



SHRI SHANKARACHARYA INSTITUTE
OF PROFESSIONAL MANAGEMENT &
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NEWSLETTER **VOL. 09/ JULY-DEC 2021**

MECHANICAL EXPRESS

MECHANICAL ENGINEERING DEPARTMENT
SESSION 2020-21

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From the Editor-In-Chief's Desk :

Publishing a regular newsletter is an essential & exemplary aspect of any communication's strategy. It supports college or department stay connected to a given community by offering a regular dose of college-related news & info. Also, it aids in augmenting our reach beyond campus grounds that are agog in our college affairs.

In this tenure, we have published 15 volumes of Weekly Current Affairs, assisted in crafting a receptive & critical mind of an individual, aiding in the development of the reading skill, enhancing knowledge, strengthening vocabulary and for preparing competitive exams. Ultimately, in creating liable aware citizens of the nation & bringing the best out of them.

-Pulkit Naik
7th Sem

Bricks Are Producing Electricity



Dr. Rityuj Singh Parihar
Asst. Prof.

You read that right - the red bricks inside walls can produce enough current to light up a house for 5 hours.

Bricks are one of the oldest engineering materials known to man. It's been 5000 years since we figured out that baked clay hardens into bricks. The entire cities of Mohenjadaro and Harappa were made from bricks. Red bricks get their color from Iron Oxide - the same material that we call 'rust'.

Scientists coated these bricks with a conducting polymer called poly (3,4-ethylenedioxythiophene) (PEDOT). Nanofibers of the polymer squeeze through the pores of the bricks absorbing ions from iron oxide and humidity. The bricks have essentially changed into a capacitor - a device that stores charge. With the right wires, you can get current out of the brick and light up an LED.

The bricks have so far reported an areal capacitance of 1.60 F/cm² and an energy density of 222 μWh/cm² at a current density of 0.5 mA/cm². If we charge 50 bricks using a solar panel, it can provide emergency lighting for a house for 5 hours.

Industry 4.0



Mrs Neha Verma
Asst. Prof.

The Fourth Industrial Revolution, also known as Industry 4.0 is radically changing the way we work and live and while keeping them up with the pace of technological change we can feel overwhelmingly costly and potentially insecure at times. Manufacturers must increase connectivity and adopt digital technologies to make better informed data-driven decisions.

Industry 4.0, the latest industrial revolution has hit the manufacturing sector, building upon the adoption of computers and automation of industrial processes and adding smart autonomous systems powered by algorithms of data and machine learning.

MECHANICAL ENGINEERING ASSOCIATION

OFFICE BEARERS 2021-2022



PULKIT NAIK
(PRESIDENT)



MANISH SAHU
(VICE-PRESIDENT)



DIWAKAR SAHU
(CORE TEAM HEAD)

TEAM MEA

DESIGNATION	NAME
LOGISTICS HOSTEL	DEVWRAT SINHA
LOGISTICS CITY	MANAVENDRA SINGH HARSH KUMAR SUKHDEVE
DISCIPLINE INCHARGE	HARSH BAGHEL E.SHARATH KUMAR
TREASURER	BHAVYA BESRE
LITERARY INCHARGE	VINAYAK RAO RAGIB IMTIYAZ
AUDIO/VISUAL INCHARGE	SHIKHAR JAISWAL SHEIKH MOBIN
PUBLICITY INCHARGE	SHIVAM VERMA KUNAL DEWANGAN
CULTURAL INCHARGE	MOKSHITA VERMA AYUSH KOSRE
RECEPTION	MONIKA SAHU MINAKSHI SAHU

Mentor's Wisdom:

Mechanical Engineering Association

(Estd. 2008)

"The mind is not vessel to be filled but a fire to be ignited."

Mechanical Engineering Association (MEA) is an organization belong to department of mechanical engg. Formed by the students which firmly believes that every individual is blessed with certain qualities and MEA endeavors to best out of an individual. The basic aim of MEA is to enrich the students with different qualities to add dimensions to their personality so that every students emerges as a multi-functional engineer who is globally recognized. MEA strongly believes on developing competence to one's personality.



Mr Manish RK Sahu
Asst. Prof

EVENT TIMELINE



FDP
(17 Aug-21 Aug 2021)



Youtube Channel Launch
(04 August 2021)



MEA Oath Taking Ceremony
(01 September 2021)

Teacher's Day Celebration
(6 September 2021)



Hindi Diwas
(14 September 2021)

Engineer's Day Celebration
(15 September 2021)



Dam Visit
(30 September 2021)



Vishwakarma Puja
(17 September 2021)



SGT 5.0
(27 November 2021)

Youtube Channel Launch

Date of Event: 4th August 2021

The prime purpose of engineering design is to apply scientific knowledge for the solution of technical problems. While engineers provide a technical solution, it is also very important to understand that engineering design implies a solution that is aesthetic as well. The Department has taken the initiative to launch a Youtube channel through which students get the chance to uplift their skills and gain knowledge apart from the conventional syllabus.

Link-<https://www.youtube.com/channel/UCjAAK748ytncFme1xA7qBQA/feat>



Faculty Development Program

Date of Event: 17th August 2021-21st August 2021

Guest Speakers from across the nation belonging to prestigious institutions and corporations were invited to the Faculty Development Program. The FDP organised by the Department of Mechanical Engineering,SSIPMT Raipur, was a five day event on Emerging Trends in Thermal Engineering to familiarize the faculty members/ research scholars/ students, with the recent advancements in different fields of Thermal Engineering.



Oath Taking Ceremony

Date of Event: 1st September, 2021

The oath is a crucial ceremonial gesture, means for the officeholder to commit to the duties, responsibilities, & obligations associated with holding office. Core team members with all the office bearers took an oath in the presence of the appreciated MEA Head & all the venerated faculties of the department.



Teacher's Day Celebration

Date of Event: September 6th, 2021

From giving us a purpose to setting us up as successful citizens of the world, teachers inspire in us a drive to do well and succeed in life and to recognise this hard work of our mentors and gurus, Teachers' Day or Shikshak Divas is celebrated in India with great pomp and show.



Hindi Diwas

Date of Event: September 6th, 2021

Hindi Diwas, celebrated on September 14 every year, aims to raise awareness about the language and also commemorate the event when it was adopted as one of the official languages of India. The Constituent Assembly of India had, in 1949, recognised and adopted Hindi — an Indo-Aryan language written in the Devanagari script — as the official language of the country. It is one of the 22 scheduled languages of the Republic of India.

Easy writing competition-winners

1st - Tejeshwar Sahu, 5th sem, ET&T

2nd - Minakshi Sahu, 5th sem, Mechanical

Open mic Winner - Mayurakshi Singh, 5th sem, CSE



Engineer's Day

Date of Event: 15th September, 2021

Engineer's day was a departmental celebration where students and faculties gathered to pay respect to the profession they serve. Students and faculties had discussions on how they can serve the society and environment by being better engineers of the future.



Vishwakarma Puja

Date of Event: 17th September, 2021

Vishwakarma puja was set up at departmental workshop to praise the deity who protects and governs the toolmakers. Being mechanical engineers, we work closely with tools, machines and field work which are the core elements of our profession. Hence to celebrate this day, the department performs puja every year at Vishwakarma Jayanti.



Field Visit [GANGREL DAM]

Date of Event: 30th September, 2021

Field Visit to hydroelectric power generation plant, situated at Gangrel dam, Dhamtari was planned by the department of Mechanical Engineering for the students of 5th and 7th semester. Students along with faculty members visited the dam and the electric generation unit.



SSIPMT's GOT TALENT 5.0

Date of Event: 27 November, 2021

MEA has a sublime history with its signature event "SSIPMT's GOT TALENT" sponsored by TECHSOLVE. We all have witnessed the grand success of all five editions. We have breached the boundaries of SSIPMT & greeted the talents from other institutions of the state, more than 120 participants. Out of which only the best 22 have been shortlisted for the grand finale. The movie "Mein Aisa Kyun Hoon?" produced by SSIPMT Raipur was premiered in the grand finale, It has been selected for "75 creative minds of tomorrow" at 52nd IFFI Goa.

Results

Position	Name	Category	Prize
1	Mudit Ranjan Shrivastav	Singing	10000
2	The Stunners	Dancing	6000
3	Rohit Karmaker	Singing	4000
4	Pulkit Naik	MEA Rockstar	-----



National Energy Conservation Day (INDIA)

Date of Event: December 14, 2021

India marks December 14 as National Energy Conservation Day, and therefore, it is an important day to talk about energy conservation and the need for renewable energy. Energy conservation refers to the efforts made to ensure that energy is used efficiently by either using less energy for a particular constant purpose – like switching off lights and fans when not being used – or reducing the use of a particular service that uses energy – like driving less and using public transport instead. Energy conservation is a conscious, individual effort, and at a macro level, it leads to energy efficiency. The end goal of energy conservation is to reach sustainable energy.



Alumni Talk Series

Our Alumni has brought great glory to our institution. They have set the example of being a successful and good human being. They inspire us to have a clear conscience, the courage to speak the truth, and the importance of being authentic. To share the knowledge and experience they have accumulated in their time, we have created a series of Alumni Talks.

Date	Alumnus	Topic
11-07-21	Ms. Vijeta Shukla	Scope of Engineering through CGPSC
11-09-21	Mr. Sagar Andani	Fascinating Career Opportunities in Automobile Sector
19-09-21	Mr. Shekhar Kumar	Fascinating Career Opportunities in Mining Sector
24-10-21	Mr. Mukesh Pal Sir	Preparation of gate (for Tech & PSU job) and Future Guidelines

Design Patent for Rope Making Machine

-**Vinayak Rao**
7th sem



There's a famous quote which says-

“As engineers, we were going to be in a position to change the world – not just study it.”

—Henry Petroski, American engineer and author specializing in failure analysis

Our machine aims to combine straw threads to make a sturdy rope that can be used for miscellaneous purposes. To drive the machine, we improvised the driver mechanism with a pedal run driving mechanism instead of a motor run mechanism so that the machine can be efficiently used by rural people without thinking about electricity deficit.

As our team lead, Dr. Naveen Jain Sir came up with the idea of improvising a motor-run rope-making machine to cater to our rural needs.

We decided to lay our design using SOLIDWORKS, widely used CAD software among leading industries. During design, there were many instances where I felt like no improvement or improvisation could be further done but it was through Rityuj Sir's and Neha Mam's guidance and efforts that we overcame every obstacle and filed our design for a patent.

We filed our patent application on the first week of November 2021 and our patent was approved by the third week of December 2021. This is a great achievement on a personal and institutional basis. I look forward to working more under the guidance of our HOD Sir and our ambitious and hardworking team of faculties.

As it is said-

“We are continually faced with great opportunities brilliantly disguised as insoluble problems.”

—Lee Iacocca, American engineer, and automobile executive

System Implementing For Biometric Security

-Aman Singh Verma
7th sem



As we all know everyone uses a fingerprint in a smartphone, it is common because it is safe and secure for all. Everyone is in the habit of the fingerprint lock system. So, we created a module.

Biometric technologies have shown to be effective security methods in a variety of settings. Fingerprints are the most common and earliest biometric identification method. For nearly a century, law enforcement has relied on fingerprints to identify suspects. Personal authentication, such as accessing a computer, a network, an ATM, a car, or a home, is a far broader application of fingerprints.

The process of confirming the fingerprint picture to open an electronic lock using a fingerprint recognition system is known as electronic lock verification. The progress of fingerprint verification is highlighted. The data of the permitted fingerprint picture is compared to the data of the incoming fingerprint image to complete the verification. After then, the information from the arriving fingerprint image will be compared to the permitted fingerprint image.

The fingerprint door lock uses tried-and-true technology. The most established and tried sort of biometric technology is fingerprint reader scanning. Recent biometrics investigations have demonstrated that fingerprints are more accurate and cost-effective than the hand approach. Biometric fingerprint technology replication is almost impossible, with face-to-face Biometric security ensuring a secure way of user identification that can't be duplicated, lost, or stolen.

Every one of us is concerned about security in this technologically dependent society. People cannot keep their valuables safe even at their own homes, banks, or other places because we are all afraid of robbery. They are constantly worried about losing their valuable things. Traditional locking systems are not as secure as password-protected door locks.

So, in this project, we've solved all of these issues, and our project provides considerably increased lock security than standard lock security. The previous traditional lock system has been replaced by a password system. This project will give consumers effective security at a low cost. It will also be simple to install and provide security in any location, such as our homes, institutions, banks, or other public areas. If a user forgets their password, They can change or reset it, which gives the user extra flexibility.

Achievements

Patents	5
Chapters Published	8
SCI Publication	6
Scopus Publication	6
Conference	2
UGC	11

Placements

Arpit Shrivastava	Automotive Axles Limited
Nidhi Sahu	PharmEasy
Faizal Memon	Lido(Learning App)
Diwakar Sahu	TCS
Rohan Jaiswal	TCS
TJ Vyas	TCS
Pulkit Naik	Collabera
Ragib Imtiyaz	Collabera



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