimming improves heart action, aids blood circulation and helps to develop firm muscles.

Many people lack knowledge of water safety rules or take dangerous chances. Every year about thousands of people drown in the world. Most of these drowning would not occur if every one knew how to swim and observed basic water safety rules. First of all everybody

should know how to swim. Many schools and community recreation departments provide swimming lessons. Lessons are also frequently offered by organizations such as YMCA and the Americans Red Cross. Never swim alone and always swim with a companion and swim only in areas protected by life guards. A swimming area should be free from obstacles and the water should be clean and clear. Water used for diving must be deep and clean enough to see the bottom.

Swimming Pools usually have different depths. The problem with these pools is that we cannot see the swimmers all the time. People, from all the ages from very young to the elderly, swim for fun. Sometimes the swimmers (beginners) who do not know swimming unknowingly move towards the Danger Zone where its depth is very high. Naturally there is a chance of danger of drowning in an unsupervised pool.

In order to avoid this unknown drowning, we have devised a new invention. "Swimming Pool Danger Zone Alarm". As soon as the beginners enter the Danger Zone, the system will emit a loud sound that indicates that some body has entered the Danger Zone. A laser gun is fixed at the side of the pool. Then the beam is passed through the water and falls on the LDR, which is in off condition. When the beam is interrupted by an obstacle, it will be automatically on and the alarm produces sound. This is an important safety device which alerts the people about the danger zone in the swimming pool and the drowning victims can be saved. Human life which is the most precious in the world is saved with the help of this instrument. It is better to install this new instrument in all the indoor and outdoor swimming pools.

**Project Code: ENGG-04 (Team) Online ID:355**

**Title: 6th sense car**

**Subject Category: Engineering**

**Name: S.Sai Kiran & K.V.Priyadarshan Std: 10**

**Guide: G.Santhakrishnan**

**School: Maharishi Vidya Mandir , Chetpet , Chennai**

**ABSTRACT:**

Road accidents are a human tragedy. They involve high human suffering and monetary costs in terms of untimely death, injuries and loss of potential income. The major cause for these accidents are drunk. During the year 2010 there were close to 5 lakh road accidents in India which resulted in more than 1.3 lakh deaths and inflicted injuries on 5.2 lakh persons. These numbers translate into one road accident every minute, and one road accident death every 4 minutes. Unfortunately more than half the victims are in economically active age group of 25-65 years. Many of these victims are young people. That causes a lot of misery to people which can be avoided. We have done this project to prevent drunk and drive accidents.

First when the driver starts the car, the sensor gets activated. Then the sensor senses the breath of the driver and if any alcohol is sensed in the breath of the driver, the current through the semi-conductor increase with the increase in alcohol content in the air.

When the current in the sensor increases and is sent to the comparator if the current is more than the threshold level, set by the government, the digital value of the comparator is changed to one and the output of the circuit will be equal to input voltage i.e., 5v.

Then the current passes through the relay and the coil becomes magnetized and opens the normally closed end.

This makes the circuit of the ignition coil incomplete and the car engine stops.



**Project Code: ENGG-05 (Team)** Online ID:358

**Title: GLOVES FOR BLIND AND GPS WALKING STICK.**

**Subject Category: Engineering**

**Name: SHANTHI BHUSHAN S & VASANTHRAJ KIRUBAKARAN**

**Std: 10**

**Guide: mrs.VARALAKSHMI**

**School: S.R.D.F. vivekananda vidyalaya, Chromepet, Chennai.**

**ABSTRACT:**

Gloves for blind

This is a glove which is fitted with ultrasound senders and receivers which helps the blind to walk without walking sticks. The ultrasound receivers are connected to vibrators which sense the obstacle and vibrators vibrates, and the person can move away from the obstacle. This glove is very cheap and even the poor people can afford it.

GPS walking stick

This walking stick has GPS navigation features, combined with health monitoring sensors. It is designed for old people and people with walking difficulties.

It works by learning a set route determined on a computer. For example, a person can draw the fastest and safest route to the shops (person who doesn't know that area). The stick itself has Bluetooth and Wi-Fi connectivity and the route is transmitted to the cane.

Then a screen shows arrows that point in the direction the owner needs to walk. When they reach a turning, it flashes a red exclamation mark and then points in the next direction to go. The GPS location of the stick is also sent back to the host computer, so the relative can see where the person is situated.

The stick has a heart rate monitor in the form of a thumb reader on the top. It sends the heart rate back to software which can be read by the doctor. If the heart rate rises or dips and there is potential for the software to call the emergency services and show them the route to go.

**Project Code: ENGG-06 (Team)** Online ID:363

**Title: Robotics - Extraction of oil spill**

**Subject Category: Engineering**

**Name: Vijayavel S & Hemanth S Std: 11**

**Guide: T. Pon Pandian**

**School: K.V.S.Mat.Hr.Sec.School, Virudhunagar**

**ABSTRACT:**

This study shows the major cause for polluting the ocean, the oil spill can be eliminated by properly setting up a system inbuilt within the cruise ship to inlet water into a huge container and allowing the oil to settle at the top of the container. The oil is transferred into another vessel by the process of skimming. The remaining water present in the first container is removed at a very high speed due to the stored up potential energy of water at a height. The oil collected is transferred into barrels, sealed and discharged into the ocean. The barrel floats in the ocean as it is made of wood. The shape of the barrel is in such a way that it cannot be

broken down or withered. The barrels of oils are carried to the shores by the water currents.

Oil spills are currently a disastrous phenomenon that the earth is facing at its recent times of environmental degradation. At this stage there is a necessity for a easy to adopt and safe to practice measure to extract the oil spills. One such measure is the application of robotics. The intention to extract oil from the spills without wastage is achieved through the above process.

**Project Code: ENGG-07      Online ID:369**

**Title: RPAV (FLYING AUTONOMOUS DRONE)**

**Subject Category: Engineering**

**Name: AKASH GHOSH    Std: 10**

**Guide:**

**School: MAHARISHI VIDYA MANDIR ,CHETPET,CHENNAI**

**ABSTRACT:**

A Remotely Piloted Aerial Vehicle () is a working model which can be operate from ground station by using a radio controller and a pc and the sensor system .

This project proposes for this event to exhibit our design and development of a RCPA with ground control piloting system which is completely autonomous.

The RCPA will be installed with an onboard camera 20x zooming power .

This system has the ability to fly in the of radius of 30 km by seeing the pilot's view on our ground control monitor or just by programming the mission.

And also supports a wide range of telemetry making the flight realistic n user friendly (CAN BE OPERATED ONLY BY TRAINED PROFESSIONAL)

\*very silent flying at full throttle

\*This system is completely backed up wid gps, live vedio broadcasting, antenna trackers etc

And other useful features of the gps . Such as

- Auto return to home
- Path way navigation
- Auto circling mode
- Stabilize destabilize

\*Such features can be simply used to follow target , maintain constant attitude to gather info or keep track on target .

\*The RPAV IS capably of flying in any climatic condition

\*1 hour of flying endurance

\*And 4-5 kg of payload (can be used for dropping objects or explosive on target )

**Project Code: ENGG-08 (Team) Online ID:407**

**Title: LISTEN THROUGH LIGHT**

**Subject Category: Engineering**

**Name: GANESH D VERNEKAR & SUDHANVA G NARGUND Std: 11**

**Guide: SUNEEL PAMPANA**

**School: Oxford PU College, Dharwad, Karnataka**

**ABSTRACT:**

Our model is based on the concept of wireless communication using optics. The components used in building this are a Laser, a transformer(6V-0-6V), Light-Dependent Resistor(LDR), speakers with amplifier, audio source, resistor and a set of batteries.

The idea behind transmission is bringing variation in the intensity of laser beam as per the frequency and amplitude of the audio signals.

On the receiving end we mainly have a LDR which provides variable resistance in the circuit as per the intensity of laser beam made to fall on it. Batteries are connected to a audio jack with the LDR parallelly.

Audio signals have variable frequencies. During transmission as the audio signals pass into the transformer, it generates the similar variable frequencies in the direct current passing from batteries through another end of the transformer which is also connected to a laser. Hence the laser beam gains similar variations in its intensity.

As the laser beam is made to fall on the LDR, the LDR detects the variable intensity in the laser beam and provides variable resistance to the circuit. The variation is similar to that of audio source and the audio can be heard through speakers which is connected to the circuit.

We tested our model with different transformers among which the 6V-0-6V transformer was found to be more efficient. For receiving the signals we tested with solar cell and LDR. The LDR provided more clear audio. We used a 220 ohm resistor for preventing the LDR from heating.

**Project Code: ENGG-09 (Team) (Jr) Online ID:411**

**Title: ADVANCED NURSE ROBOT**

**Subject Category: Engineering**

**Name: Damini C & Shalini M Std: 8**

**Guide: Jalaluddin Mohd Ansari Shajahan**

**School: Chennai Public School- thirumagizhisai, Chennai**

**ABSTRACT:**

Nurse robot is mainly designed to help the patients at proper time when required. Our project is mainly focused in timely delivery of medicine to different patients with an accurate response. We programmed the robot's micro-controller using Arduino compiler. This robot is mechanically designed with high degree of freedom and perform various other tasks. This robot comes under category of humanoid.

**Project Code: ENV-01 (Team) (Jr)**

Online ID:342

**Title: Effects of Segregated Kitchen Wet Waste based Compost on Plant Growth**

**Subject Category: Environment**

**Name: Gautam Dhulipala & Hari Ganesan Std: 6**

**Guide: S.R.Suryanarayanarao**

**School: Sishu Griha Montessori and High School, Bangalore**

**ABSTRACT:**

We segregated the kitchen wet waste into 7 groups, which are by colour – reds, yellows, greens and by type – starch, proteins, flowers. To compare the segregated waste compost, we had a 'control' containing all the above kitchen wet waste.

The amount of the waste, additives used were measured and recorded regularly. The resulting organic compost were sieved and weighed before using in the next step.

Next, we grew plants using the compost in various proportions. There were 6 pots consisting of segregated waste compost and 5 pots consisting of mixed waste compost (from control) in various proportions of soil and compost.

We observed that the compost segregated by colour took similar time as the control, while the compost segregated by type took more time than the control.

We also observed that the compost segregated by red colour reduced by weight most, while the control reduced least.

Germination time using control is least, followed by no compost, highest for segregated waste compost. Best growth results was observed with 15 parts mixed waste compost combined with 85 parts soil.

After four months, we felt composting is easy and if all wet waste is composted, our country will have a cleaner environment and the compost can be used to grow crops, trees and plants to India greener.

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

Online ID:374

**Title: BIO-PLASTICS AND RECYCLE OF PLASTICS.**

**Subject Category: Environment**

**Name: R.ARAVIND PRABHU. & R.RAJESHKANNAN Std: 11**

**Guide: P.RAJA EBENAZER SAM**

**School: NADAR HIGHER SECONDARY SCHOOL ,RAJAPALAYAM**

**ABSTRACT:**

Today, Global warming is a very big issue in the whole world. For, Global warming the plastics are also one of the reasons. Therefore, to control this we have made Bio-plastics.

Bio-plastics:

For making Bio-plastics we must require corn starch, water, Vegetable or Canola oil and wax paper. Now mix corn starch and water and add canola oil. Mix it and heat it. Then make it dry and the Bio-plastic is made. This Bio-plastic is environmentally safe and degradable.

Recycle of Plastics:

The plastics a non - degradable and rain water cannot sweep through it because of that the underground water level is reducing. Therefore, to avoid this we can recycle the Plastics. For this we should heat the waste plastics in a furnace and the plastics are converted into a black hard material. This can be used in fencing the gardens and making doors and windows for house.

**Project Code: ENV-03 (Team)      Online ID:379**

**Title: Comparative Study of biological standardization of Radish and Lettuce seeds**

**Subject Category: Environment**

**Name: Prasanna Venkatesh M & Sathya Narayanan T R Std: 10**

**Guide: Karthiyaiyini S K**

**School: Sri seshaas International Public school , Salem**

**ABSTRACT:**

Farmers and Bio- technologists are always curious to investigate the causes of harmfulness and benefits to plants germination and growth. This project looks at what concentration does sodium chloride become toxic to seeds and also to finds Is a certain amount of Sodium chloride beneficial to seed germination/growth. This project observes and gathers data of how large concentration of salt affects plant germination(Radish and Lettuce) . This projects also collected the data by testing the effect of solutions with varying concentrations of NaCl. My hypothesis was that at what concentration does salt (NaCl) become toxic to seeds? Is a certain amount of NaCl beneficial to seed germination/growth?

**Project Code: ENV-04      Online ID:395**

**Title: TRADITIONAL WATER PURIFICATION USING Moringa Oleifera SEEDS**

**Subject Category: Environment**

**Name: OPHELIA JENIFFER.J Std: 9**

**Guide: Mrs.N.Sangeetha**

**School: GKM Vidyashram, New perungalathur, chennai-63.**

**ABSTRACT:**

Moringa oleifera (Family: Moringaceae) is a deciduous plant native of India. The tree is fast-growing and has been planted in many tropical countries. Its common names are horse-radish tree, drumstick, Samarinda etc. It is cultivated across the tropics and used for a variety of purposes. Its seed powder is a good water purifier; and contains polyelectrolytes, which constitute active ingredients in water treatment. M. Oleifera seeds have been used in the

treatment of hard water, and proved that hardness removal efficiency of *M. Oleifera* increased with increasing dosage. Moringa seed powder is a natural alternative to imported alum (aluminium sulphate, the conventional synthetic coagulant) used in purifying turbid water. The powder obtained from the seeds of the Moringa oleifera tree has been shown to be an effective primary coagulant for water treatment. When the seeds are dried, dehusked, crushed and added to water, the powder acts as a coagulant binding colloidal particles and bacteria to form agglomerated particles (flocs), which settle allowing the clarified supernatant to be poured off. . These coagulants are, in general, used as point-of-use technology in less-developed communities since they are relatively cost-effective compared to chemical coagulants, can be easily processed in usable form and biodegradable.

**Project Code: ENV-05 (Team)      Online ID:412**

**Title: DEGRADATION OF MONOCROTOPHOS USING BACTERIAL STRAINS ISOLATED FROM PADDY FIELD**

**Subject Category: Environment**

**Name: R.Brindha & Monisha.P Std: 11**

**Guide: M.MithunKumar**

**School: C.E.O.A Matriculation Hr.sec school, Madurai**

**ABSTRACT:**

Microorganisms involved in soil processes such as recycling of essential plant nutrients, humus formation and soil structure stability. The addition of Pesticides may disturb the equilibrium and thus fertility of the soil. The chances of isolating microbial strains from the polluted soils, with high ability to metabolize a particular xenobiotic are brighter. During enrichment with a xenobiotic compound, the natural selection of microorganisms which have been adapted to the presence of the xenobiotic and its rapid biodegradation are known to take place. In this present research, the growth of three pesticide degrading isolates viz., *Pseudomonas* sp., *Bacillus* Sp., and *Serratia* Sp., was assessed in minimal salt broth containing 50 ppm of Monocrotophos, a harmful pesticides was used in this study. Among the three isolates, The bacteria *Bacillus* Sp., utilized the pesticides effectively and showed maximum growth followed by *Pseudomonas* sps., and *Serratia* Sps., The Bacterial Isolates showed maximum growth in the minimal salt broth containing monocrotophos at different concentration (50 ppm, 100ppm and 150ppm). This present investigation suggests that *Bacillus* Sp. May be used for the degradation of Monocrotophos.

**Project Code: ENV-06 (Team)      Online ID:413**

**Title: EMPLOYING PTERYGOPLICHTHYS PARDALIS AS AN AGENT OF BIOTREATMENT IN THE REMEDIATION OF DOMESTIC AND SEWAGE WATER**

**Subject Category: Environment**

**Name: Ajitha Sarathi.G & Hamsha Varshini.A.R. Std: 11**

**Guide: M.MithunKumar**

**School: C.E.O.A Matriculation Hr.sec school, Madurai**

**ABSTRACT:**

Waste-water can be considered as a precious resource that can be used to fulfill our growing demands of water. Sewage water and ground water samples were collected. These samples were used for the analysis of physical and chemical parameters like odour, color, pH, temperature, BOD, Total solids, Total suspended solids, Total dissolved solids, ammonia and phosphates. The biotreatment efficiency of the fish *Pterigoplichthys pardalis* was studied using the different concentration of domestic water and sewage water (20, 40, 60, & 80%). The following parameters were analysed after 1, 2, 3, 4, 5 and 6 days of treatment for domestic waste water and after 2, 4, 6 and 8 days of treatment for sewage. The chemical parameters such as BOD, Total solids, Total suspended Solids, Total dissolved solids, and phosphates were gradually reduced after the treatment with *Ptergoplichthys pardalis* for the all concentrations of domestic and sewage water samples. Results revealed that *Pterigoplichthys pardalis* may be prove to be highly efficient in remediation of domestic waste water and sewage. Bioremediation By this tank cleaner fish may provide an economical and environmentally sustainable treatment method in future. The present study investigates the possibilities of employing the tank cleaner, *Pterygoplichthys pardalis*, as an agent of biotreatment in the remediation of domestic waste water and sewage water by analyzing certain physiological parameters.

**Project Code: ENV-07 (Team)      Online ID:414**

**Title: BIOADSORPTION OF AURAMINE O AND BISMARCK BROWN R BY CARBON ACTIVATED CITRUS SINENSIS PEELS**

**Subject Category: Environment**

**Name: Jemima D Ramya & Karthigai selvi.M Std: 11**

**Guide: M.MithunKumar**

**School: C.E.O.A Matriculation Hr.sec school, Madurai**

**ABSTRACT:**

The textile finishing industry generates a large amount of waste water. Waste water from dyeing and subsequent rinsing steps from one of the largest contribution to wastewater generation in the textile industry. Because dyes are almost invariably toxic, their removal from the effluent stream is necessary. In this present study Activated carbon prepared from the biowaste used as an adsorbent. Orange comes under citrus. This fruit is almost in acidic condition. This *Citrus sinensis* is applied in the production of orange oil. In this study, experiments have been performed for the removal of Auramine O and Bismarck Brown R using adsorption techniques. Activated carbon has been selected as adsorbent and added to the solution containing dye. The effect of pH of the dye solution and initial concentration with contact time have been studied. Surfactant based carbon regeneration technique has been adopted in the present work to make the adsorption process more economical.

**Project Code: ENV-08 (Team)      Online ID:415**

**Title: PRELIMINARY RESEARCH ON THE BIODIVERSITY OF BUTTERFLIES AND MUD PUDDLING SITES IN VATHIPATTI AND KUTLADAMPATTI HILLS**

**Subject Category: Environment**

**Name: Davis Franco.S & Naveen.P Std: 11**

**Guide: M.MithunKumar**

**School: C.E.O.A Matriculation Hr.sec school, Madurai**

**ABSTRACT:**

Wide biodiversity of butterflies in Kutladampatti and Vathipatti hills region which is rich in flora and fauna were observed. Food plants and nector source of butterflies were analysed. As butterflies are the good pollinators, many of species going to be extinct due to increasing global warming and less availability of food plants and nector source. In present study we were studied the Mud puddling behavior of Butterfly and spotted the sites.Mud puddling is the phenomenon mostly seen in butterflies, involves in the aggregation on substrates like wet soil, dung, carrion to obtain the nutrients such as salts and aminoacids.This puddles serves as source for sodium uptake in male butterflies which increases the reproductive success.The collected sodium and amino acids are often transferred to the female with the spermatophore during mating as a nuptial gift.This nutrition als enhances survival rate of the eggs.This study reveals whether micronutrients particularly copper,manganese, zinc and Iron plays role in attracting the butterflies to the mud puddles,Result shows prevalence of butterflies of family Papilionidae,Pieridae, Nymphanidae and Lycaenidae. High amount of copper and manganese attracted more number lime yellow butterflies. All the mud puddling sites showed hih prevalence of moisture content.

**Project Code: PHY-01 (Team)      Online ID:344**

**Title: COLOUR LIGHT DEPENDING MISSILE FOR AIRCRAFTS**

**Subject Category: Physics**

**Name: S. NIVETHA & V. HEMA LEKSHMI Std: XI TH STD**

**Guide: Mr. S. Alphonse**

**School: kaligi Ranganathan Montford Matric. Hr. Sec. School, Chennai**

**ABSTRACT:**

Colour light depending missile for aircrafts is very useful to the Indian Defence. At the time of war the movements of aircrafts are observed by RADAR. RADAR send electromagnetic pulses in the space. If any obstacle comes it gets reflected back. Those reflected pulses are detected and amplified by the receiver and then fed to the indicator through which we can find the direction, distance, the relative velocity of the moving object.

**PURPOSE:**

According to our modern technique all our Indian aircrafts are magnetically shielded, so our aircrafts are invisible to the RADAR. Because electromagnetic pulses from the RADAR gets deflected instead of reflecting. When our aircrafts are invisible to the RADAR they can easily drop Bombs in our enemy countries and can easily escape. In order to identify our aircrafts, we are using different colour light lasers of different wave length which can



detect the extremists in the air with the help of CLIDAR (Colour Light Detection And Ranging)

#### CONSTRUCTION AND WORKING:

Our idea is to fit our aircrafts with four LASER beam guns with different colours. Such as Red, Blue, Green and Yellow that respond to the coded signal from the CLIDAR from land control and they intimate the pilots to flash a particular colour from LASER beam guns, through secret code while the plane is entering into our territory. As per the pre-determined coding factor, the flight should respond to the CLIDAR. The monitor in the CLIDAR will discriminate whether it is our authorized aircraft or foreign unauthorized aircrafts. Nobody should fly within our territory without our permission. When the control room detects the plane, it warns it not to fly within our territory. If it accepts and changes its direction, it can avoid dire consequences otherwise the foreign aircraft will be shot down.

#### APPLICATION AND CONCLUSION:

In our country we are using old type of RADAR systems. But our new technique of magnetically shielded fighter aircrafts with different colours will be very useful to the Indian Defence. This system has not been used in our country and any other country in the world. If we use this system, we will become one of the major powers in the world.

Usually Radars are set at different heights. Normal RADAR is set about 5000 feet to 35000 feet. For other heights we have to use different RADAR system.

So our new system automatically detects the foreign aircrafts intruding into our territory and even destroys them. Our new system COLOUR LIGHT DEPENDING MISSILE FOR AIRCRAFTS that detects those aircrafts which are magnetically shielded and invisible to the RADAR flying below 50 m. Moreover our system can detect the aircrafts from zero to the maximum extent. This project has been sent to DRDO (Defence Research and Development Organisation) SenabHAVAN, New Delhi.

**Project Code: PHY-02 (Team) (Jr)**

**Online ID:353**

**Title: DOMESTIC WIND MILL**

**Subject Category: Physics**

**Name: GOKUL.S & KISHOR KUMAR.K.T Std: 7**

**Guide: S.PRAVIN KUMAR**

**School: BHARANI VIDHYALAYA,KARUR**

#### **ABSTRACT:**

To face the energy or electricity crisis, we planned this project. We all know about ordinary wind mill & its working principle. But we have slightly modified this idea. In normal wind mill, the leaves rotate in only one direction where in which direction it is faced. But ours is multi directional wind mill. It is made up of steel leaves and a dynamo. And it can be fixed at houses, factories etc. It will produce electricity by rotating in all directions and it is an ALL TIME RESOURCE.

**Project Code: PHY-03 (Team)**      Online ID:364

**Title: Electricity from Speed breaker**

**Subject Category: Physics**

**Name: J. Aswin Rajkumaran & E.Charan kumar Std: 11**

**Guide: T.Ponpandian**

**School: K.V.S.Mat.Hr.Sec.School.Collectorate, Virudhunagar.**

**ABSTRACT:**

Our project is ELECTRICITY FROM SPEED BREAKER. Here we have attempted to do a working model of generating electricity from speed breakers. The major crisis that we are facing today is power shortage. Here we are making speed breakers of vibrating type, when a vehicle crosses the speed breaker, it gets pressed and then gets back to the original position. In our model the downward thrust exerted by the vehicles on the speed breakers is converted into electrical energy using a DC motor as a dynamo. The principle involved here is conversion of potential energy into electrical energy. There is a mechanism to convert potential energy into kinetic energy and then into electrical energy. The energy thus produced is used to charge batteries and light up street lights. In real life for every 60kg manload 8.33Volts is produced. The efficiency of this unit is 95%. Energy that is wasted on roads can be saved by setting up such units. A vehicle weighing about 1000kg going up a height of about 10 cm produces about 0.98 kilowatt power. So one such speed breaker on a busy high way, where about 100 vehicles pass every minute, about one kilo watt of electricity can be produced. This method is eco-friendly and does not create any pollution or releases any harmful by-products.

**Project Code: PHY-04 (Team)**      Online ID:368

**Title: LASER ARM FOR PHYSICALLY CHALLENGED PEOPLE IN DEFENCE HOSPITAL**

**Subject Category: Physics**

**Name: C. RAGHUL & S. KAMALAKANNAN Std: 12**

**Guide: G. SAHAYA SUNDAR**

**School: THAMBITHOTTAM HIGHER SECONDARY SCHOOL, GANDHIGRAM, DINDIGUL**

**ABSTRACT:**

It is novel idea, in which laser is used as remote communication media normally laser is used in medical and industries field to give solution for critical problem. but in our system laser is used as communication media.

This system is specially designed for physically challenged people. in which laser is used to on/off the electric load. In this system the condenser mic based voice sensing system is used to detect the voice from physically challenged people. The voice [sound] detecting system triggers the IC 324 based timer unit. The low Power point torch is used to generate laser beam for switching. The receiver side consists of several photo windows to control different electrical load. This system is operated by voice at physically challenged people. The laser beam is activated by sound.

The condenser mic based hand help instrument is kept on shirt pocket. When you produce a smooth sound that system activate laser torch. The beam at laser rays is act as a hand of human being.

In the switch box LDR based photo sensor is used to drive the relay. By using this system, physically challenged people control any electrical device without any assistance.

**Project Code: PHY-05 (Team)**      Online ID:377

**Title: FARADAYS CAGE**

**Subject Category: Physics**

**Name: JAIDEEP SIVA & BHARANI V.Y Std: 10 th std**

**Guide: gomathi rani**

**School: sri seshaas international public school, Salem**

**ABSTRACT:**

-A Faraday cage can protect against direct Electro-magnetic waves. When properly connected to an earth ground, the cage conducts the high current harmlessly to ground, and keeps the EM pulse from affecting personnel or hardware inside.

The metal frame draws the electricity away from the material inside.

It prevents electromagnetic energy from escaping into the room.

**Project Code: PHY-06 (Team)**      Online ID:383

**Title: leviating magnets**

**Subject Category: Physics**

**Name: suriya prakash.k.s & AJAY SAUNDEEP.S.R Std: 10th**

**Guide: HEMA LATHA. V**

**School: sri seshaas international public school, salem**

**ABSTRACT:**

Maglev trains use magnetism to literally float on the air as they glide along a magnetized track.

Levitation (making things float) is just a magic trick, but the truth is we can use an invisible physical force to levitate a magnet!

**Title: line follower**

**Subject Category: Physics**

**Name: V.Arun kumar & J.Prem kumar Std: 12th std**

**Guide: L.Rajeswari**

**School: Smt.NDJA V.V JR COLLAGE 3RD, Main Road, Chennai**

**ABSTRACT:**

The present condition in Industry is that they are using the crane system to carry the parcels from one place to another, including harbor's .Some times the lifting of big weights may cause the breakage of lifting materials and will cause damage to the parcels too.The robot movement depends on the track. Use of this robot is to transport the materials from one place to another place in the industry.This simple robot is designed to be able to follow a black line on the ground without getting off the line too much. The robot has two sensors installed underneath the front part of the body, and two DC motors drive wheels moving forward. A circuit inside takes an input signal from two sensors and controls the speed of wheels' rotation. The control is done in such a way that when a sensor senses a black line, the motor slows down or even stops. Then the difference of rotation speed makes it possible to make turns. For instance, in the figure on the right, if the sensor somehow senses a black line, the wheel on that side slows down and the robot will make a right turn.