ABSTRACT BOOK

INDIAN SCIENCE & ENGINEERING FAIR (INSEF)

INSEF Regional Fair – Belgaum

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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:1950

Title: Innovative and productive way to get more yield in small place
Name: AKSHAY.NAGENDRA.RAJAI & SANDEEP .B. PATIL Std: 11TH
Guide: ANKUSH.PATIL
School: KLE IPC JAKKERI HONDA;GOVAES;BELGAUM.

ABSTRACT:
Our model is all about getting more yield of plants;vegetables;etc in less period of time in a limited area without using chemical fertilizers. We have used a small water pump ;we have created a platform of wood ;and a plastic tray to0keep the nutritive solution .WE Are using a type of aerophonics technique . We have developed a vetical farm with all the suitable environment conditions needed to grow crops. We are usind specialized led lights such as red and blue which are only used by the plants for strenth and growth .AND The whole spectrum of light whihout is not required ascept the red and blue.*In this model we are usoing ph sensor ; temperature calculating ;even humidity sensor.as the farming land is decreasing we are trying to make the whole cultivation land in limited area

Project Code:CompSc-01 (Team) Online ID:1896

Title: Techno_DROID
Name: Darshan Shivsingh Patel & Premanand Shivsingh Patel Std: 10
Guide: Shivsingh Patel
School: MVM English Medium School; College Road Belgaum

ABSTRACT:
A Helpful Drone or Land Rover; designed on complexions & basis for running via KeyBoard. Helpful in conditions like emergency; disasters; alerts etc.Detailed Specifications:-Input via Keyboard;Emergency Lighting Signal;Smoke and gas leakage alert;Emergency Sound Alert;Long distance communication (upto 200 to 400 ft);Command input display on LCD on controller;Easy Input/Output communication(I/O);Easy to USE ! ;etc.

Project Code:CompSc-02 (Jr) Online ID:1937

Title: Project Alpha9
Name: Shreyas kapale Std: 11
Guide: Uday C kapale
School: KLE independant PU collage

ABSTRACT:
Project Alpha9 is a security and spying bot crafted with raspberry pi 3 model B ; applications of the bot are endless; Alpha 9 has face recognition system which can identify face's and behavioral changes to detect the person's intention developed using python and openCV library + picamera (note the source code references are taken from internet which is specified below) basically alpha9 is four wheeled bot

with a mini drone (refer pdf for detailed info) alpha 9 can protect VIP's from potential harms; for example if the vip falls then it will message their guardians that the vip is in risk of injury secondly the Alpha9 can protect VIP's devices (like phone ; tablet ; laptop) basically protects the VIP's Wifi network if any illegal person gets access to the wifi(Hacker can get access to the any devices if he is on the same network) alpha9 ends the hackers session and tracks his ip and sends it to the cyberCrime office (alpha 9 checks for the devices on network if there is unregistered device it ends its session)(only automation is developed by me using Linux Shell scripting and python tools used are open source which include aircrack-ng;Reaver;wifite) secondly one more great thing alpha 9 can do is if alpha9 is used in military and sent to the terrorist camps (note that aplha9 can act as server for the small drone ;so it doesn't specifically need to move here and there due to its size) it can crack into their wireless networks(using brute-forcing; dictionary attack then decrypting encrypted passwords to get access)then it can perform mitm(man in the middle attacks to capture data packets and send it to the owner so he can analyse the conversions or data which is being exchanged on same network it can also identify terrorists using face recognition.(But remember the applications of this is not limited)(NOTE: MOST OF THE FEATURES ARE WORKING)

Project Code:Energy-01 (Team) **Online ID:1933**

Title: Homemade Washing Machines

Name: Ms. Sakshi Manohar Bagde & Ms. Richa Ravindra Singh Std: 12
Guide: Samir Khule
School: Bhavans; B P Vidya Mandir; Ashti (Khurd); Nagpur

ABSTRACT:
Initially; we thought of the villagers; how they live; their lifestyle; without electricity; proper resources; technology. They also are not aware about the changing mechanism of the society. And since they cannot afford huge resources; in the increase of price tags of many small primary things such as coolers; fans; machines; lights; LPGs etc. keeping these in our mind; we got the idea of this project; which would help these people and also urban people to overcome their problems(if any) as well with a much lower rate. This project is a simple mechanism consisting of a washing machine; pullies and a battery charger. This can be briefly explained by the mechanism of rotation and conversion of mechanical energy to electrical energy. It can be described as: when we rotate the paddles of the cycle; by the use of chains; the pullies connect just behind the cycle rotates. Furthermore; these pullies are connected to a rotating turbine which would serve as rotator over here in which we would put our clothes and wash them off. Simultaneously; while revolving paddles; the wheels also rotate. We have connected a dynamo which converts mechanical energy to electrical energy. This dynamo is connected to a battery charger via a female socket. By this mechanism;

we are successful at lighting a bulb also.This would help the people with a mechanism consisting of resources i.e a washing machine; a battery charger and a bulb at minimal possible costs.

Project Code:**Energy-02 (Team) (Jr)** **Online ID:1935**

Title: Multifunction cooking system
Name: Ms. Netal Dinesh Taori & Ms. Riya Niraj jaiswal Std: 8
Guide: Samir Khule
School: Bhavan's; B P Vidya Mandir; Ashti(Khurd);Nagpur

ABSTRACT:
In India most of the people use LPG gas to cook the food and heat the water for bathing. Hence their 14 liter LPG gas cylinder works for 38 days only(According to our servey). This we have seen in our house. This makes us to think about an idea in the form of multifunction cooking system by which we can use this 14 liter LPG gas for about 45 to 50 days. Using this system we can cook the food ; heat the water and generate electricity; at a time. According to above data if we calculate the use of LPG for 4 people family; without this system is 10 cylinder per year and with this system is 8 LPG cylinders per year. If one family can save 2 LPG cylinders per year; then think how much LPG gas can save in overall India. This system includes hollow copper tubes attached at the bottom of the pan where water can pass. Again a stream of thermocouples is used to generate electricity as shown in figure. In addition to that we have added a copper coil on the gas burner so that we can use different pan also.During cooking of chapatti on this pan; the heat or thermal energy is used to heat up the water through the pipe simultaneously. As the water flows inside the copper pipes; copper being a good-conductor; absorbs the heat which is later absorbed by the water as the water gets heated up from every point from where it receives the heat. The warmed up water moves outside through outlet for domestic purposes. When the water is being heated up; simultaneously; the thermoelectric generator produce electricity by using Thermoelectric generators (also called Seebeck generators) are devices that convert heat (temperature differences) directly into electrical energy. All these things happen simultaneously to make an optimum and maximum use of heat energy

Project Code:**Energy-03 (Team)** **Online ID:1938**

Title: Rural Refrigerator
Name: Mast. Varennyam Joshi & Mast. Karan Manoj Agrawal Std: 9
Guide: Samir Khule
School: Bhavan's; B P Vidya Mandir; Ashti(Khurd);Nagpur

ABSTRACT:
Our model; rural refrigerator; is based on the fact that still many people in rural India do not have refrigerators to keep eatable fresh. They are forced to throw fruits and vegetables which cannot be kept fresh for three to four days. Rural

refrigerator is a very cheap; eco friendly and designed for people living in villages. Our model is actually a cooler modified to a fridge. It works on solar power which is eco friendly and easily accessible. The body comprises of a cooler's body in which there are two shelves fixed; a DC water pump is connected to the tank; a fan is fixed on the front panel or door which can open and close and an earthen pot; which has a connection of copper tube; is kept on the upper shelf. The copper tube has a jute coating on it and it is passed touching the khus and on its end a tap is fixed. The working of our fridge is as follows:- Tank is filled with water. Dc pump; pumps the water to the tank at the top of the cooler; then through small holes (made in a row just above khus on three sides) the water flows and the khus is cooled. The fan; which is fixed on the movable front panel regulates the flow of air inside the cooler. The warm air comes inside the cooler and gets cooled by the khus with water flowing through it and the area inside the cooler is cooled and the temperature is maintained around 24°-26°C.fruits and vegetables are thus preserved for two to three days more. There is an earthen pot also which has water stored in it the water in it flows through a jute wrapped copper pipe. The jute absorbs water in its surroundings and cools the water flowing through it. By a tap we can take this water for drinking usage

Project Code:**Engg-01 (Team)** **Online ID:1936**

Title: Multipurpose Agriculture Equipment

Name: Mast. Yash Vijay Kale & Mast. Sarthak Ajay Gupta Std: 9
Guide: Samir Khule
School: Bhavan's; B P Vidya Mandir; Ashti(Khurd);Nagpur

ABSTRACT:
Our project is basically designed to minimize the work of farmer. STRUCTURE1.This model consists of a bicycle having only the handle and the front wheel. An iron rod directing to the ground is joined to the handle.2. At the end of the iron rod is a rectangular iron plate ; parallel to the ground which has a circular hole and a square hole(for plough). 3. A ridge shaped iron plate(for covering soil) is attached to the rectangular iron plate .4. A container for keeping water is attached near the handle of the bicycle. A pipe connects the water container to the iron plate. The pipe has a valve to regulate the flow of water.5. A plough for ploughing is installed in the square hole of the rectangular iron plate .6. There is a funnel attached near the handle. The pipe extending from the funnel is made to pass through the brakes (clutch) to regulate seed dispersing. The other end of the pipe is attached the circular hole of the iron plate. 7.It has a dynamo attached to the wheel which generates energy.WORKING1. As the bicycle will move; the plough will plough the field.2. If the farmer wants to sow the seeds he will press the brakes and the pipe will be set open for the seeds to pass down the pipe and into the soil.3.After all the soil will be covered by the soil covering tool.4.After that if the farmer wants to irrigate the field he will turn on the valve.

Then the water will flow down the bottle and into the soil.5.As the bicycle will move; the wheel will rotate and the dynamo will generate energy.

Project Code:Engg-02 (Team) (Jr) Online ID:1939

Title: Multi tool Kit for Farmers & Rural Peoples
Name: Kiran Annigeri & Siddamma Hiregoudar Std: 8th std
Guide: Basavaraj Tadahal
School: Hubballi

ABSTRACT:
Multi tool Kit for Farmers and Rural PeoplesObjective: We want to make familiars the using of tools with the simplest way by making this simple design from their own scrap materials so as to avoid the wastage of simple devices which mostly get thrown out due to minor repair the basic knowledge required in using the most common hand tools and measuring instruments used in domestic repair work.Materials: PipesGear MotorConnecting wiresRocker switchWrenchesSocketsDC Adapter Method:We collected listed materials for making our design. We assembled the materials for the design.We tested in on different electronic devices like Fan; Grinder…etcWe worked on its forward and backward movement.We also tested it by other users like mechanic and technician.Result:The DC based device can be used for different operation of different kind of devices assembling and dissembling.Conclusion:This tool can be easily used by all from kids to ladies and even by the Farmers in rural places. Sockets come in the three common sizes. They also come in shallow (short) and long. Both lengths are critical for common repairs. As with the wrenches; choose metric if you have to make a choice between sizesNovel: It has a simple mechanism with no harm DC power for operating and can be used by anyone and is portable with multi function advantage

Project Code:Engg-03 (Team) Online ID:1944

Title: STRENTHNING BRICKS CAPACITY
Name: Sharan Pol & Yogesh Navi Std: 9
Guide: NAGARAJ MANDEKAR
School: S.S.H.M HIGH SCHOOL VIJAYAPUR

ABSTRACT:
STRENTHNING BRICKS CAPACITYAim: To increase strength of bricks by using plastics.Materials:üCement ü10mm jelly stone üPlastic powder üFly ashüWaterüBucketüMeasuring jarüMeasuring tapeüBricks grinder machineüCompressive strength machineProcedure:•First we collected waste Plastic powder (recyclable plastic powder) from factory.•Then we mixed cement; fly ash; 10mm jelly stone and water mixture with plastic powder in bricksmixture grinder machine.•We prepared bricks in following ratio:1)25% plastic +75% regular bricks mixture2)50% plastic +50% regular bricks mixture3)75% plastic +25% regular bricks mixture4)Regular cement brick 100%(plastic not added)Cement block propotion:Cement 6% Stone powder 40%4mm jelly stones 25%6mm jelly stones 25%Fly ash

4%•Then bricks were made by using bricks making machine.•We did curing for 15 days.•We took all bricks to secab engineering college for testing of compressive strength with the help of Mr.pradeep HOD civil engineering department.•We did water absorption test at agastya international foundation.
TESTING
1) Compressive Strength TestSl.no% of plastic Replacement Measured size(mm)Compressive Strenth N/mm21Normal(0%) 410x160x2102.91225410x160x2104.49350410x160x2104.00475410x160x2103.592) Water absorption testSl no% of plastic ReplacementWater quantity in bucket in litreWater quantity after absorption in litreTotal absorption of water in litre1 Normal(0%) 43.50.522543.350.6535043.750.2547543.900.103) Bricks breaking height test Sl no% of plastic Replacement breaking height of bricks in metre1 Normal(0%) 4.7222553503.24752.5

Project Code:**Engg-04 (Team)** **Online ID:1947**

Title: multipurpose novel chair to detect learning disabilities in childrens
Name: gautam.s.patil. & omkar.g.murgali. Std: 11
Guide: akshay.tarlekar
School: kle ipc goaves near jakkari honda belgaum

ABSTRACT:
We have designed a chair to detect learning disabilities in children's.it is equipped with pressure sensors to detect the incorrect postures taken by child while studying it is designed in such a way that is reduces back and neck pains caused during studying n prevents from ergonomics disorder.with regular use of chair makes students to take right postures while studying.secondly the chair consists of a pen which vibrates whenever a child loses his concentration ;which can help children's to concentrate on their studies.we also have used some innovative ways to keep the reader always fresh n fatigue free.the chair comes with a hologram to give 3d visualization for students for better understanding of concepts.the chair is designed in such a way to improve overall development of a child in studies.it can be also used to watch tv as it automatically adjusts distance between tv n observor to keep his eyes safe which works on ultrasonic sensors.it has wide range on applications and can surely help students to concentrate in their studies. Applications1.helps to concentrate.2.Solves the problem of neck n back pains.3.keeps readers fresh.4.Makes studies interesting with use of hologram.5.can be also used as an office chair or watching tv.

Project Code:**Engg-05 (Team)** **Online ID:1951**

Title: Farmerís friendly Agricultural composting Machine
Name: Mahesh Mokhashi & Vishwanath Badiger Std: 9th std
Guide: Nagaraj Antharavalli

School: SJRC HS Noolvi Tq Hubballi

ABSTRACT:

Title : Farmer's friendly Agricultural composting MachineOrigin of Idea: During the Raining session I saw Farmers struggling in a field to put compost to plants by traditional methods. We noticed that traditional method consumes a lot of human energy; time; and money even we didn't get labors also. By understanding this problem we assumed to make a Farmers friendly agricultural composting machine.Aim and Objective: Agriculture is backbone for Nations development. Farmers are struggling on putting composting processes by traditional methods; putting different of type of compost to different type of agricultural plants. So we designed Farmers friendly agricultural composting machine – To help Farmers; save energy; time; reduce labor cost; accuracy and easy to carry able.Materials Required:•PVC Pipe•Clamps•Freewheel•Spring•Metal rods•Metal sheet•Bicycle wheelObservation:•To observe time taken by composting per line.•To observe the compost falling place.•To compare the manual and machine work.•To observe the energy require for putting carrying the compost.•To observe the speed of work by manual and machineVariables: Independent-Composting methodDependent-Putting compost and Time to compostingHypothesis: •Design a composting machine which can put compost to different types of agricultural plants.•It should be able carry to easy.•No more energy required.•Solving labor problemsProcedure:First we can take fertilizer in a PVC pipe then to put different type of plants as shown in the figure. When we are pressing the handle of the machine that time iron rod will be rotates the wooden droppers in a PVC pipe then only some amount of fertilizer comes down and fill this in the soil at certain time. And after automatically handle will comes as their position at same time. And also automatically mouth part of the dropper will be locked. It consists of three wheels for easy to move in the field. And it can be adjust for different distance at each composting at in the field. We can quickly composting the fertilizer in the field comparing to other different machines. We can use this machine in any soil particles. Result:After we learnt that when we applying the force in anything it will be reflect the same force in opposite direction. It's nothing but NEWTONS 3rd Law of motion. And it's very easy to operate; put the fertilizer; and also easy to carry anywhere.Conclusion:After Construction of this machine; we conclude that it's very useful to every farmer. It is very easy to carry from one place to another place. It can be used to all different types plants to put compost and easy to set suitable distance at each composting place at in the field.Merits:It is useful for low field farmers.It's Very easy to carryIt can be used for different types of plants. It is very easy to set a suitable distance of each Plant.It's easy to operate.We can save man power.We can save time.It has low price to prepare.We can save the unnecessary waste of fertilizer.Future Scope:We are decide to do the next process of this machine to improve the below stepsIt can be used for all continues sowing crop.We adapting 3 wheels in triangular type to this machine for easy to move in the field.We maintain this

machine in our hand.We can adapt the different types of wooden droppers for different types of plantation.We can put compost in any season from this machineWe can use this machine in any type of soil.

Project Code:Engg-06 Online ID:1985

Title: WORKING OF ELECTRONIC VACUUM CLEANER
Name: ADITYA RAJESH AMBEWADIKAR Std: 10
Guide: MRS.ARUNA JAIVANT JADHAV
School: KARNATAKA DAIVAJNYA ENGLISH MEDIUM SCHOOL

ABSTRACT:
First cut the bottle; from center and make holes at the bottom of bottle; then stick the motor at the bottom of bottle; and take wires from it and then keep the net a the top of the bottle; take the other piece of that bottle and attach the pipe to it; now join both piece of bottle and connect to the motor and to the battery and start it. It starts working as a vacuum cleaner.Conclusion: The motor starts rotating and by the pressure it intake the air and with the air the dirt comes in and get stuck in net and air goes out from the holes at the bottom of the bottle.

Project Code:Env-01 (Team) (Jr) Online ID:1940

Title: Acacia pycnanthaís Ripen Seed Pod as a Natureís Friendly Liquid Cleaning Agent for Stains Removal
Name: Shashank Bewoor & Pavan Byahatti Std: 8th std
Guide: Gurusiddappa Madnalli
School: Dr G V Joshi Rotary English medium High school Ada

ABSTRACT:
Acacia pycnantha's Ripen Pod Extract as a Nature's Friendly Liquid Soap/Cleaning Agent/ Hygienic Bio Sanitizer Origin of Idea: In ancient days peoples who believed that trees were god and used to worship them. We noticed in tree that some part of fruit that is ripen pods as being waste and used to be burnt. This made me to think and inspired me to make any best use out of this bio waste. Our ancestors make use of herbal products for cleaning purposes and it made me curiosity to study on stains on different materials in houses hold articles. This made us curious to learn more about this plant and make a scientific study on its property to remove stains of any materials as it produce foam like any other soap.I shared this experience with my guide and he suggested I decided to reach on it support of Agastya International Foundation.Background Research: Every plant on earth as its own value either it may be medicinal or commercial; nothing is useless in nature some plants provide food and some of them helps in many way to mankind. In India Acacia pycnantha tree is wildly grown as a forestry tree but it is mostly found in Western Ghats of Sayidhi hills region of Karnataka state. But it provides more ripen pods found to be as agro waste every year. These available resources is been burnt as waste materials therefore I decided to make waste out of best by preparing herbal cleaning agent for materials like clothes; tiles; glassware; plastics; wood and for any other materials. This inspired as to focus on Accacia pycnantha ripen pod as herbal sanitizer. Materials: Acacia pycnantha's Ripen Pods Containers Scissors Petridishes Glass beakers(250ml); (500 ml) Glass Conical

flask(250ml) Reagent Bottles Test tubes Spatula Measuring cylinders Funnels Glass Rods Weighing Machine Grinder Distilled water Whatman's filter paper Cutter Different Surfaces viz. Clothes; Ceramic; plastic; Glass; Steel; Burette Stop watch Sieving plate StainsHypotheses:ØWe can make Acacia pycnantha's ripen pods liquid soap/cleaning Agent by different methods.ØDifferent surfaces can be cleaned by the extract we get from the Pods.ØForestry tree waste source can be utilized as cleaning agents ØAcacia pycantha ripen pods extract solution sample of different proportion can be used to remove stains from any materialsØEco friendly natural bio herbal liquid cleaning agents comparing to chemical detergentsØFrom results it was found that can be used as liquid soap samples gel; Hand wash; shampoo power; vegetable bio wash; shaving cream; and many more application.ØMethodology:•Acacia pycnantha ripen seed pods were collected from garden.•Fully ripen seed pods were cut into small pieces grinded into mixer till fine powder is obtained•Fine powder is sieved•In 1:5 and 1:10 ratios we prepared the solution of powder with distilled water by filtering it with whatman's filter paper•We selected different stains for testing viz. mud; pickles; tea; and ink and fruit juice. •We also collected different surfaces for testing viz. clothes; glass; plastic; steel and wood. •We short listed set of Experiments for testing.•We arranged the experimental setup for testing.•We did PH test of solution.•We also did Foam TestChemical Components: Conclusion:Experimentation on different materials with variety of stains like mud; tea; pickle and Ink. without disturbing the nature of the material in experiment. It is having natural soap property grown as ornamental tree or forestry tree herbal solution is bio degradable without polluting the environment and it works in both types of hard and soft water… Result: A per our experiments/tests stains were completely cleaned by S1(1:5) & S2(1:10); We didn't found any side effects on materials used.Merits:•It's almost neutral in nature•It can be easily cultivated in any warm place of India.•Can easily be prepared by anyone.• It's almost no or low cost product.Future Scope:üIn further we are going to study effects on mixing with natural soap nut powder and soap berry fruits to know and focus on preparation of the sample solution for longer use.

<u>Project Code</u>:<u>Env-02 (Team) (Jr)</u> **Online ID:1941**

Title: Natural Pesticide from the leaves of Drumstick and Bonduc Nut plants for Rice Weevil

Name: Niranjan Mulimani & Vinayak Kumbar Std: 8th std
Guide: Narayan Babanagar
School: GBS Vijayapur

ABSTRACT:
Beaker 03-We can add 4 drops of Bonduc Nut Liquid Extract and 10insecticidal rice weevil then it can observe an every 5 minutes up to 20 minutes. These observations we can record in a tabular column. Qualitative Tests:•Odor test

•Extract Concentration TestResults:1.Comparing our experimental observation we found that the extract liquid drumstick leaves is more effect than the drumstick green and dried leaves.2.Comparing our experimental observation we found that the extract liquid Bonduc Nut leaves is more effect than the Bonduc Nut green and dried leaves.3.Comparing 1 and 2 we come up with result that is extract drumstick leaves is more effective from extract Bonduc Nut Leave.Conclusion:For our experimentations and results we have concluded that the prepared Drumstick leaves extract solution is more effective to remove Rice weevil from food grains; without disturbing the nature of the food grains. Merits:•To prevent the easily insecticidal rice weevilfrom food grains.•We can use medically healthy plants so it's very good for health.•In a short time we can prevent insecticide from food grains.•This method is very easy to all for using.•These plants easily available in a field.

Project Code:Physics-01 (Team) **Online ID:1895**

Title: Can humans generate electricity using their energy?
Name: Tushar Satish Bableshwar & Anoop Rajeshkumar Talegaon
Std: 9th
Guide: Manik Upadhaya
School: Sant Meera English Medium School;Angol;Belagavi

ABSTRACT:
Our project consists of two models; the first one is the simple generator that lights a small L.E.D. with the human power.The second model is the modified version of the first model that is built through D.C. motor;dc to dc boost converter ;diode and capacitors.this can generate electricity about 1 watt and has a USB output so a Phone can be Charged easily in emergency cases.The first model consist of a motor and a rotator and second also consist of rotator but D.C. motor.The second generator is very useful for giving energy to USB devices.

Project Code:Physics-02 (Jr) **Online ID:1921**

Title: AIR COOLER
Name: SIDDHARTH S ANKALE Std: 8
Guide: X
School: AMRITA VIDYALAYAM; BELAGAVI ; BHAVANI NAGAR ; BGM

ABSTRACT:
Aim : to use less electricity and get more benefitsmaterials : dc motor;12v battery;container with its top covered bottle;ice cubes;wires;button;small fan of plasticprocedure : first take a container and make a big hole in the middle and fix a half cut bottle. And connect the dc motor and fan appropriately. Put the ice cubes inside the container and close the cover. Switch on the button and enjoy the cool air.

Project Code:Tech-01 (Team) (Jr) Online ID:1942

Title: Save the electricity Bill from Renewable Solar Energy
Name: Kiran Annigeri & Muthuraj Tadahal Std: 8
Guide: Basavaraj Tadahal
School: Govt Higher Primary School Sharewad

ABSTRACT:
We got this idea in class when our teacher taught us about the electricity and its application with related to its generation by even solar power thought solar panels. So we made attempts to know more about the different solar powered device like solar lamps of streets and we met some persons who use it too.Solar-powered lighting consists of a solar panel or photovoltaic cell that collects the sun's energy during the day and stores it in a rechargeable gel cell battery.The intelligent controller senses when there is no longer any energy from the sun and automatically turns the LED light on using a portion of the stored energy in the rechargeable battery.Hypotheses:This device can be used as multipurpose. Easy to carry Easy to ConnectionEasy to run any 12 Voltage Devise3watt led luminary with dc to dc constant current circuitry more than 85% efficiency constant light outputMobile charger Operation 6-8 hoursTemperature compensation for better battery charging for various climate and terrainDo Not Short circuit Multi level overload protection.

Project Code:Tech-02 Online ID:1957

Title: An Efficient Biocoil based Photosynthetic Life Supporting Bioreactor
Name: Shadab M Karnachi Std: 11
Guide: Saleemabi Kolur
School: Karnataka Science PU college Dharwad

ABSTRACT:
This Bioreactor is inspired by Lloyd Godson's Biocoil for underwater systems. The bioreactor works on algae Chlorella vulgaris. Each module has its own bioreactor; comprising a tube which extends around the station perimeter and reservoirs. Every 15 hours; 15 liters of a suspension of Chlorella replaces the reservoirs of each module and rapidly form biomass by the bright light; aeration and mixing. After 15 hours this suspension portion is changed; it is poured into the tube; and a new portion is pumped in its place. When a new chlorella portion forms a biomass; the portion which was poured flows in the tubes. Knowing how much biomass formed in the each reservoir; we pour every 15 hours in the life-supporting compartment an algae amount formed in all reservoirs. After the suspension drying we obtain a dry biomass and water for the needs and drinking. All waste products are recycled by bacteria. The clean water recycled after using goes back into the same tube with the suspension; and muddy residue goes into the garbage compartment. The bioreactor uses power from station's solar panel or RTG. This

way; the produced clean water; edible food and oxygen is supplied to each module.