METRICS

A combined initiative by the staff and students of
The Mechanical Engineering Department

VISION

To develop human resource to meet regional and global requirement in the field of Mechanical Engineering.

MISSION

To Excel in academic and Research related to mechanical Engineering with special emphasis on energy, environment and front end technologies.

BRIEFLY

- Our third year students Mr Joseph Varkey and Mr Ashish Joy, achieved First Position in the event QRIOSITY of PINNACLE conducted as a part of KTU Tech-fest 2019 held at Government Engineering College Thrissur.
- On 25th January 2019 Agile Business Consultancy Conducted campus placement for Final semester students and Gokul Anilkumar got selected
- An online interaction session with faculties of Robotic firm SAK robotics in tie up with IIT Bhuvaneshwar is arranged for the second and third year students of our department on 22/2/2019
- Betson Philipose Thomas, Anu Nair P, Aby Alias, Manikandan S, Abhijith A "Experimental Analysis on the Effect of CU-ZSM5 on the control of SI engine Exhaust Emission" is accepted for the international conference on Material and Manufacturing Methods conducted by the Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirapalli, India, on July 5th, 2019
- Project Presentation as a part of curriculum for S8 Mechanical students started on 25/02/2019

ABOUT MECHANICAL ENGINEERING DEPARTMENT

Mechanical Engineers shape our physical environment from the cities we live in, the machines we use, the way we travel, the energy that powers these, to delivering the water we need. As an integral part of MBCCET, this discipline has attracted exceptional individuals and addressed the critical technological challenges of the day. Our particular interests evolve with time, but our core mission of training to the leaders of tomorrow and conducting fundamental research to address major technological roadblocks remain constant.

The Department of Mechanical Engineering at MBCCET campus was started in 2001. Over 200 students are currently enrolled in this undergraduate program. The competent and committed faculty in the department have extensive academic, research and industrial experience.

The department also has a team of dedicated and highly experienced supporting staff to help the students in laboratories. Research areas include 3D Printing and Composite Material. In addition, research is conducted on various fields of Thermal such as Gas Turbine Analysis, CFD and Non-Conventional Energy Sources. Students of the department are encouraged to read and publish papers in journals even at the undergraduate level. They are encouraged to work on projects, either individually or on teams.

The department is proud to have some of the most sophisticated lab equipment available today in its state of the art laboratories. A dedicated team of lab staff is available to guide the students in the laboratory course work. In addition to the campus library, the department has an extensive departmental library with books and subscriptions to current journals.

From the Principal

Newsletters are an essential tool for bridging the gap between the college and its stakeholders. I am so happy to see that staff and students of mechanical engineering department succeeded in publishing the new edition of department newsletter with nearly formatted, concise, easy to read articles

Dr.Pradeep C

From the HOD

I have great pleasure and pride to announce that the department of Mechanical Engineering, MBCCET is publishing our first newsletter. This newsletter will help to share the news, events and achievements of the department among the MBCCET fraternity. I would like to congratulate all the members of the editorial board for their sincere effort to realize this new venture. I earnestly wish and sincerely hope that this this new publication turns out to be a resounding success.

Dr. Roja Abraham Raju

- Shibin Shaji,Anu Nair P , Febin Felix, Biju Chacko, Anandhu Vijayakumar" Experimental Studies on the Effect of Mixed Metal oxide DeNox Catalyst on the Control of CI Engine Exhaust Emission" is accepted for the international conference on Material and Manufacturing Methods conducted by the Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirapalli ,India, July 05,2019
- Abdul Rahman, K. & Ramesh, A. (2017) Effect of reducing the methane concentration on the combustion and performance of a biogas diesel predominantly premixed charge compression ignition engine. Journal Fuel, Fuel 206 (2017) 117–132.
- Ajith Ramesh, Rojin Mathew, Anoop Pillai" Finite Element of modelling of Forming process of a thin circular disc used in Cyclic Loading and Unloading Application is accepted for the Second International conference of Material, Manufacturing and Modelling conducted by Vellore institute of Technology Vellore, March 28,2019.
- Milan K John is Pursuing his PhD (Full Time) in the field of Energy Management in National Institute of Technology, Calicut

MECHANICAL ENGINEERING AND SUSTAINABILITY

Amal Kuriakose (S4 Mechanical)

Mechanical engineering will evolve and collaborate as a global profession over the next 30 years through a shared vision to develop engineering solutions that foster a cleaner, healthier, sager and sustainable world. Mechanical engineers are critical to technologies that serve people. They are widely represented in both the traditional and alternative energy industries. They have the knowledge and skill needed to design new energy sources, make existing energy sources cleaner and improve the efficiency of current and emerging technologies.

Mechanical engineer can be at the forefront of developing new technologies to environmental remediation, farming and food production, housing, transportation, safety, security, healthcare and water resources. As they create these engineering solutions, mechanical engineers will need to be mindful of the experience of the previous generations.

It will require new cleaner technologies and new social systems to share the burden of developing sustainably. As a Mechanical Engineering student we should all know that "an engineer create that which never was".

Closed-loop Flow Control for Micro Air Vehicles

Integrated closed-loop flow and flight control for stabilization and regulation of separated flows occurring on unmanned and micro air vehicle (UAV/MAV) wings. Inspired by the remarkable performance of birds and insects, increased lift associated with the controlled flows will lead to dramatic improvements in maneuverability, gust resistance, and a wider flight envelope. The main objective is that, energy can be effectively extracted from wind gradients, in order to minimize power requirements and thereby reduce the weight of MAV. Approach utilizes model-based, real-time control of unsteady mass injection along the wing's leading edge in order to dynamically alter the aerodynamic forces and moments, potentially eliminating traditional control surfaces whose inertia and structural limitations preclude real-time disturbance rejection algorithms. The methodology, so far demonstrated on model wings in laboratory and simulation environments, also delivers high-lift flow states that would be otherwise unstable without sensing and actuation. Specific laboratory demonstrations include the ability to dynamically cancel lift fluctuations associated with gusting flows on a time scale approaching the fast, intrinsic fluid-dynamic time scales associated with small-scale wings. A significant aspect of the work is the development of general model reduction theory and algorithms suitable for robust flow control that can be applied to a wide variety of flow control problem

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"Never stop fighting until you arrive at your destined place - that is, the unique you. Have an aim in life, continuously acquire knowledge, work hard and have perseverance to receive the great life"

- Dr A P J Abdul Kalam

MY LORD AND MY GOD

MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING AND TECHNOLOGY

PEERMADE

MBC

METRICS

NEWSLETTER OF MECHANICAL DEPARTMENT

DEUS BIKE BUILD OFF PG.9

NCAME-19 PG.6

SMART INDIA HACKATHON 2019 PG.7

SIH

SMART INDIA HACKATHON 2019

NCAME GALLERY

PRINCIPALS MESSAGE

Newsletters are an essential tool for bridging the gap between the college and its stakeholders. I am so happy to see that staff and students of mechanical engineering department succeeded in publishing the new edition of department newsletter with nearly formatted, concise, easy to read articles.

Dr. Pradeep C

HODS MESSAGE

Dear readers,
On behalf of the staff and students of the Mechanical Engineering Department, it gives me immense pleasure to present the latest volume of the News letter of our department. This News letter gives an insight about various activities by the students and faculty in academic, co-curricular, extra-curricular, and R&D in the previous semesters. We are very much grateful to the Management and Principal for their continuous encouragement, inspiration, and support provided for the successful release of this newsletter. I congratulate all the members of the editorial board for their sincere effort to release this newsletter.

Dr. Roja Abraham Raju, CEng.

STAFF EDITOR

It gives us great pleasure to bring you the second issue of Metrics, the college magazine of Mechanical Deparment at MBC Peermade. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This magazine is a platform to exhibit the literary skills and innovative ideas of teachers and students. Metrics presents the achievements of students and contributions of teachers. We would like to place on record our gratitude and heartfelt thanks to all those who have contributed to make this effort a success. We profusely thank the management for giving support and encouragement and a free hand in this endeavor. Last but not the least we are thankful to all the authors who have sent their articles.We truly hope that the pages that follow will make an interesting read.

Prof. Anu Nair

STUDENT EDITOR

A thought that has been enduring in mind when it becomes real; is truly an interesting and exciting experience. This news letter was one such cherished work that had its roots in the persuasion. It would be a snapshot of the various activities and advancements for all associated with Mechanical Department in MBC,Peermade. Proper communication plays a vital role in institution's development. This news letter will serve to reinforce and allow increased awareness, improved interaction and integration among all of us. Usually we fail to appreciate the good deeds of many people and activities that happen around us as we are engaged in irrelevant talks and assumptions. It could all change if we just pause to think of what is our contribution to the society from which we have been gifted with this blessed life. The progress of the society is mainly depends on many people who are working behind the scenes, overtime round the clock planning things to the smallest. This news letter will be a medium to provide proper acknowledgement and respect all of these efforts and its results. It is expected that wide support for this mission will be provided through the reader's valuable suggestions and comments. This is only a small step towards a long journey. To achieve progress and to meet objectives we have to cross numerous milestones. This maiden issue of newsletter should inspire all of us for a new beginning enlighten with hope, confidence and faith in each other in the road ahead..... Happy Reading !

Richu Harees

PLACEMENT

STUDENT TESTIMONIALS

Gokul Anil Kumar
Mechanical Engineering

Placed in:Agile Business Consultancy

"MBCCET proved to be a pool of opportunities for me. It not just provide us with various platforms to showcase our abilities and skill but also helps us to learn all soft skills that are highly required. We get training on interview skills, communication skills, life skills, effective time management many more. I wholeheartedly

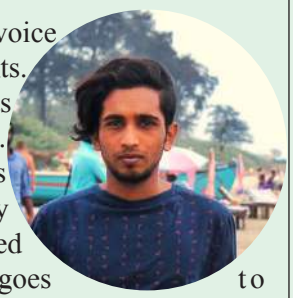
Jerry Jacob Varghese
Mechanical Engineering

Placed in:Armstech

"I am very Thankful to the faculties of Mechanical Departments as they are very much supportive, helpful and the Placement Cell which is also doing great job by arranging excellent placements of MNCs & good corporate exposure is given to students."

Midhun Sudhir S P
Mechanical Engineering

Placed in:Sutherland



"MBCCET is a place where your voice is heard and your opinion counts. My knowledge and confidence has been boosted after coming here. As a result, now my confidence is such, that I can get placed in any company. Today I have been placed in Sutherland and the credit goes to focused training given by faculties & T&P officers".

Rubin Mathew Renji
Mechanical Engineering

Placed in:Sutherland

"I got placed in Sutherland . it is because of the efforts put by our faculties and Training and Placement cell, which always make sure that students get placed in the best company in the market. MBCCET provides a great exposure to students by organizing different activities which are very much helpful for every student for deciding their future field."

CORPORATE TESTIMONIAL

SUTHERLAND

We have been hiring students from your institute as well as giving them Summer Internships in our organization. The quality of the students from MBCCET is outstanding and the one's we have employed from campus recruitment are truly an asset to our organization. We also find the course curriculum is well equipped to qualify them for our industry. We found a heterogeneous mix of students with varied backgrounds. Their approach, outlook and enthusiasm was something we admire. The students have perspective and were high in their ability to articulate their views and present it with confidence. I believe they will have a great future.

Armstech campus atmosphere is supportive for the academic development.. The dedicated faculty members can be helpful for the comprehensive development of the students.The students are determined and dedicative in their attitude, willing to learn and highly ambitious to make use of the opportunity. They love the discovery part of learning. They can then take information that is being taught and apply it in ways that are meaningful to them. A love of learning is extremely valuable as a student and I believe willingness comes first. This quality is visible in the students of MBCCET

AGILE BUSINESS CONSULTANCY

It satisfies us the most when it comes to interact with MBCCET. Training and placement department is very proactive and supportive to Industry's objectives and requirements. We have always found good talents from MBCCET and it took no time to groom them further with requisite skill sets and perform better in real world.

We sincerely appreciate MBCCET to create an environment of good educational learning and discipline. We look forward to have a long term association with you.

DEPARTMENT TOPPERS TESTIMONIAL

BETSON PHILIPOSE

"Life at MBCCET has been a breathtaking and enriching experience. The environment not only helped me in imbibing knowledge but also in developing my overall personality, fueling confidence in me. Rajagiri has achieved excellence in imparting high quality education with a prime focus on holistic learning and inculcating competitive abilities in students which has helped me immensely.

The amazing and highly qualified faculty helped me in getting in-depth knowledge about all the subjects that are most needed to become a key player in the dynamic corporate scenario. Because of the blessings of my parents and the support of the faculty members at MBCCET ,I have got 8.67 CGPA for the First Chance".

Manu George

MBCCET happened to me “Purely” by choice and not “merely” by chance. To be associated with the premier educational institution offering excellence in engineering education & research is a dream come true for any one.The industry interactions & guest lectures by top notch industrialists, organized by MBCCET placement cell give students a glimpse of the challenges posed by global environment, evolving technologies and changing economic trends. Career counseling,soft skills training and assistance for internships constantly ensures students receive abundance of exposure and opportunities, thereby making them industry ready.

Tinu Tom George

“ I feel really lucky to be a MBCCETian, as I got ample opportunities to bloom my inner self and to emerge out as a better person.Being a part of MBCCET family has definitely given me an upper hand in various life situations , thanks to the wonderful exposure and the apt and timely guidance of the highly qualified faculty. I'm greatly obliged for the wonderfulopportunity that I have received from here. Truly proud to be a MBCCETian and I would definitely try my level best to keep up the name of this esteemed institution.”

OUTGOING BATCH [2015-2019]

A farewell party was conducted for the outgoing students by the department. It was a heart¬felt moment of parting which was accenftiated by a variety of cultural programmes.

NCAME'19

The First National Conference on Advances in Mechanical Engineering (NCAME 2019) was successfully hosted by the Department of Mechanical Engineering of MBCCET on 10th of May 2019 in our college. The aim of the Conference was to provide a platform for Researchers, Engineers, Academicians and Industry Professionals to explore the research ideas and innovations to the society and also to identify future research needs in various areas of Mechanical Engineering. The Conference focused on the new trends and innovations in Mechanical Engineering.

The inauguration ceremony started by 9.00 AM in the morning. The function was presided over by the principal of the college Dr.Pradeep C.Dr.Biju Augustine P, Professor,Rajiv Gandhi Institute of Technology,Kottaym,our chief guest inaugurated the function. The keynote address was given by Dr.Rajkumar M.R,Associate Professor ,College of Engineering ,Trivandrum.The conference was conducted on 3 venues. Each venue had a panel of 2 judges and best paper awards were given in each venue. The event concluded with the vote of thanks by the coordinator by 4.00 PM

All the accepted articles were published in Conference proceedings. Selected papers based on the quality were published in UGC indexed journals. We received about 70 technical papers from all over India, out of which 50 papers were selected by a group of technical reviewers for presentation in the conference. In that 42 registered to take part in the conference. After the second review by the technical committee of various journals, the 26 papers which met their standards were published in the UGC Approved Journal-International Journal of Applied Engineering Research

Research and Publications

- Aaron Varghese Koshy, AnandhuVijayakumar, Johnson mathew, JobyNebu John,Arun Thomas George "Limestone Powered Terrain Vehicle" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 110-113
- Abin Johns Thomas, Mebin C Mathew, Thomas John, Allen Easo Mathew,AnuNair.P "Design and Fabrication of Multipurpose Farming Machine" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 67-70.
- Tinu Tom George, AmalSabu, Elias V.P,Stephen George "Design and Fabrication of Vacuum Assisted Cloth Drier" International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 71-76.
- Rubin Mathew Ranji, Gracious Thomas Chacko, Gokul Sunil, Jeffin M Johnson, Febin Felix "Design and Fabrication of Tree Pruning Machine" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 106-109.
- BijoVarghese,MidhunSudhir SP, Rahul Raj, Rohan Thomas Abraham,Roja Abraham Raju "Performance Evaluation of Mwcnt Using Deform 3D", International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 118-124.
- AbinAji John, Edwin Jacob Manoj, Manu George, Thomas Thampi, Rojin Mathews "Revamping of Washing Machine to Wash and Dry Capsicum Genus Chilli Pepper or Red Chillies" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 93-99.

- BetsonPhilipose Thomas, FleminJoychan,Jeffy Joe Abraham, ShibinShaji, Aby Alias "Design And Fabrication of a Vehicle for Paraplegic Person" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 100-105.
- Jerry Jacob Varghese, Manu Raj, NizamNazeer, Sarath K V, Abdul Rahman K "Experimental Study of Urine Powered Internal Combustion Engine", International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 88-92.
- Ajil Alias, Dhanesh M Nair, NazimHussian, Nibin Benny,Biju Chacko "Design And Fabrication of Sliding Wheelchair" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 114-117.
- Steevo Tom Jacob, Ashish P Kunjumon, Felix Mathew Koshy, Sunildutt "Determination of Pressure Coefficient Around Naca Airfoil" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 81-87.
- Abijith A, GokulAnilkumar, Jibin Raju,Mobin Thomas,Ashif S "Design and Fabrication of Biodiesel Production Plant" ,International Journal of Applied Engineering Research ,Vo1.4(2019), pp. 77-80.

SMART INDIA HACKATHON 2019 3RD EDITION ORGANIZED BY GOVT OF INDIA

Team Mechanizer selected for the First round of Smart India Hackathon 2019 (3rd Edition), Organized by Govt. Of India. The team members are Rahul Raj,Midhun Sudhir S P,Bijo Varughese,Rohan Thomas Abraham,Edwin Jacob Manoj and Deriln, Smart India Hackathon (SIH) 2019 - a unique Open Innovation Model for identifying new and disruptive technology innovations to solve the challenges faced in our country. It's a non-stop product development competition, where problem statements are posed to technology students for innovative solutions. It can help to: 1.Harness creativity & expertise of students 2.Spark institute-level hackathons 3.Build funnel for 'Startup India' campaign Crowdsource solutions for improving governance and quality of life 4.Provide an opportunity for citizens to provide innovative solutions to India's daunting problems. Problem Statement was to develop a low cost landslide perdition system which can fly.

The system is a Micro Air Vehicle (MAV) which is equipped with a high resolution camera in it. The system fly and records its path as video. From this videos selected location photos are retrieved and converted into bitmap. The converted bitmap images are compared with previous images to verify any changes in image due to surface movement. This comparison with study of weather conditions will assists prediction of landslides. Smart India Hackathon (SIH) is a nationwide initiative aimed at proving platform for our technology students to offer innovative solutions for pressing problems, thus inculcating a culture of product innovation and a mind-set of problem solving. Response for SIH2019 has been phenomenal and more than 1.5 lakh participants from 2000 institutions have submitted their application.

STAFF ACHIEVEMENT

- Rojin Mathews "Design and Fabrication of Peltier Cooler for Heated Cabins of Vehicles "International Conference on Advancements in Mechanical Engineering (ICAME 2019) Jyothi Engineering College, Cheruthuruthi,Thrissur,Kerala,10-11th April 2019.
- Rojin Mathews "Contriving a Machinery to Wash and Dry some Specific Edibles" International Conference on Advancements in Mechanical Engineering (ICAME 2019) Jyothi Engineering College, Cheruthuruthi, Thrissur,Kerala 10-11th April 2019.
- Sunildutt " Aerodynamic characteristic of fluid flow around a symmetrical airfoil [NACA 0012]at various angle of attack" International Conference on Advancements in Mechanical Engineering (ICAME 2019) Jyothi Engineering College, Cheruthuruthi, Thrissur,-Kerala 10-11th April 2019.
- Rojin Mathew got selected for Phd Admission at NIT Calicut .
- The final year student project titled "Design And Fabrication of a Vehicle for Paraplegic Person" was selected in Grand Finale of Kerala Startup Mission Innovation Under the Guidance of Aby Elias.
- A startup company Remedi Innovation private limited owned by Asst. Prof Stephen George obtained a grant amount of Rs 64 Lakhs for the Development of Affordable, portable and reusable negative pressure wound therapy device from Biotechnology industrial research assistant council (BIRAC),Delhi. This start up also obtained a grant of Rs 12 lakhs from KSUM for the commercial production of low cost negative pressure wound therapy device.

Faculty Research

"Making affordable wound management a reality."

Stephen George

Certain types of injuries involving deep wounds could prove fatal for a patient if these are not managed properly. One of the best examples is diabetic foot wounds which if not provided timely medical care, can lead to severe complications. These forms of complex wounds require specialized treatment modalities and one such option is Negative Pressure Wound Therapy, The founders say they have always stressed on maintaining quality at every stage of the product development, and hence improvisations, design streamlining and optimal sourcing have been the mantra. The second major challenge has been about obtaining funding to set up the manufacturing unit.

RMmedi Innovations through its future projects aims to develop low-cost 3D printed prosthetics, affordable surgical robotic systems and creating skin substitute alternatives. It aims to provide affordable healthcare solutions that are specific to the Indian socio-economic and cultural realities while achieving and sustaining quality. Our best wishes to the founders and their belief in serving humanity. Also called NPWT to ensure timely healing or wound optimization so that other reconstructive procedures may be carried out. The procedure involves enveloping a non-healing wound so that to create a tightly enclosed environment. Followed by the application of negative pressure through foam or gauze.

Although a relatively new treatment modality, it has become quite popular among surgeons the world over, also a testimonial to its efficacy in wound management.In addition to this, a decrease in the number of dressings and relatively pain-free application and maintenance results in improved patient satisfaction. However, the current NPWT devices in the market are mostly expensive, making the technology inaccessible to the medical professionals in government hospitals as well as small scale private hospitals, especially in far off areas. Despite the advancements in medical care, it would be ironic if such a device is not universally available to all.

In such a backdrop, the Kottayam (Kerala) based medical technology startup, RMmedi Innovations is working on a new prototype of the NPWT device that would be much affordable and thereby more accessible. The founders of the startup, Dr Joseph Thomas, Stephen George, and Digo Sebastian are bound together by their passion to create an affordable solution targeted at helping poorest of the poor. Talking about the inspiration behind their idea, RMmedi Innovations says, "The government-funded healthcare system more often than not struggles to meet the basic healthcare needs of the people and hence specialized care by and large stood neglected. This is where we want to make a difference." The Overcoming challenge for the company has been to maintain quality while bringing down costs.

DEUS BIKE BUILD OFF

The Deus Bike Build Off is a definitive favorite in the custom-motorcycle community. The event calls all "wrench botherers, amateur tinkerers and fettling fetishists" to design and devise innovative bike builds in a wild competition. The theme is to have builders create the most with the least—favoring ingenuity, creativity, and resourcefulness over expensive parts. This philosophy usually makes for some really interesting and humorous creations. Deus' attitude towards the world of motorcycles is reflected absolutely in this celebration that sees the brand returned to its roots. For the first time ever, the competition will include a global online platform where builders all over the world can upload their builds.

ARUN THOMAS GEORGE is one of the only two Indian Contestants who got selected to the world wide bike build off competition for his custom made bike. The bikes from all over the world which is made from scrap are considered for the Competition.

ABOUT THE DESIGN

The Tracker bike used for this build was a Bajaj Pulsar 150 (150cc single cylinder four stroke engine). There is a few changes on the chassis to give it different look. First of all the swing-arm has been lengthened by adding a piece of another same swing-arm that bought from a junkyard. Thus the wheelbase has been increased. The seat tube and seat stay are fully customised and is made out from a steel rode which is bended and welded together.

The top tube in which the fuel tank and engine rests are stock parts. The fuel tank used is from a Kawasaki boxer and the head light is from a Yamaha RX100. The mono shock used at the rear side is from a Honda unicorn. The front shock absorbers are from the stock bike but the height of it is increased by replacing the top end bolt of shock absorbers by a customised end cap which is built from a lathe. The tyres used are from Ralco which are on/off road tyres.

"Lead Story is the highlight of the day and takes away maximum focus in terms of coverage and importance. It can be a news snippet or an analysis story to being a special article that grabs maximum eyeballs"

Recent Researches In Mechanical Engineering

New low-cost thermoelectric material works at room temperature

Material could be used to cool electronic devices, overheated vehicles
The widespread adoption of thermoelectric devices that can directly convert electricity into thermal energy for cooling and heating has been hindered, in part, by the lack of materials that are both inexpensive and highly efficient at room temperature. Now researchers have reported the discovery of a new material that works efficiently at room temperature while requiring almost no costly tellurium, a major component of the current state-of-the-art material.

Tiny vibration-powered robots are the size of the world's smallest ant

Researchers have created a new type of tiny 3D-printed robot that moves by harnessing vibration from piezoelectric actuators, ultrasound sources or even tiny speakers. Swarms of these 'micro-bristle-bots' might work together to sense environmental changes, move materials -- or perhaps one day repair injuries inside the human body.
Source:Georgia Institute of Technology

Experiments show dramatic increase in solar cell output

Method for collecting two electrons from each photon could break through theoretical solar-cell efficiency limit
Researchers have found a way to increase the output of silicon solar cells by allowing a single photon to release two electrons in the silicon
Source:Massachusetts Institute of Technology

Smart irrigation model predicts rainfall to conserve water

A predictive model combining information about plant physiology, real-time soil conditions and weather forecasts can help make more informed decisions about when and how much to irrigate. This could save 40 percent of the water consumed by more traditional methods, according to new research.
Source: Cornell University

A graphene superconductor that plays more than one tune

Researchers have developed a graphene device that's thinner than a human hair but has a depth of special traits. It easily switches from a superconducting material that conducts electricity without losing any energy, to an insulator that resists the flow of electric current, and back again to a superconductor -- all with a simple flip of a switch
Source:DOE/Lawrence Berkeley National Laboratory

Engineers develop chip that converts wasted heat to usable energy

Mechanical engineers have discovered a way to produce more electricity from heat than thought possible by creating a silicon chip, also known as a 'device,' that converts more thermal radiation into electricity. This could lead to devices such as laptop computers and cellphones with much longer battery life and solar panels that are much more efficient at converting radiant heat to energy

Flags that generate energy from wind and sun

Scientists have created flags that can generate electrical energy using wind and solar power.
Source: University of Manchester

Toward molecular computers: First measurement of single-molecule heat transfer

Heat transfer through a single molecule has been measured for the first time by an international team of researchers.
Source: University of Michigan

CATIA TRAINING

A training program on " Catia " was conducted for two batches by BIMIT. One from the 8th April 2019 to 11th April 2019 and the other on 29th April 2019 to 02th May 2019 for the pre final year B.Tech students of the Mechanical Engineering.

Rojin Mathew, Assistant Professor of the department coordinated and conducted the program. The Add on Course of Catia was attended by 40 students .