



# INDIA INTERNATIONAL SCIENCE FESTIVAL 2019

## IISF 2019 Kolkata

## Young Scientists' Conference

## Abstract Book

### ORGANISERS



Ministry of Science & Technology  
Ministry of Earth Sciences  
Ministry of Health Family Welfare  
Government of INDIA

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# IISF KOLKATA, 2019

## Preface

The Young Scientists Conference (YSC) of the India International Science festival (IISF-2019) was held in the Biswa Bangla Convention Center (BBCC) in Kolkata during November 5-7, 2019. The grand event was inaugurated in the august presence of Prof. Ashutosh Sharma, Secretary, DST, Dr. Sekhar C. Mande, Director General, CSIR, Prof. Vijay Bhatkar, Chancellor, Nalanda University and President, VIBHA and Shri. U. Rajababu, Project Director, Mission Shakti, DRDO at the Main Hall of Biswa Bangla Convention Centre.

The conference brought near about 1500 researchers including experts from different subjects. Around 1400 young scientists/researchers/PhD scholars/post-doctoral fellows/entrepreneurs from various universities, post graduate colleges, engineering colleges, R&D organizations, national laboratories, IITs, NITs, IISERs, Industries and NGOs under the age of 45 participated YSC to discuss their research findings and exchange innovative ideas on the identified research themes such as - **Make in India, Bio Diversity, Frontier Areas of Sciences, Swachh Bharat, Swasth Bharat, Digital India, Water Crisis and Conservation.**

The conference activities were spread over three days with plenary, oral and poster sessions. There were interactive panel discussions on entrepreneurship, various aspects related to career progression, overseas education and opportunities for the young scientists. The dignitary representatives of embassies highlighted various educational programs of various countries. Near about 1000 delegates presented their scientific research through poster presentations.

This book of abstracts showcases the research findings of the brilliant minds of the country. Even a cursory look at the themes of the book of abstracts tells the huge potential and progress being made by our researchers in India.

YSC organizing committee thanks all the participants for making this event a grand success.

*"Do not be led by others, awaken your own mind, amass your own experience, and decide for yourself your own path." ~ Atharva Veda*

Coordinators, YSC

Jajati K. Nayak  
Ayan Datta

# Prof HemaLatha Goli

Image	Delegate ID	Theme	Details
 <p>HEMALATHA GOLI 06/01/2017</p>	YSC 12564	Make in India	<p><b>Category :</b> Software Engineering</p> <p><b>Organisation :</b> KKR &amp; KSR Institute of Technology &amp; Sciences</p> <p><b>Designation :</b> Professor</p>

Now a days, security is becoming a major problem in any online delivery system. There may be chances of theft or misuse of customer ordered item. The main theme of the paper is to deliver goods in a smart and secure way without misuse of the goods. Here goods mean food. The Customer orders the food, through a mobile app and the restaurant accepts the order. When the order is ready to ship, the ordered item will be placed in a delivery box with digital locking mechanism and an OTP will be generated by respective associate of restaurant to the registered mobile number of the customer. Using OTP, the delivery boy opens the digital lock and delivers the item to the customer. With this, there is no worry to the customer about his ordered item and he gets more satisfaction. It is not only for food, it can be applicable to any online delivery products without change of item. This problem is solved by the IoT technology and Cloud Computing concepts

# Dr PRAMOD BHARGAVA

Image	Delegate ID	Theme	Details
	YSC 10194	Make in India	<b>Category :</b> Others <b>Organisation :</b> D A V COLLEGE <b>Designation :</b> ASSISTANT PROFESSOR

## Make In India:

Prospects and Challenges

(Special reference to Manufacturing Industry)

Dr. Pramod Bhargava

Assistant Professor

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## Abstract:

In the recent epoch of Indian economy the service sector has just surpass the manufacturing industry. Indian manufacturing industry is countenancing double faced challenges, one from over shadowed service sector in domestic economy and other from the diversified global market. The "Make in India" policy initiated by government of India could be consider as a godsend for manufacturing industry as the need to raise the global competitiveness of the Indian manufacturing sector is imperative for the country's long term-growth. The policy is the first of its kind for the manufacturing sector as it addresses areas of regulation, infrastructure, skill development, technology, availability of finance, exit mechanism and other pertinent factors related to the growth of the sector, rising demand in India, together with the multinationals' desire to diversify their production could together help India's manufacturing sector to reach \$1 trillion, while creating up to 100 million domestic jobs. The country is expected to rank among the world's top three growth economies and among the top three manufacturing destinations by 2020.

. The country's central and state governments can help by dismantling barriers in markets for land, labor, infrastructure, and some products. But the lion's share of the improvement must come from India's manufacturers themselves by enforcing the utmost efficiency in manufacturing process. But it has been noticed that manufacturing which is contributing a handsome part in GDP is struggling for its survival. Recently leading companies in automobiles, textiles and FMCG sectors are shutting down their production houses. The paper has been written to attract the attention towards the present scenario of manufacturing sector under the edges of Make in India.

# Mr Prasanna Kumar D

Image	Delegate ID	Theme	Details
	YSC 10015	Make in India	<b>Category :</b> Others <b>Organisation :</b> Sri Ramakrishna College of Arts and Science <b>Designation :</b> Student

Digital technology is rapidly replacing analogue technology in many areas of optical instrumentation. One such field is spectroscopy. Spectroscopy has vast application in Food, Medicine, Space, Quality Check, Research and Production fields. The saddest part is that only a few companies in India manufacture optical instruments and the rest are imported. But still due to demand, these spectrometers are paid more than their actual value. This proposed method uses advanced options with various sensors, RGB light sources and wireless option for acquiring data in remote. These features deliver improvements in the quantity, quality and reliability of data for laboratory and research based nuclear spectroscopy systems, providing end users with data with a higher degree of accuracy and confidence to support their findings and conclusions, and the development and deployment of handheld instruments and field-based instruments for remote and unattended operations.

This Wireless Digital Spectrometer detects wavelengths in the visible range at 610, 680, 730, 760, 810 and 860nm of light [18 frequencies of light sensing from 410nm to 940nm optional], each with 20nm of full-width half-max detection integrated with 405nm UV, 5700k White, and 875nm IR LEDs. The device also has multiple ways for you to illuminate objects that you will try to measure for a more accurate spectroscopy reading. The options for illumination are White Source, RGB variance Source. The collected data will be sent to the cloud for analytics and the output can be derived in graph format. The data sets can be customized as per user's requirement.

Hence the Digital spectrometer can replace the existing spectrometers used in the fields of Medicine, Food Processing, Quality check, etc. with ease of cost and advanced technology not compromising with accuracy.

# *Dr HARINATH AIREDDY*

Image	Delegate ID	Theme	Details
	YSC 10080	Make in India	<b>Category :</b> Physics <b>Organisation :</b> Alliance University <b>Designation :</b> Assistant Professor

Cantilever beam magnetometer was designed, fabricated and demonstrated its ability to measure magnetostriction (in-plane and out-of-plane), magnetization and magnetocrystalline anisotropy of ferromagnetic thin films as a function of magnetic field. Notably, for the first time, here we demonstrate the well-established and simple cantilever beam technique for electric field modification of magnetization of ferromagnetic/ferroelectric heterostructures by considering the induced strains in ferromagnetic thin films through the converse piezoelectric effect in piezoelectric films. Moreover, this set-up also allow to measure the electromechanical properties such as transversal piezoelectric strain ( $d_{31}$ ) and stress ( $e_{31}$ ) coefficients of piezoelectric thin films. This magnetometer is simple in construction, inexpensive to manufacture, easy to operate along with noise subtraction provision and having sensitivity nearly 8 nm in the determination of cantilever beam deflection.

# Mr Shibsankar Roy

Image	Delegate ID	Theme	Details
	YSC 11529	Make in India	<p><b>Category :</b> Biology  <b>Organisation :</b> Indian Statistical Institute  <b>Designation :</b> Project Assistant</p>

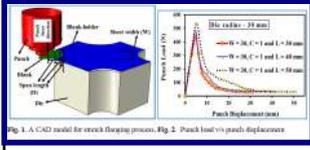
Extensive research studies have linked changes in animal behaviour with abrupt alterations of environmental events. This led to the conclusion that quantitative observation of animal behaviour or physiology might therefore serve as a plausible tool to predict changes in environmental conditions. There are reports of abnormal changes occurring in various natural systems prior to climate change, natural calamity and so on. Among these, unusual animal behaviours or UABs are considered important phenomenon. A study noted that small animals and insects showed UABs first and then larger animals like birds, rodents and mammals up to the hour before the earthquake. Insects have been found to exhibit a rich array of behavioural responses. Ants are considered to be one of the most social, attractive and practical insects for quantitative behavioural and physiological observations owing to their specialized ability to perceive even minor changes in environmental conditions. Numerous studies have shown the influence of different levels of flooding on ant responses, effect of temperature variation on daily activity of an ant's nest, increased indoor activity of ants prior to rain, marked disturbance in ants' standard routine few hours before small local earthquakes, circadian variation of ants' electroretinogram (ERG) response and so on. In this backdrop, a specialized bioelectrical signal-detection instrument has been devised to perform a preliminary electrobiophysical study for the recording of alteration in electrical activity of nerve cell population around an ant's brain region with change in their movement type - slow walking, intermediate walking and running. The detection instrument consisted of three main segments – an electrode chamber, an amplifier and a monitoring component consisting of millivoltmeter or oscilloscope (with recording system) which recorded the fluctuation in electrical activity of the nerve cell population of ant's brain region with subsequent rapid change in the movement of ant. Further modification of this detection instrument, in future, may be used in studies concerning experimental investigation of the effect of various environmental stimuli like changes in atmospheric pressure, atmospheric electrical field, humidity, temperature, acoustic signals and the like on ants' activity from electrobiophysical perspective.

## Mr jeevanantham sundarasamy

Image	Delegate ID	Theme	Details
	YSC 12071	Make in India	<b>Category :</b> Others <b>Organisation :</b> Sri ramakrishna engineering college <b>Designation :</b> Assistant Professor

In War field, when a soldier is attacked by an opposite army, they suffer a lot due to lack of immediate medical assistance, since it would take more time for the medical team to reach the War field, which is unsafe for them to enter. So, for this an intelligent autonomous rover is proposed, which can be utilized to save the soldier under critical conditions in War field. This system has an emergency band that is attached to the soldier's vest that gives the soldier's health status and location. In case of emergency, the rover navigates itself by finding the shortest path and reaches the soldier's location as soon as possible. After reaching the location, the rover opens the back door along with a stretcher. The rover waits for the soldier to get into it, If the soldier was not able to get inside then it seeks the help from the nearby soldiers to get the injured soldier into the rover. The rover first recognizes whether the soldier belongs to the army or not. It then starts moving to the nearest medical camp. This rover is equipped with 360-surveillance system which is used to know about the status of the War field. It also consists of health monitoring system, thermal imaging system, communication devices to update the soldiers injured status so that the treatment can be arranged in advance. It is completely automated and solar powered and it doesn't need any human intervention in the mission. It has bulletproofed arrangement, so that it assures the safety of soldier inside the rover. This system can also be adopted with the drone and submarines in order to make them useful for Air force and Navy. This will reduce the rescue time of the soldier and can also reduce the death rate of the soldiers in war field.

# Mr Surendra KUMAR

Image	Delegate ID	Theme	Details
 <p>Fig. 1. A CAD model for stretch flanging process. Fig. 2. Punch load vs punch displacement</p>	YSC 12170	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> AcSIR-AMPRI Bhopal <b>Designation :</b> PhD (SRF-NET)

Flanging is one types of bending process, which is highly used in automotive and aerospace industries. Mainly three types of flanging process are used in industries i.e. straight, stretch and shrink flanging [1]. It is used for providing of stiffness, smoothness and assemblies of different parts [2]. Stretch flanging process depends on material parameters, geometrical and process parameters [3, 4]. In present work, influence of initial flange length for prediction of thinning and crack were studied using FEM simulation and Fig. 1 shows the CAD model for same case. In this study used the aluminium alloy AA5052 sheet. FE simulation results were presented in terms of edge crack, thinning and punch load distribution with respect to punch displacement. The maximum thinning and forming load were found at 50 mm of initial flange length, whereas it is minimum for 30 mm initial flange length and it is shown in Fig. 2 (i.e. shows the punch load v/s punch displacement). FEM simulation is an efficient tool for prediction of defects in stretch flanging process and for optimization of process parameters.

**Keywords:** Stretch flanging process; FEM simulation; Forming load and strain distribution; Edge crack and propagation.

#### References:

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# Dr Raj Pal

Image	Delegate ID	Theme	Details
	YSC 12401	Make in India	<p><b>Category :</b> Applied Engineering</p> <p><b>Organisation :</b> CSIR - Central Scientific Instruments Organisation</p> <p><b>Designation :</b> Senior Scientist</p>

Landing on a ship or aircraft carrier is a critical task with ship's random roll, pitch & heave, low ambient lighting and poor meteorological visibility making it even more difficult. The existing Visual Landing Aid Systems (VLAS) used by Indian Navy (IN) have low detection range, poor resolution, poor backup systems and incompatibility with Night Vision Imaging Devices (NVIS). Among three major technologies involved in this, Optical Landing System (OLS) used presently by IN Aircraft Carrier has low detection range and poor resolution causing difficulty to pilot in judging Aircraft position w.r.t datum while approaching Carrier for landing. The existing Helicopter Deck Landing Systems have filament light sources, high power consumption & thermal issues, low reliability, and NVIS non-compatibility restricts overall operational capabilities especially night operations. To overcome these, we have conceptualized and designed configurations of Visual Landing Aid Systems viz. Precision Fresnel Lens Optical Landing System (PFLOLS) & Manually Operated Visual Landing Aid System (MOVLAS) for Aircraft Carrier, and NVIS Compatible Helicopter Deck Visual Landing Aid System (HVLAS) for P17-A Class Frigates. The PFLOLS, which provide glideslope information to pilot approaching for landing on Carrier, is designed using Fresnel & Lenticular lens combination to form meatball virtual image 150 ft. behind the source providing light beam of 0.3°x40° precisely in all OLS Cells. The virtual meatball enables pilot detect it from >1.0NM, resolve and track from >0.75 NM, allowing to make finer corrections when coming closer for landing. The system has undergone various levels of user trials at Naval Base at Goa and Chandigarh. The backup system for the main system (OLS) is designed as MOVLAS System, used in emergency during rough sea when stabilization limits are exceeded, or for pilot/LSO training. It is under user trials. The NVIS compatible HVLAS, designed for P17A Class Frigates, is designed as an integrated system for coordinated operation of fifteen types of customized Light Units & Optical References, with varying intensity & light distribution profile, control functions, and mounting mechanisms, to guide safe approach path to approaching helicopter with NVIS capability for critical missions not available presently with IN. It has been evaluated by Indian Navy Pilot and Flight Test Engineer. The innovative design, fabrication and test methods improve pilot landing experience in terms of better detection range & improved resolution. In this paper, optical design, fabrication, assembly challenges and other aspects related to VLAS for Naval applications are covered.

# Mr Shrihariprasath Basuvaiyan

Image	Delegate ID	Theme	Details
	YSC 12423	Make in India	<b>Category :</b> Electrical <b>Organisation :</b> Anna University <b>Designation :</b> M.S (Research Scholar)

The main objective of this project is to help the fishermen not to navigate beyond other country's border. If a fisherman navigates beyond the country's maritime border, an alert is generated indicating that the fisherman has crossed the maritime border and location of the fisherman boat is also navigated using LoRa Technology. LoRa is a long-range, low power wireless platform that has become the core technology for the Internet of Things (IoT) networks. LoRa is spread spectrum modulation technology which is derived from chirp spread spectrum (CSS) technology. LoRa Technology and the open LoRaWAN protocol enable smart IoT applications. This project consists of two main components. They are LoRa End Device and LoRa Gateway. LoRa End device consists of GPS, MEMS Compass, Host Microcontroller and LoRa RF module. LoRa End Devices are fixed in fisherman boat which sends the current location of the boat periodically. A LoRa Gateway is used to collect data from fisherman's boat and location of the fisherman to coastal guard system on the seashore to navigate weather the vessel has crossed the maritime border. Thus, the coastal guards in the seashore can assist and provide additional help to those fishermen from anywhere. Keeping in mind about the lives of Indian fishermen, this device has been created to help them not to move beyond Indian. On the whole, it is an attempt to build a suitable device for the fishermen at a reasonably low cost. The proposed system prototype has been implemented and analysed implementation issues and Research challenges towards RF Range, Quality of Service and Date Reliability.

# Mr Prabin Jose J

Image	Delegate ID	Theme	Details
	YSC 12350	Make in India	<p><b>Category :</b> Applied Engineering</p> <p><b>Organisation :</b> Kamaraj College of Engineering &amp; Technology</p> <p><b>Designation :</b> Assistant Professor</p>

In world population 15 percent of the people are physically disabled. They are facing lot of difficulties to interact and control the external real time devices. In healthy people brain sends the command signal to muscles thorough spinal cord to perform the necessary output actions. But in paralyzed person (person incapable of movement) the path way is interrupted .So the person was not able to perform any output actions. They are not able to interact with any external devices or environment. These kinds of people can understand and listen the expressions of other people but they are not able to express and communicate their thoughts .These kind of people needs a smart system which helps them to communicate with other people and devices.

This innovative project aims to design a smart brain computer interface system which will help the paralyzed people and normal people to interact and control external devices by their thoughts by using their brain waves. The Brain computer interface (BCI) system is designed to serves as a communication channel between human brain and the outside world. The brain computer interface system extract the signal from the brain and analyze the signal and make decision what the brain wants to do and send the information to external devices (like prosthetic arm) . This project also aims to provide a solution to prevent accidents in transportation sector. Recent survey says that most of the accidents are happening because of the drowsy state of the driver. The smart brain computer interface system is used to monitor and identify the brain state of the driver. If the driver feels drowsy or the driver is consumed alcohol then the BCI system generate a trigger signal which prevents the start of the car which will prevent accidents. Based on the recorded brain waves, the system generates a trigger signal to perform the necessary control operation. The proposed system is designed by using Raspberry pi kit and matlab simulation software. The recorded EEG signal is amplified and pre-processed to enhance the signal. The signal processing algorithms are used to extract the statistical features (mean, Energy) from the signal. The classification algorithms (neural network, fuzzy logic) are used to perform to generate the control signals. The generated control signals are transmitted to the external devices through Zig-bee module. Based on the received control signals the external device has to perform their operation.

# Mr Nilesh Kumar Jaiswal

Image	Delegate ID	Theme	Details
	YSC 11464	Make in India	<p><b>Category :</b> Electrical  <b>Organisation :</b> VIT Vellore  <b>Designation :</b> Senior Research Fellow (CSIR-SRF)</p>

India is emerging as one of the promising country in device technology and many fabrication facilities are likely to come up in the near future. Therefore it is important to have knowledge in the advanced technologies; wide bandgap, Gallium Nitride (GaN) devices are an enabling technology for high-frequency, high-efficiency power electronics; over conventional Silicon power devices. Before designing GaN power devices, it is useful to understand their characteristics and the challenges that typically accompany.

In this brief, we propose a novel vertical GaN split-gate-trench power MOSFET (SGT-MOSFET) that exhibits significant improvement in its high electrical breakdown voltage ( $V_{br}$ ) without compromising on-resistance ( $R_{on}$ ) in unit cell size. The Si based split-gate has been studied extensively for low and medium voltage applications [1]. We are using vertical GaN based split-gate concept for the first time to evaluate its improved figure of merit and to overcome the limitations of the conventional vertical GaN trench-gate power MOSFET (TG-MOSFET) [2]. In the proposed device, we have split and deep trench gate of a conventional device divided into two parts, upper part connects to the gate and lower (field-plate) part connects independently to the source. The drift region of SGT-MOSFET device highly improves the trade-off between  $R_{on}$  and  $V_{br}$  with conventional counterpart. Using TCAD simulation, the study and analysis of on-state, off-state performance and electric field distribution characteristics were performed. Compared with the existing TG-MOSFET, SGT-MOSFET has ~43% less  $R_{on}$ , ~30% higher  $V_{br}$  and ~3.6 times superior Baliga's figure of merits. The proposed device structure can be a promising alternate and future candidate for medium to high voltage ratings, low switching loss applications.

# Dr MOHD Farooq NAQSHBANDI

Image	Delegate ID	Theme	Details
	YSC 12570	Make in India	<b>Category :</b> Biology <b>Organisation :</b> Jamia Millia Islamia University New Delhi <b>Designation :</b> Ph D Scholar

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## Abstract :

Cancer is responsible for the biggest havoc of deaths among human population in contemporary era with 15% mortality globally. Chemotherapy used for the treatment of cancer has several limitations including, the drugs resistance and toxicity to the normal cells. The researchers are attracted towards the plants based solution of this havoc and are experimenting on plants for the cure of this disease. After extensive literature survey three plants used in traditional system of medicine were selected for this study to evaluate their effect on control of cell growth in cancer in vitro. The flower buds of the plant *Eugenia caryophyllu*(Clove)s, berries of the *Solinum Nigrum* (Makio)and seeds of the plant *Sesamum indicum* (Til)were used during the study.The extracts of these plants were tested against live non-small cell lung cancer cells and colorectal cancer cells. The results indicate that these plants used in our traditional medicine are highly effective for the control of the growth of cancer cells. The different analytical techniques revealed the chemical nature of the compounds present in extract these plants which are responsible for anticancer activity.

Keywords: *Eugenia caryophyllus*; Extraction; Anti-cancer; ; Lung cancer.

# Ms SNIGDHA SANYAL

Image	Delegate ID	Theme	Details
	YSC 11601	Make in India	<p><b>Category :</b> Others  <b>Organisation :</b> Centurion University  <b>Designation :</b> Assistant Professor</p>

On seeing logo of “Make in India”, mechanical spare parts prompt us to think of Indian industries and the gears in it tell the story of growing India. Surprisingly, tribal belts of Odisha are producing all most all of their daily need products without such big industries or machines and practicing the ‘make in India theme’ in real sense for ages. These children of earth possess indigenous knowledge for making fabric, terracotta utensils, glass, stone statues and metal artefacts from locally available materials. Notably, these traditional manufacturing process neither produce any harmful chemicals nor require any post treatment plants for any other residues.

An initiative from DST helped to visit untouched rural tribal pockets of Odisha:

- Where a trash collector is found to have skills of ‘Dhokra art’ and he himself was unaware of the value of this art.
- Where hands act as machines in weaving cane & bamboo and deliver a fish traps within 17 minutes - Never filed a patent for its uniqueness
- Where all utensils follow strong logic and based on scientific principles, yet disperse our cultural aroma unlike foreigners searching for eco-friendly products.

This paper discusses such glimpse of rich knowledge and technology. The factual data produced here, is collected during live field trips carried for a DST project on ‘Cultural mapping of Odisha tribal art and its sustainability’. It is vital to document and to support these vanishing art at this stage with ‘Make in India’ move. It is well said, ‘true India still resides in rural areas’. Outcomes from this research urges for further exploration, recognition of such SC&ST hubs with sustainable wisdom and to establish market links to flourish. Incorporation of modified versions of these ‘well tested practices’ will make India one step ahead in remaining self-sufficient, swatchhh and swasth too.

# Mr DHIRAJ KUMAR BHARTI

Image	Delegate ID	Theme	Details
	YSC 12067	Make in India	<b>Category :</b> Energy Engineering <b>Organisation :</b> CSIR-AMPRI <b>Designation :</b> (PhD) RESEARCH SCHOLAR

Here, highly crystalline hydrothermal grown zinc silicate ( $Zn_2SiO_4$ ) nanorods were synthesized. The crystal structural of willemite structure of the  $\beta$ - $Zn_2SiO_4$  nanorods and its phase formation was studied using XRD spectroscopy. Morphology was also investigated using Field Emission scanning electron microscope (FE-SEM) and average length and radius of synthesized nanorods were found to be in the range of 1.5 - 2  $\mu m$  and 25-30 nm respectively. Fourier transform-infrared spectroscopy (FT-IR) and Raman is used to investigate the functional group of  $Zn_2SiO_4$  nanorods. Dielectric studies was also investigated using Impedance Analyser and the very high dielectric constant of 222 was observed at room temperature. Ultra-high dielectric constant of  $\sim 19185$  was achieved at an elevated temperature of 100  $^{\circ}C$ . Frequency and temperature dependent dielectric constant, loss and ac conductivity were also investigated in the frequency range of 20 Hz–2 MHz and RT–300  $^{\circ}C$  respectively for the first time. Optical, dielectric and electrical properties of  $Zn_2SiO_4$  has great potential towards various high-k dielectric nano-transistor and nano-scale high energy capacitor applications.

# Mr PRIYAKANTH R

Image	Delegate ID	Theme	Details
	YSC 12070	Make in India	<b>Category :</b> Agricultural Engineering <b>Organisation :</b> BVRIT HYDERABAD COLLEGE OF ENGINEERING FOR WOMEN <b>Designation :</b> ASSOCIATE PROFESSOR

Modern era is marching towards the rapid growth of all sectors including the agricultural sector. Agriculture contributes about 17 - 18 percent of India's GDP where 70 percent of its rural population primarily depend on it with 82 percent of them being small and marginal. Agriculture is up to four times more effective than other sectors in reducing poverty. Coming to seed planting, from ages many methods have been implemented but they resulted in low seed placement, less spacing efficiency and also caused severe backache to the farmers resulting in various health issues. Also the labor cost is increasing day by day and labor availability has become a great concern to the farmers. So we have developed a "SOLAR SEED FLING MACHINE" which includes simple yet effective features.

The design of Solar Seed Fling Machine consists of a weed cutter, placed in the front and the weeds cut can be used as natural fertilizers further. Next, a water sprinkler is placed to wet the land before ploughing making the process easier. Both the plough blade and weed cutter can be lifted accordingly based on the angle and depth required. The seed planter below which an orifice is placed whose size can be adjusted by the farmer himself so that single seed planting to hill planting can be achieved. To this orifice a tube is connected to which a lid with open-chain action is attached which allows the seeds to fall in a particular location based on the seed spacing and row spacing required. Finally, a mud cover is placed to retain the moisture content of the soil. The very important feature of the machine is that all the power required to run the machine is drawn from an automatic tilted solar panel working based on sun's direction so that maximum energy can be drawn which is sufficient to run the whole process.

# Dr Murugan E

Image	Delegate ID	Theme	Details
	YSC 12120	Make in India	<b>Category :</b> Energy Engineering <b>Organisation :</b> Hindusthan College of Arts & Science <b>Designation :</b> Assistant Professor

It is an era where the automotive sector is witnessing advancements, one such result is an electric vehicle. Pollution control is an impeccable outcome addressed by the electric vehicle (EV). Moreover, it becomes mandatory to monitor the status of health of the source of the electric vehicle-‘battery’. Battery management seems to be an age-old concept but the methodology to achieve is the challenging task. Solid-state batteries like lithium-ion batteries are used as the sources for EVs. The impact of using such kind of batteries is that it can be recharged and has improved discharge. Parameters like the state of charge, state of discharge and state of health are studied. Internet of Things enhances data computing in a precise way, it is important to focus on the performance parameters of the battery. The status of the battery is updated in the cloud where the users have an authentic accessibility to the cloud. Any degraded conditions are notified to the user at once, this could be achieved with the help of the wi-fi module ESP8266. Apart from that, even the GPS technology is enabled in this model. It also helps to locate the exact location of the EV which in turn helps in notifying the driver about the nearest charging station once when the battery level is below the pre-defined level.

As the prolonged use of the battery results in the degraded performance in order to enhance the performance, a model predictive controller (MPC) is designed to address the issues of the fast charging of the battery. Instead of constant current and constant voltage protocol, a dynamic model is determined considering battery as a nonlinear model. Here state of charge and state of health are the two main parameters to study the success rate of the model predictive controller based charging technique. Both the results are compared between constant current and constant voltage charging and model predictive controller based charging, it was observed that the charging time can be reduced with evolved controllers. Basically, the input to battery during charging is the current, but here the battery is charged with current dependent on time. So this achieved with the help of designing suitable cost function and also reasonable future targets. Then the optimal battery charging problem is formulated along with state estimation to complete the final model.

# Mr RAHUL GUNDLURU

Image	Delegate ID	Theme	Details
	YSC 11116	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> Chadalawada Ramanamma Engineering college <b>Designation :</b> Student

Now a days, The fuel prices especially the petrol is raising steadily day by day and the pollution due to vehicles in metro cities & urban areas is increasing continuously. To overcome these problems, an effort is being made to search some other alternative sources of energy for the vehicles. So, there was a new method to run a motor bike by using pneumatics.

Initially the compressor sucks air from the atmosphere and it is compressed in the compressor. Now the compressed air is send to air cylinder. The flow of air is regulated by pressure regulating valve. From this valve the compressed air hits the air motor and to regulate speed of air motor by using flow control valve and transmit power from air motor sprocket to rear wheel sprocket through chain drive.

Here, The renewable source of energy is used to run this motor bike by reducing non-renewable energy sources for saving future generation.

# Mr MD TALHA JAMAL

Image	Delegate ID	Theme	Details
	YSC 11426	Make in India	<p><b>Category :</b> Chemistry  <b>Organisation :</b> Jamia Hamdard  <b>Designation :</b> PhD scholar</p>

A novel scheme has been design and develop to synthesize 1,3- Benzoxazine derivatives by the reaction of salicylaldehyde with p-toluidine which afford Schiff base, The Schiff base on reduction with Sodium borohydride yields a reduced Schiff base which on cyclization with different aldehydes gives different substituted Benzoxazine derivatives. All the synthesized compounds are specially characterized by modern analytical techniques such as Infra-red, NMR spectroscopic techniques which confirm T1, T2 & T3 is pure compounds. The pharmacological action was evaluated by In silico, In vivo & histopathological studies which showed that the T1, (B5/F7) exhibited potent antihepatotoxic activity were more than the standard silybon-70 (Silymarin). However, further optimization may be developed and might be useful for future research as potent antihepatotoxic agent to protect liver from the foreign toxicants.

**Materials & Methods:** The reaction of progress schemes was monitored by thin layer chromatography (TLC) using silica gel G by ascertaining single spot under iodine chamber visualization. The IR spectrum of the synthesized compounds were recorded in KBr pellets on Thermo-Nicolet Nexus 670 FTIR Spectrophotometer. The <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra were recorded on Bruker Avance 300MHz Spectrophotometer in CDCl<sub>3</sub> and tetramethylsilane (TMS) as internal standard. The Mass spectrum was recorded on JEO – JMS – DX – 300 spectrometers and the m/z value of only intense peak have been mentioned and nominal masses were used the calculation of molecular weights of the synthesized compounds.

#### Results & Conclusion

The docking studies revealed that receptor-ligand complex was stabilized by hydrogen bonds, hydrophobic and electrostatic interactions. Docking study of the synthesized compounds revealed interactions with the receptors (PDB ID: 3E4E).

The design compounds have been successfully prepared and characterized by different modern analytical techniques. The studies have shown that the T1, (B5/F7) exhibited potent antihepatotoxic activity were more than the standard silybon-70 (Silymarin).

# Dr Prosenjit Das

Image	Delegate ID	Theme	Details
	YSC 11669	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> CSIR-Central Mechanical Engineering Research Institute <b>Designation :</b> Senior Scientist

Dental brackets, scientifically known as orthodontic brackets, are used for correction of irregular and deformable teeth of the people by applying continuous pressure on the teeth to slowly move the teeth in a specific direction, over a period of time, which helps to make proper teeth alignment. Among the options available, ceramic brackets offer an unbeatable combination of performance and beauty, owing to their tooth colored appearance, significantly better mechanical properties, increased transparency and decreased reactivity with the oral environment compared to their metallic, and plastic counterparts. But, ceramic brackets are imported to our country and available for a cost of approx. 5 times than its metallic counterparts. In the present work, Tooth colored and biocompatible dental brackets (made of alumina ceramic) have been indigenously developed, with design modifications and innovative process technology, keeping in view of bringing them within the reach of common people by ensuring manufacturing ease and cost effectiveness.

# Mr ABISHAD P.M

Image	Delegate ID	Theme	Details
	YSC 11800	Make in India	<b>Category :</b> Nano Engineering <b>Organisation :</b> Mangalore university <b>Designation :</b> Research scholar

This investigation focuses on the development of novel antimicrobial metal oxide nanocomposites against multidrug-resistant organisms. Aluminum cobalt oxide nanocomposites were synthesized and optimized by using a solution combustion process followed by calcination. Morphological characterization and phase transformation of the nanocomposites were studied by using UV-Vis, DLS, FTIR, XRD, SEM-EDX, Raman spectroscopy, and photoluminescence spectroscopy. In this study, aluminum-cobalt oxide nanoparticles successfully evaluated against methicillin-resistant staphylococcus aureus and MIC, MBC and FICI were determined. ROS generation and blood compatibility of synthesized nanoparticles were studied with RBC. Moreover, the antioxidant and anti-biofilm activity of the aluminum cobalt oxide nanocomposites increased proportionally with the rise in concentration and the present study conclude synthesized nanomaterials stable under the presence of biological fluids and cell viability studies demonstrated as less toxic.

# Mr Keyur Kacha

Image	Delegate ID	Theme	Details
	YSC 11856	Make in India	<b>Category :</b> Others <b>Organisation :</b> Vairagya Consultants <b>Designation :</b> Electrical Engineer

In this paper, Packed Bed Nitrifier Biotower(Trickling Filter) is studied for concentrated Ammonical Nitrogen containing wastewater from industries. A number of facilities exist where Trickling Filter with plastic packing are used after secondary treatment for nitrification and in that case it is well described as “Tertiary Nitrification Trickling Filter”. A number of investigations across the world have shown that Organic loading rate, Hydraulic loading rate and TKN loading rate versus percentage efficiency has been depicted to establish the applicability of attached growth biological systems as Nitrogen removal process for wastewater systems. The study indicated that wetted perimeter is the key design criteria for PBNR. Based on the data available from the study, an attempt has been made to establish the applicability of Schulze’s equation and Germain equation has been studied and normalized Germain equation  $K_{20AS}$  values for plastic packing media for wastewater from Pesticides industry, Speciality chemical industry and Agro chemical industry have been developed.

# Mr SAGAR PATIL

Image	Delegate ID	Theme	Details
	YSC 11151	Make in India	<b>Category :</b> Physics <b>Organisation :</b> Yashavantrao Chavan Institute of Science, Satara <b>Designation :</b> Research Scholar and lecturer

**Abstract:**  
The polyaniline films were successfully prepared onto the stainless steel substrates using three electrode system electrodeposition method. The deposited films display dark greenish in color. The deposited films were adherent and uniform in nature. The X-ray diffraction (XRD) patterns show amorphous nature of polyaniline films. Due to this reason only stainless steel peaks are observed in XRD patterns. The electrical properties of polyaniline films such as cyclic voltammetry at different scan rates and different concentration of electrolyte, current time response, etc. were studied. The electrical properties display it will be useful for various applications such as electrochemical sensing of glucose, supercapacitors, etc.

# Ms Shital P Dehankar

Image	Delegate ID	Theme	Details
	YSC 11655	Make in India	<b>Category :</b> Chemical Engineering <b>Organisation :</b> DOT, Shivaji University <b>Designation :</b> Assistant Professor

Energy is the capability to do work has different form as hydropower, biomass, solar energy, wind, geothermal, and ocean energy renewable energies. The demand for petroleum-based fuel goes on increasing a lot of important than ever attributable to the rising of technology. However, since the staple of fuel, crude oil may be a non-renewable resource; this increasing demand would cause the depletion of petroleum reserves. Biofuel is made directly or indirectly from organic material and animal waste. Biofuel, the fuel that's with chemicals ready from oil, provides associate degree environmentally friendly substitute for diesel oil. Today, Biofuels are going to significant role in meeting India's energy wants. India isn't solely an outsized businessperson of oil/crude oil with the prospect of hyperbolic imports within the future, however additionally has important potential for the assembly of biofuels within the country. Within the present study, chemical process cracking of vegetable oil with the help of clay catalyst yielded higher BIOFUELS to it obtained from thermal cracking of oil at an extreme temperature. At the analyzed, vegetable oil has saturated fatty acid as a practical cluster hexadecane gift that is appropriate for cracking. After cracking observed that the product had highly present of gasoline and kerosene compounds. The results from experimentation as a 7 ml product from 50 ml of palm oil with a 24% yield under the process temperature of 300 oC. So, conclude that by a study of palmitic acid as saturated fatty acid chemical process catalytic cracking hydrocarbons as Biofuel.

# Dr Smita Srivastava

Image	Delegate ID	Theme	Details
	YSC 11702	Make in India	<p><b>Category :</b> Others  <b>Organisation :</b> AMITY  UNIVERSITY UTTAR  PRADESH  <b>Designation :</b> Assistant  Professor</p>

India is moving at a fast pace towards becoming great 'knowledge economy', where major focus is laid on education and skill development. Indian workforce accounts for around 700 million people, where 12 million gets added every year. As per AICTE (2017), around 60% of the 8 lakhs engineering graduates remain unemployed, moreover, 40% of the state employers had raised an alarming issue that finding quality talent is a big challenge. Around 47% of the graduates are not employed due to lack in English communication and cognitive skills (British Council Report, 2018; ASSOCHAM). To enhance the employability and economic growth schemes like Make-in-India was initiated which is poised to provide growth of national economy by boosting 24 sectors thus enhancing the competitive edge of the country. It is concluded that there exists a big gap between skills and employability. Identifying the need for such robust demand, Government of India has initiated several steps like setting up of NSDC and skill councils; increasing vocational training institutions; schemes for skill development; financial aids in association with industries/ institutions. Industries like automobiles, banking and finance, construction, engineering, healthcare, tourism, management had raised a significant demand for professional trainings and English communication. Such concerns were considered during this study which resulted in form of few recommendations like, need for quality certifications, professional trainings, industry exposures, collaborative teachings, robust marketing and communications etc.

**Keyword:** Communication Skills, Employability, Make-in-India, Skill development, Training.

**References:**

1. Narendra Modi government plans to make soft skills part of technical syllabus, The Economic Times, Sept. 15, 2015
2. Prashant K. Nanda, The Narendra Modi-led govt has tasked NITI Aayog Arvind Panagariya to generate timely and reliable employment data to fulfil the key priority of job creation, Live Mint New Delhi, May 10, 2017.

# Dr PALLAVI GANESH UNDRE

Image	Delegate ID	Theme	Details
	YSC 11133	Make in India	<p><b>Category :</b> Physics  <b>Organisation :</b> Department of Physics, Shikshan Maharshi Dnyandeo Mohekar Mahavidyalaya, Kalamb Tq. Kalamb  <b>Designation :</b> Assistant Professor</p>

Title: Investigations of Photosensing Properties of the Chemically Bath Deposited Cu<sub>2</sub>O Thin Film

Authors: Pallavi G. Undre, Prashant B. Kharat, R. V. Kathare

Author's Affiliation: Department of Physics, S. M. Dnyandeo Mohekar Mahavidyalaya, Tq. Kalamb, Dist. Osmanabad, Maharashtra, India - 413507

Corresponding author: undre.pallavi@gmail.com

**Abstract:** Cuprous oxide (Cu<sub>2</sub>O) nanocrystalline thin films were prepared on two types of substrates known as crystalline silicon and amorphous glass, by a facile and low-temperature chemical bath deposition method. Scanning electron microscopy images confirmed that Cu<sub>2</sub>O particles covered the entire surface of both substrates with smoothing distribution. The root mean square surface roughness for the prepared Cu<sub>2</sub>O thin films on glass and Si (111) substrates is 4.16, and 3.36 nm, respectively. Meanwhile, X-ray diffraction results demonstrated that the two phases of Cu<sub>2</sub>O and CuO were produced on Si (111) and glass substrates. The optical bandgap of Cu<sub>2</sub>O thin films synthesized on glass substrate is 2.42 eV. Furthermore, the prepared Cu<sub>2</sub>O nanocrystalline thin films have shown low reflectance value in the visible spectrum. Metal-Semiconductor-Metal photodetector based Cu<sub>2</sub>O nanocrystalline thin films deposited onto Si (111) was fabricated using aluminum and platinum, with the current-voltage and photoresponse characteristic investigated under various applied bias voltages. The fabricated Metal-Semiconductor-Metal (M-S-M) photodetector had shown 126% sensitivity in the presence of 10 mW/cm<sup>2</sup> of 490 nm light with 1.0 V bias, displaying 90 and 100 ms response and recovery times, respectively. These findings have demonstrated the suitability of M-S-M Cu<sub>2</sub>O photodetector as affordable photosensor in the future.

References:

- Undre P.G., Kharat P.B., Kathare R.V., Jadhav K.M. (2019). Ferromagnetism in Cu<sub>2</sub>+ doped ZnO nanoparticles and their physical properties. *Journal of Materials Science: Materials in Electronics*, 30(4), 4014-4025.
- Undre P.G., Birajdar S.D., Kathare R.V., Jadhav K.M. (2018). Enhancement of Electrical Resistivity in Nickel Doped ZnO Nanoparticles. *Procedia Manufacturing*, 20, 477-480.

# Mr DEEPAK S

Image	Delegate ID	Theme	Details
	YSC 11569	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> Central Institute of Plastic Engineering and Technology - IPT <b>Designation :</b> Research Scholar

Static Penetration resistance is an essential design requirement for shear thickening fluid (STF) impregnated polypropylene fiber composites for soft body armour applications. Furthermore, the penetration depth of soft armour fabric composites is known to be sensitive to the indenter nose shape. This gives a challenge for understanding the composite failure mechanisms, as the target fabric deformation and penetration depth capacity vary significantly from one indenter to another. The present work is intended to explore the indenter nose shape sensitivity of the static punch shear (S-PS) behavior of STF/Polypropylene fabric and different volume percentages of synthesized silica suspension with shear thickening fluid (40% and 57%). STF impregnated PP fabric thickness will vary three different layers (single, double & triple). This study reveals that the viscosity of the fluid extensively depends on morphology, volume fraction and particle size distribution of the synthesized nanoparticles. A series of punch-shear experiments with different indenter geometries representing conical, elliptical, flat and hemispherical and tensile tests have been performed all the three layers. The results show that STF layer thickness increases indenter penetrating depth will reduce.

# Ms Soniya Shanmugam

Image	Delegate ID	Theme	Details
	YSC 11677	Make in India	<b>Category :</b> Electrical <b>Organisation :</b> Kongu engineering college <b>Designation :</b> Post graduate

Pulse per second (PPS or 1PPS) is an electrical signal that has a width of less than one second and a sharply rising or abruptly falling edge that accurately repeats once per second. PPS signals are output by radio beacons, frequency standards, other types of precision oscillators and some GPS receivers. Precision clocks are sometimes manufactured by interfacing a PPS signal generator to processing equipment that aligns the PPS signal to the UTC second and converts it to a useful display. 1 PPS Pulse distributor is system designed to distribute us with multiple 1 pps timing signal through different output channels while input is set to be single 1pps timing signal directly provided from the atomic clock

# Mr RAVINDRA BISHT

Image	Delegate ID	Theme	Details
	YSC 11920	Make in India	<p><b>Category :</b> Mechanical Engineering</p> <p><b>Organisation :</b> CSIR - CENTRAL BUILDING RESEARCH INSTITUTE, ROORKEE</p> <p><b>Designation :</b> SENIOR SCIENTIST</p>

Tower crane, Gantry crane, Truck-mounted crane, Floating crane, and Aerial crane are some of the famous cranes used in the construction industry. Mobile crane is typically an assembly of crane with a mobile base, an on-board mast, trolley/telescopic boom, and hoisting assembly. There have been continuous research efforts for the improvement of the capabilities of mobile cranes in terms of the workspace, payload dynamics, swing control, new mechanism development, and tip-over stability analysis. Workspace is a very crucial specification for industrial mobile cranes and improvement of workspace makes them more viable, particularly for mass housing construction. Most of the cranes are working as a fixed crane, but the crane base is mobile mostly for transportation from one place to another. For the case of mobile crane operation while base motion, it is extremely difficult to control the payload disturbances of the mobile crane due to the dynamic interactions between the mobile base and combine boom, mast, trolley and hoisting assembly.

After extensive kinematics analysis, dynamics analysis, FEM analysis, and mechanism motion synthesis, the proposed crane design and development concept is unique form the existing one. It addresses the modular design concept, therefore, the cost-effective mobile crane system is easy to transport and quick self-assembly and disassembly as per the construction site for specific requirements. Stability is another issue to address when we increase the payload capacity of the mobile crane. The developed crane having hybrid locomotion is also addressing the mobility issue in the existing mobile cranes when we erect at the construction site. The crane design is light in weight and having a new base design with telescoping features to adjust the span of base width and height. This feature provides easy to change the locomotion modes and transfer the overall crane load including payload to the beam/column of building at floor level, therefore, the crane is also suitable for multi-storied construction. This feature also allows the crane easy to operate from the ground level as well as floor level.

In the Indian construction site, still, crane users and manufacturing agencies are using the imported crane design and technologies/licenses. Therefore, there is a definite need to develop a cost-effective modular mobile crane suitable for (G+3 or equivalent) mass housing scheme in India.

# Dr Chand Pasha

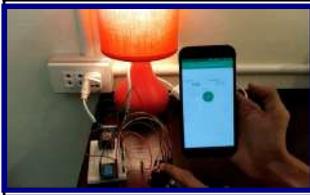
Image	Delegate ID	Theme	Details
	YSC 11128	Make in India	<b>Category :</b> Biology <b>Organisation :</b> Osmania University <b>Designation :</b> Assistant professor

PCR amplicons, restriction digested DNA needs to be separate first by electrophoresis and desired fragments to be extracted from gel. Both the steps are tedious and expensive. For gel electrophoresis high quality and expensive agarose is required. For gel extraction expensive and multistep kits are required. We propose a new matrix made with a polymer and inorganic chemicals in which DNA can be separated and desired fragments can be extracted and purified without usage of kit. Matrix mixture is taken in water and boiled

After dissolving of substances poured in gel casting tray with ethidium bromide. Sample loading and electrophoresis is carried out as normal. It's cost is almost one tenth of traditional system and single step is required for gel extraction. Purification will be similar to normal method. Gel formed is clear and bands are also prominent. Almost 90% of the DNA is extracted in this method, the DNA obtained is suitable for restriction digestion, ligation, PCR, Sequencing, transformation etc.

Details will be presented during the conference. Patent has been filled and under examination.

# Mr Rahul Pawar

Image	Delegate ID	Theme	Details
	YSC 11156	Make in India	<p><b>Category :</b> Electrical</p> <p><b>Organisation :</b> Tulgabhawani maha vidyalaya</p> <p><b>Designation :</b> College</p>

The project voice controlled home Automation project helps to control the electrical loads and the ability. The project helps to control the electrical loads based on input signal from bluetooth the bluetooth device receives input signal from android device. This system is especially beneficial in case of handicapped or aged people who find it difficult to walk and operate the electrical switches to turn on or off the loads. This system is especially beneficial solved this issue as now the user just has to give voice command's to turn on or off the loads. There are used demonstrating light,fan,heater, ac. All these loads can be used to make the electrical loads based on the power steering and individual turn on /off or all loads at the same time . This system solved the issue by inter a unit with home appliances that switched these loads based on the input receive from android device the android app also provides an effective GUI for providing this functionality this system makes used of arduino the bluetooth receive is interface with microcontroller in order to accept the command and then react according. It operates the loads through a set of relays using a relay driver ic. Relays are used between the electrical loads and controls unit this system thus can be used in many domestic applications and in industrial setups. (Purpose of the the project) the purpose of the project is developing a prototype that van be used in for control home Automation electronics used voice command's bbased on the project back ground the prototype should aim of the following purpose of the project voice controlled home Automation project helps to control the electrical loads and controls unit and science college results from the electrical loads and controls unit and the ability to turn on

# Mr Krunal Devi

Image	Delegate ID	Theme	Details
	YSC 11399	Make in India	<b>Category :</b> Electrical <b>Organisation :</b> Torrent Power AMGEN Sabarmati <b>Designation :</b> GAT

As we know that the temperature of earth is increasing day by day due to global warming. According to research the temperature of earth is rising by 1 degree Celsius every year. There is also solution available to this that is desert coolers and air conditioners. But again the cost of installation as well as running and maintenance cost are high which is not affordable by all class of society. The Person belonging to economically backward background cannot afford the cost of installation and also can't bear the excessive heat in summer season. Comprising all this problems I have created a solution to this. In this project I am developing a technology which is overcoming the flaws of conventional cooling techniques used widely. I have developed this project using the thermoelectric principle. The main equipment used is Peltier module. This project involves in making of cost effective air conditioning and refrigeration system which can be used in industries as well as for the domestic purpose. In it process involves a open loop temperature control system which is enclosed in insulated cabinet. The goal of this project is to make an economical cooling system which is affordable by every segment of the society. Apart from this there is a hybrid preheating system for heating water which can be used in other purpose.

# Ms Pratibha Kushwaha

Image	Delegate ID	Theme	Details
 <p>PRATIBHA KUSHWAHA 08-08-2019</p>	YSC 11950	Make in India	<p><b>Category :</b> Others <b>Organisation :</b> Sam Higginbottom University of agriculture technology and sciences <b>Designation :</b> Research scholar</p>

**AIM:** The present study was taken out to develop bakery products with integration of black rice flour and flax seed flour. It elevates the nutrient content and improves properties with the objectives to develop "Sweet biscuits" by using black rice flour and flax seed flour to assess its organoleptic, nutritional quality which decreases the cooking time. Hence, a study was undertaken with the objective to develop bakery product "sweet biscuits" by using black rice flour and flax seed flour mixture and to assess its organoleptic and nutritional properties and cost.

**METHOD AND MATERIALS:** Standard recipe "sweet biscuits" served as a control T0 (8.47) with five treatment combinations of "sweet biscuits" were prepared by replacing refined flour with different ratios of black rice flour and flax seed flour which were referred to as T1(7.20), T2(7.63), T3(7.50) and T4( 8.23), T5( 8.07) respectively. They were analyzed on 9 hedonic score card for different sensory attributes. Proximate analysis was used to determine the nutritional composition of "sweet biscuits".

**RESULT AND DISCUSSION:** The result revealed that the T4 (8.23) was found to be the most acceptable regarding its overall acceptability followed by T1 (7.20), T0 (8.47), T2 (7.63) T3 (7.50) T4 (8.23) and T5 (8.07) respectively. Nutrient content was significantly increased in treatment T4 as compared to control and cost content was significantly increased in treatment T4 as compared to control.

**CONCLUSION:** It was concluded from the results that the value addition of integration of black rice flour and flax seed flour at different levels can improve the sensory attributes of "Sweet biscuits" thereby enhancing the nutritive value and cost though acceptable and reasonable as compared to market price.

**Keywords:** Black rice flour, Flax seed flour, proximate analysis, nutritional quality.

# Mr Mukesh Vidyarthi

Image	Delegate ID	Theme	Details
	YSC 11201	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> CRAIM INDUSTRIES <b>Designation :</b> Founder

The aim of the study is to identify the effect of pre charging of inlet air on diesel engine with specially designed AIR INLET MENIFOLD CHARGER .In addition of this the variation of I.P of engine with variable voltage is the part of the study. It is found that due to charging of inlet air randomization of air and fuel mixture is significantly improved which further improves the I.P, thermal efficiency and other parameters at different RPM of engine

# Mr Suresh Babu Balu

Image	Delegate ID	Theme	Details
	YSC 11320	Make in India	<b>Category :</b> Nano Engineering <b>Organisation :</b> Sri Krishna College of Technology <b>Designation :</b> Asst professor

The application of nanotechnology in the textile finishing is increasingly being explored due to its unique and valuable characteristics. This has brought up many innovative finishes as well as new application techniques. The nano-finished textile materials are found to have better physical properties than the conventionally finished textiles, in areas such as anti-microbial properties, UV blocking, soil-resistance, etc. In the present work, zinc oxide nano-particles were prepared by wet chemical method using zinc nitrate and sodium hydroxide as precursors and solublized starch as stabilizing agent. These nano-particles were impregnated onto cotton fabrics by pad-dry-cure method using acrylic binder. A fine medium weight cotton fabric samples were used for this. The aims are to impart anti-microbial functions to the textile substrate and the functional properties of coated fabrics. The nano-ZnO impregnated cotton fabrics showed excellent antimicrobial activity against two types of representative bacteria viz. gram-positive organism (S.aureus) and gram-negative organism. (E. coli)

# Dr TANMOY SARKAR

Image	Delegate ID	Theme	Details
	YSC 11379	Make in India	<p><b>Category :</b> Mechanical Engineering</p> <p><b>Organisation :</b> Ghani Khan Choudhury Institute of Engineering and Technology, Malda</p> <p><b>Designation :</b> Assistant Professor</p>

Impact of austempered gray cast iron (AGI) on Indian foundry industry

Tanmoy Sarkar<sup>1</sup> and Goutam Sutradhar<sup>2</sup>

<sup>1</sup>Ghani Khan Choudhury Institute of Engineering and Technology, Malda-732141

<sup>2</sup>Director, NIT Manipur, Imphal – 795004

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**Abstract:** Gray cast iron is a widely used engineering material. They are attractive due to low cost, good mechanical, wear and thermal properties along with vibration damping capabilities. Therefore, gray cast iron is used to various automotive parts such as vibration resistant casings, clutch plates, brake discs and flywheels. The physical and mechanical properties of gray cast irons are mainly determined by its microstructure, which consists of a ferrite or pearlite or ferrite-pearlitic matrix in which graphite flakes are distributed. Austempering heat treatment process is applied to gray cast iron to produce austempered gray cast iron (AGI) with much improved mechanical and wear properties. Whatever, austempering process develops an ausferrite (ferrite and high carbon and stable austenite) microstructure. This unique microstructure (ausferrite) contributes excellent mechanical properties to austempered gray cast iron (AGI). Due to its excellent properties, AGI finds applications in the industry and automobile sectors such as gears, pistons, cylinder liners etc. and also in agricultural equipment. Application of AGI is increasing day by day in the world market. However, India is a second largest casting materials production country. In the Indian market around 70% casting materials are gray cast irons. Therefore, austempered gray cast iron (AGI) will be a great potential material in Indian foundry industry. Therefore, the aim of this study is to discuss details properties of AGI and their impact on foundry industry as well as in education sectors.

# Ms nidhi nagar

Image	Delegate ID	Theme	Details
	YSC 11381	Make in India	<b>Category :</b> Agricultural Engineering <b>Organisation :</b> Govt. college Plawal <b>Designation :</b> Research scholar

**Abstract:** In this article, we report a survey on thinking of the generation gap in rural areas of district Palwal Haryana. The problem faced by an adult person in this region with their parents related to education accommodation, relation, and custom. This problem is not only the present problem but it's an ancient problem since the Vedic period. Society in the rural areas of Palwal facing a problem such as education, accommodation, relationship, technology, custom, and male child dominant society due to generation gap.

Issue Percentages (%)

Education 28

Accomodation 10

Technology 23

custom 10

Relation ship 50

Male dominant 68

**Keywords:** education, technology male dominant

# Mr Sumit Ranjan Sahu

Image	Delegate ID	Theme	Details
	YSC 11462	Make in India	<p><b>Category :</b> Energy Engineering  <b>Organisation :</b> International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI)  <b>Designation :</b> Project Scientist B</p>

The transport sector accounts for 23% of the global energy consumption and approximately 20% of the greenhouse gas emissions. In this context, electric vehicles (EVs) are set to be the fastest-growing market which can extensively reduce the greenhouse gas emissions produced by the transportation sector. Lithium-ion batteries (LIBs) are the most popular choice of power sources for EVs due to their high energy/power density, long cycling life and maintenance free. After the announcement of the FAME scheme by the Government of India to promote the use of EVs in India, several manufactures have developed EVs (two, three and four wheeler) using imported LIB packs. However, it is anticipated that under the Make-in-India approach, the indigenous development of LIB can reduce the cost of the battery by ~20%. In this context, ARCI has established a pilot plant facility for the indigenous fabrication of large format lithium-ion cells, along with a comprehensive testing facility at one of its centres at Chennai (Centre of Automotive Energy Materials, CAEM). At CAEM, cylindrical (up to 5 Ah) and prismatic (15 Ah) types of lithium ion cells have been developed using lithium iron phosphate (LFP) and graphite electrodes. LIB modules of 48V, 720 Wh and 48V, 850 Wh have been assembled and their performance was evaluated. Further, on-road test trails have been conducted with e-cycle and e-scooter using the 720 Wh and 850 Wh modules, respectively. E-cycle gave an average mileage of ~30 km/charge with an average speed 25 km/h. While, e-scooter yielded a mileage of ~52 km/charge with an average speed 25 km/h. In parallel, the fabrication of electrodes by environmentally benign and low cost aqueous-binder route is in progress. In addition, the development of next generation battery materials is one of our major ongoing research activities. Detailed results will be presented during the conference.

# Ms ABHIRAMI RAJENDIRAN

Image	Delegate ID	Theme	Details
	YSC 12160	Make in India	<b>Category :</b> Applied Engineering <b>Organisation :</b> KENDRIYA VIDYALAYA <b>Designation :</b> COMPUTER INSTRUCTOR

Robotics and AI are the future of all latest technologies. Using sensors like Gyroscope, camera HD sensor, Motion sensor, UV sensor, IR sensor and colour sensor we can develop models for problems in day to day life. This paper deals with small and cost effective way in which these robotic models can make it to every household in India.

1. Home Based Cost effective Dental Cavity Detector: Using Camera Sensor and Image processing applications, a small device is made which can resemble a toothbrush (or even smaller). This sense the presence of cavities using depth calculation and colour of plaque.
2. Wall Painter Bot: A bot which moves up on the walls with minimum battery power and paints the required colour using colour sensor detection.
3. Swimming Pool Cleanser Bot: In order to mix right amount of chlorine and find items which are accidentally into the pool. Also integration with motion sensor could lead to identification of humans (who accidentally fell into the pool) without wasting much time and thereby giving an alarm to the coach / authorities.
4. Calorie Counter Bot: A small sensor based bot which captures a plate of food and gives the amount of calories on it. This can help a lot of obese people and health conscious people.
5. Miniature Speaker with GPS Location: A small sized speaker based on the voice of insects which could go in high decibel sounds coupled with location access will be helpful during emergency situations for Sexual assault and rape victims , physically challenged people struck in lifts / escalators.

# Mr anurag jain

Image	Delegate ID	Theme	Details
	YSC 11219	Make in India	<b>Category :</b> Electrical <b>Organisation :</b> UNISTAR <b>Designation :</b> Engineer

Star/Delta and Zig/Zag transformer Based DSTATCOM for Power Quality Improvement

Er. Anurag Jain

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Abstract: Now a day's power quality improvement is an important issue in respect of increasing application for nonlinear loads. A group of devices, called Custom Power Devices (CPDs) are in use now days, for power quality improvement. One of the CPD the distributed static compensator (DSTATCOM) is proposed for compensating the power quality problems. The DSTATCOM is design for improvement, performance of distribution system under linear and nonlinear loads. Especially in nonlinear load DSTATCOM inject harmonics currant components into the system to improve Power quality of source currant and source voltage. Further in the proposed systems the rating and size of DSTATCOM is reduced with the help of Star/Delta and Zig/Zag transformer. The proposed systems are employed for the reduce rating of dc currant, compensation of harmonic currant, reactive power, neutral currant, load balancing and the voltage regulation. In this research work comparison of proposed topology of DSTATCOM consisting of a three leg VSC with the Star/Delta and Zig/Zag transformer is employed for power quality improvement. The performance of proposed DSTATCOM system is demonstrated under balanced, nonlinear loads in MATLAB/Simulink environment.

# Ms Ankita Sao

Image	Delegate ID	Theme	Details
	YSC 10196	Make in India	<b>Category :</b> Others <b>Organisation :</b> Pt. Ravishankar Shukla University Raipur <b>Designation :</b> student

This poster is about substitution of micro-inverter with MPPT charge controller instead of centralized inverter. A micro-inverter is simply a miniaturised inverter, sized to suit individual solar panel rather than a string a string of solar module. A MPPT charge con-troller is also incorporated in the system to have better overall system efficiency. By having micro inverter on each solar panel, the outputs are completely independent of each other. Monitoring of each part of the system becomes much easier which makes troubleshooting much easier. This paper includes some outstanding features of micro inverters which will be helpful in increasing the solar PV technology. Nothing is perfect, and micro inverters do have some downsides as they are on roof they do suffer from more extreme weather, they have not yet reached the same efficiency levels of string inverters, they will add about 20-30% more to cost of conventional solar power system.

# Mr Mohanish Pushpakar

Image	Delegate ID	Theme	Details
	YSC 10197	Make in India	<b>Category :</b> Others <b>Organisation :</b> Pt.ravishanker shukla university raipur cg <b>Designation :</b> Student

The "SOLAR AUTOMATIC SPRAYER AND IRRIGATION SYSTEM" is the new thought for our farmers, who has work day and night for us. To meet the future "energy demands", the use of non-conventional energy as an alternate so-lution is inescapable. With this motivation, we have developed a SOLAR AUTOMATIC SPRAYER AND IRRIGATION SYS-TEM. The Automatic sprayer is a three wheeled vehicle which sprays pesticide in any given vineyard with almost nil human as-sistance. With the help of this tool, we can easily do irrigation along with the crop spray in our farms, even without going to that place. It is a robotic system that will work double –sided, on one side it will be able to sprinkle a high range of fertilizer and on the other side it will be able to carry out proper irrigation.

# *Mr PASUPULETI VENKATA MANIKANTA SUBHAKAR*

Image	Delegate ID	Theme	Details
	YSC 10842	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING <b>Designation :</b> Student

In a day we do many activities. To save time we use some means of transport to make our employment easy. As necessity is the mother of invention, so many ideas took their real form and are running fruitfully. In these ideas internal combustion engines(IC engines) though were invented in 1870s are still serving the humanity in reaching their destination. IC engines proved that they are human friendly but not environmental friendly. Though electric motors are ecological friendly, they didn't prove well due to some of their disadvantages. So this is proved that we cannot compete with IC engines in its features. But we cannot go away it like that as air pollution has become one in the top five human health risks. So we tried to find the solution for this with a new initiative. The main cause for the pollution from IC engines is the gases it produces. They are destructive to the environment. The principle IC engines follow is combustion which is compulsory for the piston to move up and down. To run our vehicle, piston should move irrespective of the source with which we move the piston. It may be through combustion or by any other method. So for the piston to move up and down we use another renewable source of energy which is environmental friendly with the same competency as that of IC engines. This idea will also prove to be more efficient than electric motor too. So our paper presentation is on the improvement of IC engine with some alteration. We have applied some basic principles of science for moving the piston which was the job of combustion in IC engines previously. The energy and the materials we use in this process are purely environmental friendly.

## *Mr kamalahasan murugan*

Image	Delegate ID	Theme	Details
	YSC 11001	Make in India	<b>Category :</b> Others <b>Organisation :</b> dr mgr educational and research institute <b>Designation :</b> research engineer

The main aim of this study is to retrieve data from gas sensors to monitor and assess air pollution using IOT technology. The objective of the study is to fabricate a front-end device to monitor air quality through various sensors and establish a data transmission network for environmental and meteorological parameters and also to assess and forecast for every 10 minutes the ambient air quality through GIS. To monitor and sense the harmful gases along with micro meteorological parameters like (CO, CO, SOx, O, NOx, PM 2.5, PM10, dust temperature and humidity) with renewable source. Transmit real-time air quality data and GPS Coordinates through wireless communication technology. To design and develop an indigenous IOT PCB board. Air Quality parameter determination through remotely controlled framework and create a remote station android portability. To assess the insitu ambient air quality using GIS analysis for output delivery and remote sensing hyperspectral data validation.

# Mr sai Krishna

Image	Delegate ID	Theme	Details
	YSC 11061	Make in India	<b>Category :</b> Mechanical Engineering <b>Organisation :</b> CHADALAWADA RAMANAMMA ENGINEERING COLLEGE <b>Designation :</b> student

## NEW MODEL TRI-CYCLE FOR HANDICAPPED PEOPLE

A.SAI KRISHNA

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**ABSTRACT:** A Tricycle which use forward and rearward movement of handlebars to provide an additional force for driving or propelling the rear wheel of a tricycle. A driver rod linkage extended from handlebars to the rear wheel to transmit the fore and aft movement of the handlebars to drive the rear wheel of the tricycle. Due to this linkage the fore and aft motion converted into rotary motion. The transfer of motion doesn't affect the conventional steering.

The normal braking system is used for this tri-cycle in the front wheel to regulate the speed of the vehicle .The handle bar is used to control the speed either increase or decrease by moving the handle bar in a linear direction ,and changes the direction by rotating the handle bar.

Maximum two people can sit in this tri-cycle and can travel safely from one place to another place. This tri-cycle reduces the human stress compared to old model tri-cycle. There is no mechanical chain in this, so there is less maintenance cost and easy to travel. It can be used by the handicapped-people, backward people or children.

This is for low speed applications and there may be chance to get a problem in bearing if it is used for a long time application

**REFERENCES:**Wikipedia,google.

# Mr Prashant Abbi

Image	Delegate ID	Theme	Details
	YSC 11072	Make in India	<b>Category :</b> Agricultural Engineering <b>Organisation :</b> RV College of Engineering <b>Designation :</b> Student

It has been administered that farmers do not use the safety masks, gloves and other protective gears during the spraying of pesticides which results into the access of pesticides in the blood stream through inhalation and dermal exposure which can adversely affect their eyes, skin and the respiratory system.

Therefore, we developed AgroSonic: A Fertilizer and Pesticide Sprinkler; it seems to be a good alternative in its preliminary phase for spraying fertilizers and liquid pesticides.

However, we felt that with only a sprinkler with sophisticated mechanisms, we may not be able to reach out to the masses, since its working would be rather complicated to be understood by the near illiterate Indian farmers.

Thus, we thought of making our device completely autonomous. The core concept of incorporating autonomous robotics into agriculture remains the goal of reducing reliance on manual labour, while increasing efficiency, product yield and quality. The device would scan the field area to be covered by itself, and then navigate around without the help of any human interference. Using a combination of GPS, laser measurement and ultrasonic positioning, our device will be able to adapt to location easily.

Sensors would facilitate real time soil scanning thereby suggesting and directing the machine to adequately spread fertilizers and pesticides to get the best possible output from the soil. The device hence will release exact quantities of Nitrogen, Potassium and Phosphorus that would be required for the soil on the basis of the data sent in by the scanners.

This enables the machine to perform crop spraying tasks more efficiently, with greater accuracy and less waste.

Through numerous meetings and seminars conducted in villages specially targeted at farmers on the operation and maintenance of AgroSonic, our goal of a fast, efficient and reliable distribution network interconnected on a village level will be set up.

# Mr VRSS Sumanth

Image	Delegate ID	Theme	Details
	YSC 10091	Make in India	<b>Category :</b> Mechatronics Engineering <b>Organisation :</b> PVP Siddhartha Institute of Technology <b>Designation :</b> Student

Small Unmanned Air Vehicles (SUAV)(fixed wing drone) has become a significant field of research in the recent past. Extensive usage and demand of SUAVs in both civil and defence applications is observed and hence the existing technology is undergoing a rapid advancement and innovation for better performance and efficiency. This project aims to study and design a low cost Fixed wing SUAV with 100+ km range and with a minimum 30 min. flying time and install an autonomous flight control system on board to control the vehicle with a 4G module installed in it is so as to increase its range beyond that of conventional SUAVs. It will be powered by a Lithium Polymer battery. Unconventional materials like Kevlar and glass based composites, Carbon Fiber reinforced plastics, etc are being studied to understand the merits and challenges in using them for fabrication by different additive manufacturing methods. If the design is made possible, it can carry payloads up to 2kg, which enables it to fulfill pre-defined and alterable defence missions like target and decoy, intelligence, communication and reconnaissance. Also it can cater for but not limited to fire rescue operation, research and commercial purpose aerial surveys.

# Ms Prema R

Image	Delegate ID	Theme	Details
	YSC 10100	Make in India	<p><b>Category :</b> Software Engineering</p> <p><b>Organisation :</b> scsvm university</p> <p><b>Designation :</b> Assistant professor</p>

1R.Prema, 2 Dr.P.Shanmugapriya

1, Assistant Professor and Research Scholar, Department of Computer Science and Engineering , SCSVMV University, Kanchipuram ,Tamilnadu,India.

2, Associate Professor, Department of Information Technology, SCSVMV University, kanchipuram Tamil Nadu, India

Security is an aspect that is given top priority by all political and government worldwide and are aiming to reduce crime incidence. Identify criminals at various security place such as airport, railway etc. This Proposed system compares captured images taken through the camera with the images of the criminals which are stored in the database.

Objective of this Paper is to detect the criminals in the public places such that railway, airport, banks etc.

This project is a step towards developing a real time face recognition system which can recognize static images and can be modified to work with dynamic images.

Dynamic images received from the camera can first be converted in to the static ones and then the Algorithm (Principal Component Analysis PCA, Eigen Face Approach) can be applied on them . Fast Radial Symmetry Transform Technique used for distinguish between the similar faces and identical twins to get higher accuracy result. because of state wise or region wise people may have similar features or similar faces. so that this project distinguish between similar faces and identical twins. There is an incredible amount of information present even in a small face image. Each face that we wish to classify can be projected into face-space and then analyzed as a vector.

Euclidean distance measure can be used for classification from database images.

# Mr Janardan Kundu

Image	Delegate ID	Theme	Details
	YSC 10156	Make in India	<p><b>Category :</b> Electrical  <b>Organisation :</b> Bikaner Technical University, Bikaner  <b>Designation :</b> Asst. Professor</p>

**Abstract:** This paper presents a comparative study on the design, electromagnetic analysis, system modelling and fabrication of two laboratory prototypes for attraction type electromagnetic levitation with single-axis control. The major objectives of this work are to evaluate parameters, determine force, inductance and current vs. air-gap characteristics, first using analytical formulation and then using FEM based calculations for both the prototypes. The finite element (FE) model has been developed using commercially available standard packages. A novel permeance function-based approach using Pohl's Method is considered for analytical formulation of these two systems. The results thus obtained have been verified by actual experiments too. Thereafter, the mathematical models for control of the systems have been derived analytically. Good agreement between predicted and measured parameter values also imply that the system modelling is accurate which leads to accurate design and implementation of analog controllers. The analog controllers have been designed, analysed and implemented for both the systems. Their performance have been simulated and then practically tested. These two attraction type levitation prototypes have been entirely fabricated in the laboratory. The prototypes consist of a steel ball of mass 62 gm and a flat rectangular steel plate of 148 gm mass. These have been successfully and steadily levitated.

This innovative work follows as:

- An electromagnetic levitation setup has been designed, modelled and fabricated where a ball of 62 gm. mass has been successfully and steadily levitated.
- An electromagnetic levitation setup has been designed, modelled and fabricated where a steel plate of 148 gm. mass has been successfully and steadily levitated.
- The practical results and results obtained from FEM analysis are found to be in very good correlation.
- Stabilizing controllers have been also designed for the above systems and their performance analysis has been carried out for 148gm rectangular shaped object.

## *Mr balaji thiru*

Image	Delegate ID	Theme	Details
	YSC 10160	Make in India	<b>Category :</b> Mechatronics Engineering <b>Organisation :</b> Veltech Rangarajan & Dr Sagunthala R@D Institutes of sciences and technology <b>Designation :</b> Assistant professor

The undertaking manages structure and manufacture of usage of a model transported unmanned guided vehicle (MUARV) for security applications. The structured MUARV was remotely controlled utilizing rapid, secure remote association. With built up the progression climbing instrument. The vehicle was given camcorders and controlled container and tilt movement. The live video was transmitted to an administrator in the direction and control station who controls controlling, speeding up, to control advanced cell application programming with the utilizing a joystick. And so on.

Keywords- MUARV, Tilt motion, Joystick,

# Mr JAYAKRISHNA SS

Image	Delegate ID	Theme	Details
	YSC 10173	Make in India	<b>Category :</b> Agricultural Engineering <b>Organisation :</b> COIMBATORE INSTITUTE OF TECHNOLOGY <b>Designation :</b> PG STUDENT

Plant disease has become a major threat to global food security. Plant diseases contribute 10–16% losses in the global harvest of crops each year. Plant disease affects the quality of fruits, vegetables, grains, legumes and causes heavy losses in production so we are Identification of the plants disease (FUNGAL) and its preventing the major losses in the yield and quantity of the agriculture product. (Stage-1) The studies of the plants diseases mean the studies of visually observable patterns seen on the plant health monitoring and disease detection for sustainable agriculture. It requires tremendous amount of work, expertise in the plant disease and also excessive processing time. Hence image processing is used for the detection of plant diseases it involves the steps like image acquisition, image pre-processing image segmentation, feature extraction and classification after completion of disease identification process (stage-2) terminating the disease cells by injecting flow of electrons to conduct small amount of electricity through plant inside on affected area of roots, stems, leaves. The shock does not seem to harm the plants. It gives rehabilitate to the plant and also this method may be a factor and less expensive way of cell incitement of plants production. Finally this terminology stands for terminating plant disease without chemical which harmful to both humans and plants finally cultivating healthy agriculture.

# Mr SARAVANAN M

Image	Delegate ID	Theme	Details
	YSC 10208	Make in India	<p><b>Category :</b> Energy Engineering  <b>Organisation :</b> SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY  <b>Designation :</b> ASSISTANT PROFESSOR</p>

Notable amount of progress in maternal, new-born, infant and child mortality index compared to other fast developing states in India. The rural mother registers the details like Name, Pregnancy status, Mobile number, age etc., to the nearest health centre. The registrar feeds the information given by the mother into the system through the user interface.

The IVR system reads the information, stores it in its backend database and posts an "Outbound Call", based on the mother's regional language, to the mother's mobile number that is registered. The system also gives information about the location of the nearest hospital and the specialized doctors. In order to maintain the data of a vast number of rural women, cloud data store is maintained. Role of the rural mother: Register the following details to the nearest health centre, sub-health centre or hospital nearest to their locality. Name of the mother Pregnancy status (No of months)• Phone No No of kids present Age Address/Location Role of The Registrar: Feed the information given by the mother into the system provided. The provided system will be a simple user interface which will be like filling a simple online form that have the fields of above information Role of the IVR : The IVR system performs the following operations once the information are entered into it. (1) The system reads all the information that is fed as input.(2) It stores the detailed information in its backend database (3) The IVR system posts an "Outbound Call" to the mothers' mobile number that is registered. It delivers the instruction to be followed to the mother in her own mother tongue (as a voice mail).(4) The service is further extended such that the system also tells nearest hospital or the doctors who is specialized in taking these tests nearer to the mother's locality.

# Mr Debarshi Datta

Image	Delegate ID	Theme	Details
	YSC 10400	Make in India	<p><b>Category :</b> Others  <b>Organisation :</b> Brainware Group of Institutions  <b>Designation :</b> Assistant Professor</p>

This project presents a novel approach of reconfigurable digital down converter (DDC) for wideband applications like software defined radio. DDC is a technique that can transform high sample rate modulated signal to low sample rate signal. Conventionally, implementation of numerically controlled oscillator (NCO) in DDC structure provides high chip area, low operating speed and high power consumption. The proposed DDC consists of CORDIC (COordinate Rotation Digital Computer) rotator and multirate decimation filter to overcome these problems. Since CORDIC architecture in DDC model is to increase spurious-free dynamic range (SFDR) and provides high accuracy as compare with NCO based DDC structure. The multirate decimation filters are being cascaded integrated comb (CIC) followed by compensated finite impulse response (CFIR) followed by multi-channel systolic FIR (MSFIR) filter, and at last Lagrange polynomial based Farrow design provides for fractional output. These combinations make a DDC architecture which produces a desired output. Due to variable of CIC decimation factors, this flexible DDC design can perform down converted complex output signal from 3.6 GHz to output range of 1 KHz to 131.07 MHz. The proposed DDC design has been implemented on Kintex-7 Xilinx Field Programmable Gate Array (FPGA) target device on XC7K70T-FBG676. Since, FPGAs offer higher flexibility, moderate cost and short time to market, make a suitable platform for hardware engineers. Experimental comparisons with earlier DDC designs indicate that the proposed design can achieve efficient performance in terms of area, power and speed with same functionality.

# Dr Anirban Pradhan

Image	Delegate ID	Theme	Details
	YSC 10429	Make in India	<p><b>Category :</b> Chemistry</p> <p><b>Organisation :</b> Indian Association for the Cultivation of Science (IACS), KOLKATA</p> <p><b>Designation :</b> DST INSPIRE FACULTY</p>

Since last two decades, we are in constant threat from global warming and natural resources scarcity. The situation forced us to move from non-renewable to green renewable energy. Cost-effective renewable energy production and storage technologies have recently received a great deal of attraction of several industries for day to day applications. Plentiful, economically viable, reproducible and easily processed materials are now commercially important for energy production and storage industry. Technological implementation of optoelectronics field is based on decentralizable technologies like OLED, storage devices (battery), capacitors, etc. These technologies are advantageous for countries like India, where infrastructure is in demand for technology transfer and implementation process.

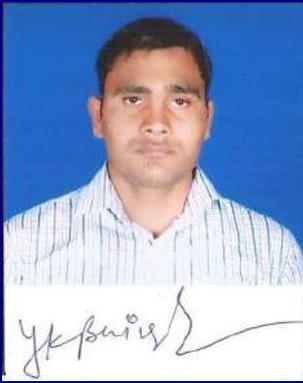
Herein, we devoted to develop a new generation of organic materials like PAH,[1] hetero doped graphene material through bottom-up approach for green renewable and sustainable energy production through water splitting (HER, OER),[2,3] perovskite solar cells (OPV), rechargeable sodium batteries, [4]super capacitor, etc.

This work has a direct impact in our modern society where extreme demand for green and sustainable energy was the biggest concern. In this regard, it is conspicuous to say that the outcome of this research work slowly but surely will be an integral part of our “Make in India” project.

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# Mr yogesh kumar

Image	Delegate ID	Theme	Details
	YSC 10474	Make in India	<p><b>Category :</b> Physics  <b>Organisation :</b> G.D. Goenka University Gurugram  <b>Designation :</b> Research scholar</p>

**Abstract:** The conducting polymer poly (3-methylthiophene) active electrode-based pseudocapacitors with ion-conducting polymer-based electrolytes (phosphoric acid and ammonium salt incorporated), and lithium-based organic liquid electrolyte were designed. Their performance studies were carried out using cyclic voltammetric measurements. The polymer gel electrolytes comprised of poly-vinylidene fluoride-co-hexafluoropropene (PVdF-HFP)-ammonium thiocyanate (NH<sub>4</sub> SCN), aqueous gel electrolyte comprised of polyvinyl alcohol(PVA)-phosphoric acid (H<sub>3</sub>PO<sub>4</sub>) and organic liquid electrolyte of lithium salt comprised of 1molar lithium perchlorate (1.0M LiClO<sub>4</sub>) in the organic solvent propylene carbonate (PC), which is generally used as plasticizer in polymer-based electrolytes. The impedance analysis of the redox pseudo capacitor cells based on conducting polymer poly(3methylthiophene) active electrodes prepared by two different techniques-1) by constant current and 2) by constant voltage electrodeposition of electrode materials were presented. The role of ions and the acidic environment was important in the dramatic improvement of the supercapacitor cells' performance. The cyclic voltammetry studies revealed optimum capacitance values of 369 Fg<sup>-1</sup> for the PC-LiClO<sub>4</sub> electrolyte based cells with poly (3-methyl thiophene) deposited at constant current and at a scan rate of 5 mV/sec.

**References:**

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# Mr SAGNIK DUTTA GUPTA

Image	Delegate ID	Theme	Details
	YSC 10571	Make in India	<b>Category :</b> Electrical <b>Organisation :</b> MEGHNAD SAHA INSTITUTE OF TECHNOLOGY <b>Designation :</b> STUDENT B.TECH-ELECTRICAL ENGINEERING

The project is for solving the daily problems of the visually impaired, without involvement of walking stick. Many visually impaired people fall on roads or get hurt by an obstacle which an ordinary stick cannot detect. If the stick falls from the hand it is very difficult for the person to search for it and involves huge risk on the road so our product has no stick involved and it can detect with the two leg bands obstacles and open manholes or steps for the user to walk safely on road by giving alert. Often, the visually impaired lose their way as many live alone so to do their tasks they go outside alone and are lost. My product THE THIRD EYE which can detect obstacles and give sound and vibrational alert when obstacles are detected, has navigation feature to guide the user when needed and SOS emergency feature. The product has 2 bands worn on both the legs. There will be a vibrational motor fitted in the bands to give vibrational alert in the bands when the sensor has detected obstacle. The MCU via Bluetooth will be connected to THE THIRD EYE app installed on the phone of the user which will send signal to give sound alert via the app to the user. The MCU will also work with the obstacle detecting proximity sensor. The app installed in the phone of the user will also have navigation and SOS feature. When in danger the user just needs to give danger voice command by saying "Help", the app will send an SOS message to 10 assigned caregivers with the location and with a help message. The device is being used by few with high positive feedback.

# *Dr MOHENDRA ROY*

Image	Delegate ID	Theme	Details
	YSC 10587	Make in India	<p><b>Category :</b> Applied Engineering</p> <p><b>Organisation :</b> PDPU</p> <p><b>Designation :</b> Assistant Professor</p>

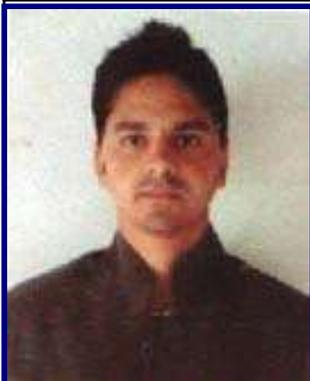
A portable telemedicine device is being developed based on digital inline holography (DIH) system. The DIH is a proven technique for lens-free imaging of cells and microparticles. In this method, the diffraction patterns of the cells and microparticles are generated as a result of the interference of the coherent/semi-coherent light upon passing through it. Since these interferences are governed by the physical and optical properties of the cells/microparticles, therefore the diffraction patterns actually carry their signatures. Thus the properties of the cells and microparticles are can be analyzed by characterizing the captured diffraction patterns. In this work, we have custom developed a lens-free microscope that comprises of a CMOS image sensor(to capture the diffraction patterns) and a LED light source ( $\lambda = 470\text{nm}$ ), in a compact housing of  $12\text{ cm} \times 9.0\text{ cm} \times 9.0\text{ cm}$ . The custom-developed algorithm can automatically process and characterize the various cell lines from a heterogeneous sample. The system can detect and classify the human blood cells with  $> 95\%$  accuracy. The performance of this system is tested against the standard hematology analyzer (LH 750, Beckman Coulter). The results show a correlation of 0.878 for red blood cell and 0.927 for white blood cell. The low cost (approximately INR 10,000) and compact design make this system ideal for a point of care system. Since the system does not require any labeling reagent and characterization can be performed automatically, therefore it is free from any subjective error and easy to operate. The device possesses most of the necessary attributes for a telemedicine device, which can be utilized as a point of care system, particularly for detecting blood-related disorders, such as anemia, hypersplenism, myelokathexis, etc. The device is operated by an android system and results can be sent wirelessly to an expert for further analysis.

# Ms Abruti Panda

Image	Delegate ID	Theme	Details
	YSC 10622	Make in India	<b>Category :</b> Electrical <b>Organisation :</b> IIT Kharagpur <b>Designation :</b> Student

Development of text readers for the blind has become common these days due to advancement in image processing and optical character recognition techniques. However, the major limitation of such devices which typically involve a camera is that they do not give the natural feeling of reading a book word by word, at one's own pace, and the flexibility to read the same line or word any number of times, or randomly jump to any line as per one's own wish. To overcome this problem, handheld portable scanners have evolved, but they are too expensive for the ordinary. Hence, we have developed a portable handheld scanner based on linear sensor array using simple infrared transmitter and receiver pairs (instead of a camera) which not only reduces the cost significantly but also reduces the computational requirement of the processor involved in the system. This also enables the user to control the reading rate as per his/her own will. Also, Artificial Neural Network (ANN) has been employed for character recognition, which makes the system capable of handling different fonts, languages and font sizes. The system developed was trained on custom dataset developed specifically for this application using our own customized hardware and gives an accuracy of 99.9% during the simulation and 99.7% during real-time testing. In comparison to the products available in the market, the cost of implementation of this system was found to be much lower. Thus, it has been possible to implement such a flexible and user-friendly system at a comparatively lesser cost.

# Mr Suhaib Mohd Malik

Image	Delegate ID	Theme	Details
	YSC 10768	Make in India	<p><b>Category :</b> Biology  <b>Organisation :</b> Govt. Science and Commerce College Benazeer Bhopal-462008  <b>Designation :</b> Research Scholar</p>

Abstract- Xylanases are glycosidases that catalyse the endohydrolysis of 1,4- $\beta$ -D-xylosidic linkages in xylan, the main constituent of hemicelluloses found in plant cell wall. Xylanases encompass great industrial potential and their cold-active counterparts have even more than that. Accordingly, three cold-active fungi, *Penicillium canescens* (BPF4), *Truncatella angustata* (BPF5) and *Pseudogymnoascus roseus* (BPF6) available as laboratory stocks have been screened for their ability to produce extracellular xylanases at cold temperature. The selection of hyper producing strains of xylanase was carried out on Potato Dextrose Agar (PDA) medium fortified with 1% (w/v) of xylan incubated at 20°C for seven days. Selection for best producer of xylanase was done on the basis of breadth of clear zones observed after flooding the plates with Gram's iodine indicating the hydrolysis of xylan by xylanase around the colonies. The fungus *T. angustata* was found to produce the highest amount of xylanase followed by *Pseu. roseus* and *P. canescens* in that order. The cold-active xylanase-secreting ability of the fungal species was verified by incubating them in xylanase producing medium at 20°C. Consequently, *T. angustata*, *Pseu. roseus* and *P. canescens* were found to produce xylanase activity equal to 11.0 IU/ml, 7.0 IU/ml and 5.9 IU/ml respectively. Under submerged fermentation xylanase was maximally produced at 20°C and pH 4, 5 and 9. This is the first report of the fungus *T. angustata* having cold-active xylanase producing ability.

# Dr SAUGATA KONAR

Image	Delegate ID	Theme	Details
	YSC 10792	Make in India	<p><b>Category :</b> Chemistry  <b>Organisation :</b> Department of Chemistry, The Bhawanipur Education Society College  <b>Designation :</b> Assistant Professor</p>

Two zinc(II) based metal complexes,  $[Zn-(Pymox)Cl_2]$  (1) and  $[Zn_6(Pymox)_6(\eta^2-O)_3]$  (2), where Pymox = 3-[(4,6-dimethyl pyrimidine-2-yl)-hydrazono]-butan-2-one oxime, have been synthesized and characterized by elemental analysis, IR, and single crystal X-ray diffraction studies. Single crystal X-ray analysis confirms that one of the synthesized products (1) is a mononuclear complex and another (2) is a hexanuclear Zn complex. The optical band gap energy in both the complexes (3.43 eV in 1 and 2.36 eV in 2) from solid state UV measurement explores semiconductor behavior of the synthesized materials. Schottky barrier diode (SBD) electronic devices were fabricated by using these two complexes with aluminum (Al) and indium tin oxide (ITO) in sandwich configuration-ITO/1 or 2/Al. Both the devices exhibit sound rectification behavior with better photosensing property for complex 2 based SBD under irradiation of light, in comparison to dark conditions. The electric current measurement for complex 2 based SBD also exhibits enhanced photoconduction properties under irradiation of light when current is measured several times under a constant bias voltage by putting light on and off with successive repetitions.

# Mr Atul SC

Image	Delegate ID	Theme	Details
	YSC 10803	Make in India	<p><b>Category :</b> Mechanical Engineering</p> <p><b>Organisation :</b> Sri Venkateswara College of Engineering</p> <p><b>Designation :</b> Research Scholar</p>

## Study of Bactericidal functional surface on stainless Steel produced by Chemico-Thermal Texturing

Stainless steel grade AISI 316L is one of the most commonly used materials in biological and medical applications. SS316L has been used to manufacture medical implants ranging from hip replacements to fracture plates. Any medical device implanted into human body is prone to infection caused by bacteria present on the surface of medical device. In this research, work has been carried out to impart the much needed resistance to bacterial adhesion and bactericidal properties to prevent infections induced deaths post implant surgeries. This work displays the enhanced bacterial adhesion resistance of SS316L surface produced by the boron based chemico-thermal treatment. E-Coli a gram negative bacteria was used as in the in-vitro testing of the material's bacteria adhesion properties. The chemico-thermally treated SS316L showed much greater resistance to bacterial adhesion when compared to untreated material. These bacteria resistant properties are attributed to the surface modification by conducting a chemico-thermal treatment. The superficial layer produced in the material's surface also showed increased the corrosion resistance in cyclic voltammetry tests. In addition to the increase in corrosion and bacterial adhesion resistance, the specimens also displayed a multifold increase in surface hardness. Micro Vickers test indicated a surface hardness of 1550 HV0.1 and a corresponding increase in wear resistance was observed when tested against untreated SS316L disc based on ASTM G65.

# Mr Prashant B. Dehankar

Image	Delegate ID	Theme	Details
	YSC 10850	Make in India	<b>Category :</b> Chemical Engineering <b>Organisation :</b> TKIET, Warananagar <b>Designation :</b> Assistant Professor

Energy is the capability to do work has different form as hydropower, biomass, solar energy, wind, geothermal, and ocean energy renewable energies. The demand for petroleum-based fuel goes on increasing a lot of important than ever attributable to the rising of technology. However, since the staple of fuel, crude oil may be a non-renewable resource; this increasing demand would cause the depletion of petroleum reserves. Biofuel is made directly or indirectly from organic material and animal waste. Biofuel, the fuel that's with chemicals ready from oil, provides associate degree environmentally friendly substitute for diesel oil. Today, Biofuels are going to significant role in meeting India's energy wants. India isn't solely an outsized businessperson of oil/crude oil with the prospect of hyperbolic imports within the future, however additionally has important potential for the assembly of biofuels within the country. Within the present study, chemical process cracking of vegetable oil with the help of clay catalyst yielded higher BIOFUELS to it obtained from thermal cracking of oil at an extreme temperature. At the analyzed, vegetable oil has saturated fatty acid as a practical cluster hexadecane gift that is appropriate for cracking. After cracking observed that the product had highly present of gasoline and kerosene compounds. The results from experimentation as a 7 ml product from 50 ml of palm oil with a 24% yield under the process temperature of 300 oC. So, conclude that by a study of palmitic acid as saturated fatty acid chemical process catalytic cracking hydrocarbons as Biofuel.

# Dr Ashim Mitra

Image	Delegate ID	Theme	Details
	YSC 11004	Make in India	<p><b>Category :</b> Others  <b>Organisation :</b> India            Meteorological Department,            Ministry of Earth Sciences  <b>Designation :</b> Scientist-E</p>

The forecasting of lightning flashes is of great importance. Due to lightning, lots of deaths and injuries happen in India every year, especially in the warm seasons from May to September. It also causes significant damage to property and the economy. Therefore, lightning investigations, including detection, cluster identification, tracking, and nowcasting are essential. The ideal tools for detecting thunderstorms are weather radar and lightning detectors. The main objective of this paper introduces a framework which includes identification, tracking, nowcasting, and in particular visualization of lightning data. The India Meteorological Department (IMD) in New Delhi developed a new method for real-time now-casting to the lightning intensity over the Indian region.

This method for identifying the lightning intensity, we used Lightning Location Networks (LLN), an auxiliary data set overlaid with weather radars reflectivity (dBZ) and INSAT-3D infrared satellite imagery retrieved from IMD. The weather radar data, LLN data, and INSAT-3D cloud top temperature (CTT) data during the summer of 2019 were examined for the selected locations. This study examined seven different locations of thunderstorm cases using three different characteristics of radar reflectivity thresholds (dBZ) and INSAT-3D CTT (0C) data in the Indian subcontinent.

Preliminary results showed that lightning prediction algorithm was associated with either the 40 (dBZ) at -10 0C or 40 (dBZ) at -20 0C criteria similar to that used in previous studies of thunderstorms in other regions. The statistical the analysis was then done by calculating the hit, miss and false-alarm rates, POD, FAR and CSI scores in order to determine the success of the now-casting. However, the results show that the algorithm is well captured & now-casting the location of the lightning clusters, especially when applied to strong and consistent lightning events. This method has been implemented for real-time now-casting of lightning intensity and appears on IMD website ([www.imd.gov.in/section/satmet/lightning/](http://www.imd.gov.in/section/satmet/lightning/)).

# Mr Umang Gupta

Image	Delegate ID	Theme	Details
	YSC 11013	Make in India	<p><b>Category :</b> Others  <b>Organisation :</b> CSIR-NISTADS  <b>Designation :</b> CSIR - SRF</p>

Entrepreneurship has become the driving force of economic and social development throughout the world. In recent decades, research has produced new insights that have changed the prevalent view about the role of entrepreneurship in innovation and technological change. This has resulted in paradigm shift in the policy debate and implementation strategies of various countries, creating new institutional mechanisms for developing knowledge based products (including science parks, accelerators; financial institutions, IPR Regime, incubators, etc.) which enable the growth of startups and entrepreneurship. The ecosystem in its entirety is experiencing a shift. Therefore it is imperative to look at the context of how institutions can align themselves with the system and create enabling environment for innovation and entrepreneurship which requires a robust framework to study.

“Entrepreneurial Ecosystems (EE)” is a link between ‘innovation systems approach’ and ‘entrepreneurship studies’. Therefore various models have been proposed to study the EE across the world. Isenberg (2010) also discusses the concept of the EE and formulates six distinct domains of the ecosystem: policy, finance, culture, support, human capital and markets. These largely overlap with the eight pillars established by World Economic Forum (2013) for a successful ecosystem. These models are being followed to study the ecosystems around the world. A problem was faced while conducting interviews to study EE in India where many enabling institutions are unaware of existing policies related to startups. The present study proposes a new framework with an exhaustive literature review followed by case study approach to study entrepreneurial ecosystems. We find that “policy” should not be considered as a separate pillar as it appears to be discrete factor in the present models. “Policy” is an integral element of the system affecting all other factors to study the system and should not be perceived or studied separately.

# Dr Alexandar A

Image	Delegate ID	Theme	Details
	YSC 11083	Make in India	<b>Category :</b> Physics <b>Organisation :</b> St. Joseph's College, Tiruchy <b>Designation :</b> Assistant Professor of Physics

Generation of electrical energy using solar panels from artificial light

Alexandar. A

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Abstract:

The Earth receives solar energy in the form of light and heat that is tremendously huge. But in today's world, most people live in apartments and hence they are unable to harvest solar energy due to lack of place for sunlight. In other places also due to weather change and in the night time we are unable to get solar energy and therefore unable to produce electricity'. This abstract is on how electrical energy is harvested without sunlight in the indoors. Here a new bulb is designed with inbuilt solar panels and a small battery. Solar panels produce electricity with any light source, not only sunlight. With artificial indoor lighting like Artificial lighting uses electricity to produce light, and solar panels convert light back to electricity. You end up with the same form of energy you started with, and The two energy conversion steps such as electricity to light, light back to electricity are used as per the law of conservation of light. The panels can also be fitted along with the Gas Burner. There also we get a lot of light and heat energy which will be used to get electrical energy. The experiment have been done and its is working well. The new technology will be soon implemented throughout the country and save electricity.

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