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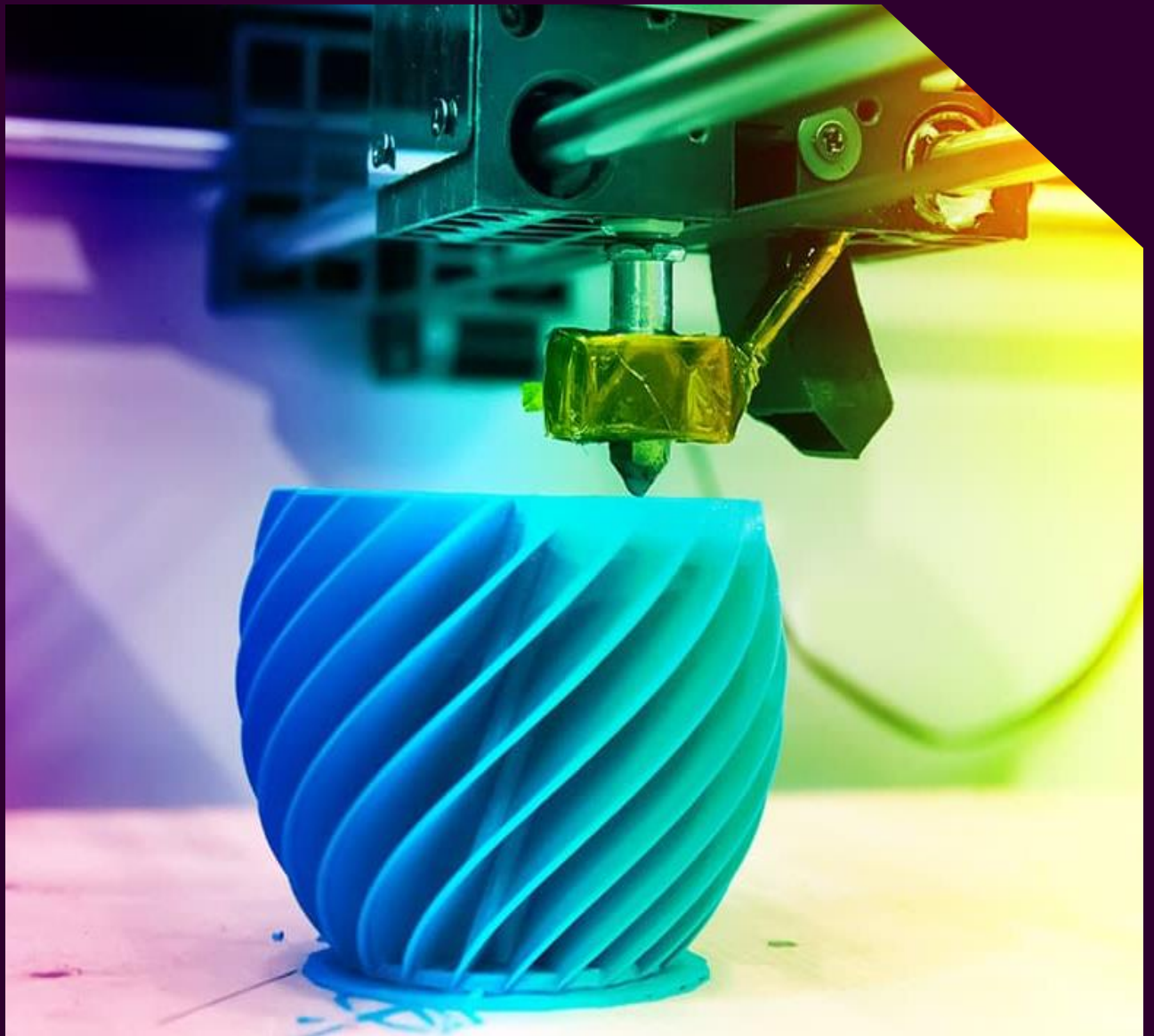
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# INGENIUM

Volume 2, Issue 1, July – December, 2020

Department Newsletter

Department of Mechanical Engineering



**AJ Institute of Engineering and Technology**

(A unit of Laxmi Memorial Education Trust ®)

NH-66, Kottara Chowki, Mangaluru - 575006



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0824-2862200

# DEPARTMENT NEWSLETTER

## Message from Editor's Desk:

Welcome to the second volume, first issue of Newsletter from the Department of Mechanical Engineering. This newsletter is a digital way for us to communicate with our students, faculty members, alumni and industrial partners. It aims to showcase the glimpse of the departmental activities and achievements. It enlightens the readers about the latest happenings in the department, focusing about different activities like placement, industry-academia, club activities, student and faculty achievements.

### Chief Patron:

**Mr. Prashanth Shetty**

(Vice President, Laxmi Memorial Education Trust)

### Patron:

**Dr. Shantharama Rai C**

(Principal, A. J. Institute of Engineering and Technology)

### Chief Editor:

**Dr. Rajesh Rai P**

(Head, Department of Mechanical Engineering  
A. J. Institute of Engineering and Technology)

### Editorial Committee:

Dr. Sreejith B K

Mr. Harold J D'Souza

Mr. Prasad B G

Mr. Sudheer Kini K

Mr. Chirag P

Mr. Harshith Shetty

## HOD's Message



Welcome to the first issue of the Mechanical Engineering Department Newsletter - 'IGENIUM' in its volume 2 series. It is about looking back and summing up every prestigious moment in the department. This newsletter is a bridge for us to communicate with our students, faculty members, alumni and industrial partners. It aims to showcase their achievements by which make them proud and self-motivated. We take the readers for a voyage of the latest incidence and happenings in the department. Any feedback will be greatly appreciated for the improvement of the next issue of the Newsletter.

**Dr. Rajesh Rai P**

Head, Department of Mechanical Engineering  
A. J. Institute of Engineering and Technology

# DEPARTMENT NEWSLETTER

## VISION

To create globally competent and self-reliant mechanical engineers adaptive to an interdisciplinary environment contributing to society through development, authority and entrepreneurship.

## MISSION

- To offer high quality graduate programme in the fields of Mechanical Engineering with value education to the students and make them responsive to societal needs.
- To nurture the students with a global outlook for a sustainable future with high moral and ethical values.
- To strengthen collaboration with industries academia and research organizations to enrich learning environment, thus enhance research and entrepreneurship culture.
- To create awareness about the need of interdisciplinary applications through alumni industry-institution interactions.

## PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

**PEO1:** Prepare graduates with mathematical, scientific and engineering skills to design and develop energy efficient systems for sustainable development.

**PEO2:** Excel graduates with high level of technical competency combined with research and complex problem solving ability to generate innovative solutions in Mechanical and multi-disciplinary areas.

**PEO3:** Equip students with modern tools, technology and advanced software's for deliberating engineering solutions.

**PEO4:** Inculcate graduates with strong foundation in academic excellence, soft skills, leadership qualities, professional ethics, and social concerns and understand the need for lifelong learning for a successful professional career

## PROGRAM OUTCOMES (POs)

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

# DEPARTMENT NEWSLETTER

**11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSOs)

**PSO1:** Apply the knowledge of modern engineering tools to design and Analyse the products and processes related to mechanical engineering system.

**PSO2:** Develop technical and interpersonal skills pertinent to mechanical and allied engineering for careers in industry, academia and government organisations.

## RESEARCH

Domain Name	Domain Co-coordinator	Domain Members
MANUFACTURING	Dr. Rajesh Rai P	Mr. Prashanth D A, Mr. Nithin Shet, Mr. Prasad B G
THERMAL	Dr. Vighnesha Nayak	Dr. Sreejith B K, Mr. Prakhyath, Mr. Karthik A V
DESIGN	Mr. Sunil Kumar S	Mr. Sudheer Kini, Mr. Harold J D'Souza

# DEPARTMENT NEWSLETTER

## FUNDS AND GRANTS

SL NO.	PROJECT TITLE	FUNDED BY & AMOUNT	GUIDE NAME	PROJECT MEMBERS
1	Performance, Combustion and Emission Characteristics of Single Cylinder CI Engine With WCO Biodiesel and Nanoparticles	KSCST Rs. 5000/-	-DR. VIGNESHA NAYAK -MR. KARTHIK A.V.	MOHAMMED SUHAIL, HAMMABBA ANSHIF, MAHAMMED ASHIK, RASIK AHAMED
2	Financial Assistance for Innovative Projects Under VTU Grant, Theme: Solid waste management, Title: Design and Fabrication of waste segregator using Delta Robot	VTU Grant Rs. 5000/-	-MR. VIJAY KUMAR H. K. -MR. HAROLD J D' SOUZA	MAHAMMAD MUFEEZ (TL) PAVAN I K ANU MATHEW NAVANITH SHETTY
3	Financial Assistance for Innovative Projects Under VTU Grant, Theme: Military and Defence applications, Title: GARUDA - Recon and Attack Drone	VTU Grant Rs. 5000/-	-DR. RAJESH RAI P. -MR. SUDHEER KINI K	SOURABH A S (TL) VARUNCHAND S AKHIL THOMAS PUNITH RAJ NAIK J

## Placement



**Mr. Chirag S Poonja, student of 7<sup>th</sup> Semester is placed in Jaro Education Pvt. Ltd.**

**CTC: 6.6 Lac per annum**

# DEPARTMENT NEWSLETTER

## List of Companies Visited For Placements

PLACEMENTS FOR MECHANICAL STUDENTS - 2021 BATCH		
COMPANY NAME	DATE OF DRIVE	ELIGIBLE STUDENTS
JARO Education Pvt Ltd.	10th September, 2020	55
Tata Consultancy Services	23rd to 30th October, 2020	37
SLK Software	22nd December,2020	23

## WORKSHOPS/WEBINAR

**Webinar on " Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by Department of Mechanical Engineering, A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.**

A Webinar on "Battling COVID-19 Pandemic by Advancement in 3D Printing Technology" by Mr. Shreyas S P, Director, HyCube Works Pvt. Ltd, Bengaluru was organized on 03-07-2020 at 11:00 am-12:00 pm through Cisco Webex meeting platform.

The Session began by welcoming and introducing the Resource person to the audience. Total 166 participants were participated from different colleges and industries across the world.

Webinar session had features 3D printing expert from the company that have taken on the duty of helping those in need in COVID-19 Pandemic difficult times. Discover how

A. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY  
NH-66, Kottara Chowki, Mangaluru, Karnataka - 575006

Department of Mechanical Engineering  
In Association with  
HyCube Works Private Limited, Bengaluru  
Organizes

**Webinar**  
on  
**Battling COVID-19 Pandemic by Advancement in  
3D Printing Technology**

3rd July 2020  
11.00 AM-12.00PM IST

Powered by  
Cisco Webex

OPEN TO ALL  
Free  
Registration

Registration Link : <https://forms.gle/6XLdH9CEDIC47XB18>  
or  
Scan QR Code

Resource Person  
**Shreyas S P**  
Director  
HyCube Works Pvt. Ltd., Bengaluru

e-Certificate will be provided

Dr. Vighnesha Nayak  
Convener

Dr. Rajesh Rai P  
HOD

Dr. Shantharama Rai C  
Principal

For More Info Contact: 8050940728 / 9686380597

# DEPARTMENT NEWSLETTER

they use this technology to develop equipment, what tactics they have found to be effective, and how through networking and strong connections they have been able to revamp their workflows in order to continue providing essential goods and services.

As companies gear up to fight the spread of Coronavirus, innovative technologies such as 3D printing have exploded onto the scene as a means to develop personal protective equipment (PPE) for doctors and medical staff faster and more efficiently. When traditionally manufactured equipment isn't available due to supply shortages 3D printing has been getting PPE into the hands of those who need it. The session was concluded by giving the vote of thanks.

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**Webinar on " Transition from Thermo Chemical (I C Engines) to Electro- Chemical Systems (Fuel Cells) - The future of Energy Conversion Systems" organised by Department of Mechanical Engineering, A. J. Institute of Engineering and Technology, Mangaluru on 11/7/2020.**

A Webinar on " Transition from Thermo-Chemical (IC Engines) to Electro-Chemical system (Fuel Cells) - The future of energy conversion systems by Dr. Anand Shivapuji, Principal Scientist, IISc, Bangalore was organized on 11-07-2020 at 12:00 PM-12:00 PM through Google meeting platform.

The Session began by welcoming and introducing the Resource person to the audience. Total 145 participants from different colleges and industries across the country were attended the session.

The Speaker started by giving an introduction about **Thermo-Chemical (IC Engines) to Electro-Chemical system** and systems play a key role in a wide range of industry sectors. These devices are critical enabling technologies for renewable energy; energy management, conservation, and storage; pollution control/monitoring; and greenhouse gas reduction.

**A J INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
NH-66, Kottara Chowki, Mangaluru, Karnataka 575006  
**DEPARTMENT OF MECHANICAL ENGINEERING**  
Organizes

**WEBINAR**

Transition from Thermo-Chemical (IC Engines) to Electro-Chemical system (Fuel Cells) - The future of energy conversion systems

**OPEN TO ALL FREE REGISTRATION**

Powered by Scan QR code

12:00 PM - 1:00 PM  
11<sup>th</sup> July 2020

All Participant will get e-Certificate

Registration Link: <https://tinyurl.com/AJIET-MECH-WEBINAR-2>

Dr. Vignhesha Nayak  
Convener

Dr. Rajesh Rai P  
HOD

Dr. Shantharama Rai C  
Principal

For more Info Contact: 9686380597 / 8722440399



# DEPARTMENT NEWSLETTER

He also highlighted the optimization in terms of cost, life time, and performance, leading to their continued expansion into existing and emerging market sectors. The more established technologies such as deep-cycle batteries and sensors are being joined by emerging technologies such as fuel cells, large format lithium-ion batteries, electrochemical reactors; ion transport membranes and super capacitors. This growing demand for electrochemical energy systems along with the increasing maturity of a number of technologies is having a significant effect on the global research and development effort which is increasing in both in size and depth.

The session was concluded by giving the vote of thanks.

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## Webinar on “Design Think a Self-Reliant India” organised by Department of Mechanical Engineering A. J. Institute of Engineering and Technology, Mangaluru on 23/7/2020

A Webinar on "Design Think A Self Reliant India" by Mr Raghavendra S Founder CEO Akriithi, Shimoga, Karnataka was organized on 11-07-2020 at 12:00 PM-12:00 PM through Google meeting platform.

The Session began by welcoming and introducing the Resource person to the audience. Total 335 participants from various colleges and industries across the country were attended the session.

The Speaker started by giving an introduction about his research innovation in the field of 3D printing. He also pointed out the entrepreneurial journey and 3D printing and about how Design thinking fosters innovation thereby helping in building a self-dependent India.

The session was concluded by giving the vote of thanks.

The poster is for a webinar titled "Design Think A Self Reliant India". It features the logos of A J Institute of Engineering and Technology (AJIET) and Akriithi. The event is organized by the Department of Mechanical Engineering at AJIET, in association with Akriithi. The webinar is scheduled for 23rd July 2020, from 11:00 AM to 12:00 PM IST. It is open to all with free registration. The resource person is Mr. Raghavendra S, Founder CEO of Akriithi. The registration link is <https://bit.ly/2WrmPMxU>, and there is a QR code for scanning. An e-certificate will be provided. The organizers listed are Dr. Srijith (Convener), Mr. Prashantha D A (Coordinator), Dr. Rajesh Rai P (HOD), and Dr. Shantharama Rai C (Principal).

# DEPARTMENT NEWSLETTER

## VIRTUAL LAB

- ✦ Virtual labs are simulated learning environments that allow students to complete laboratory experiments online and explore concepts and theories without stepping into a physical science lab.
- ✦ Students can try out lab techniques for the first time and become more familiar with advanced lab equipment that might otherwise be inaccessible.
- ✦ Through animations, students can explore life science at a molecular level and look inside the machines they are operating.
- ✦ Virtual lab software creates opportunities for alternative access to science education.

Mr. Karthik A V demonstrated experiments to students of 4<sup>th</sup> Semester on Whitworth Mechanism from Mechanics of Machine lab related to the subject Kinematics of Machine (18ME44).

Mr. Sunil Kumar demonstrated experiments to students of 4<sup>th</sup> Semester on Izod Impact Test, Charpy Impact Test and Strength of Materials lab from Mechanics of Materials (18ME32).

## MINI-PROJECT

SL NO	TITLE	GUIDE	STUDENTS NAME	
1	EFFECT OF POROSITY ON AIRFOIL	Dr. Sreejith B K	SARANG CM	4JK18ME032
			PRANAV TV	4JK18ME028
			PRANAV AP	4JK18ME027
			ABHISHEK S	4JK18ME049
2	AGRIBOT	Mr. Prakhyath	SHRAVAN K	4JK19ME405
			MANISH K ANCHAN	4JK19ME402
			MOHAMMEDFAYAZ	4JK19ME404
			MANISH M P	4JK19ME403
3	ROBOSOCCER	Mr. Prakhyath	ASHISH H	4JK18ME009
			HARSHITH SHETTY	4JK18ME018
			DHEERAJ RAO	4JK18ME016
			DEEKSHITH	4JK18ME013
4	AIR ENGINE	Mr. Karthik A.V.	ADITH AJITH KUMAR	4JK18ME003
			DEEPA A S	4JK18ME014
			DHARMIK ATTAVAR	4JK18ME015
			RAKSHITH ACHARYA	4JK18ME051

# DEPARTMENT NEWSLETTER

## STUDENT PROJECTS

Sl. No.	TITLE	GUIDE	STUDENTS NAME	USN
1	<b>Mechanical pocket manuring</b>	Dr. Vighnesha Nayak	SHAILESH V AITHAL RAHUL P SUVARNA BHUVANESH R. M VIKAS P	4JK17ME061 4JK17ME051 4JK17ME014 4JK17ME059
2	<b>Multipurpose farming machine</b>	Dr. Rajesh Rai P	CHIRAG S POONJA NIHAL LLOYD ADRIEL S MIRANDA KEERTHAN KUMAR	4JK17ME016 4JK17ME062 4JK18ME400 4JK18ME402
3	<b>Computational Analysis of Pin-fin based Cross Tube Heat Exchanger using CFD</b>	Mr. Harold J D'Souza	SAURABH S ADDOOR GURUPRASAD G GURUPRASAD R MALLI LIKITH S RAJ	4JK17ME055 4JK17ME019 4JK17ME020 4JK18ME401
4	<b>Automated drain cleaning machine</b>	Mr. Nithin Shet	KARAN K KARTHIK RITESH SANATH KUMAR M	4JK17ME026 4JK17ME027 4JK17ME052 4JK17ME054
5	<b>Design and Fabrication of Corn De-seeding machine with Crusher</b>	Mr. Karthik A V	AHMED AMEEN M MUSTHAFA MOHAMMED AZVIL MOHAMMAD FARHAN	4JK17ME003 4JK17ME031 4JK17ME035 4JK17ME036
6	<b>Influence of geometric discontinuity and thermal aging on mechanical behaviour of aircraft aluminium alloy</b>	Mr. Sunil Kumar S	MOHAMMED SHIYAN MOHAMMED RAZI MOHAMMAD AFEEZ HASSAN MUQSITH	4JK17ME041 4JK17ME040 4JK17ME033 4JK17ME022
7	<b>Design &amp; fabrication of solar refrigeration system</b>	Dr. Rajesh Rai P	CHARAN RAJ SHETTY NAVARAG K K PRITHVIRAJ A SHETTY MISS K THULASI S H	4JK17ME015 4JK17ME044 4JK17ME047 4JK17ME066
8	<b>Design and fabrication of shredder machine for recycling of Polyethylene terephthalate (PET) waste</b>	Mr. Prashanth D A	ABIRAM PRAKASH ARJUN PRAKASH LANCE KURIYAN PRASOBH D V V	4JK17ME002 4JK16ME004 4JK17ME065 4JK17ME064
9	<b>Design and fabrication of coconut dehusker with coconut milk and multiple oil extractor</b>	Mr. Sudheer Kini	AKHIL SUDHEER ANIL RAJ T V ARJUN P P ANIRUDH E. T.	4JK17ME004 4JK17ME007 4JK17ME010 4JK17ME008
10	<b>Performance Combustion and Emission Characteristics of Single Cylinder CI Engine with WCO Biodiesel and Nanoparticles With Oxygen Enrichment Process</b>	Dr. Vighnesha Nayak	PURUSHOTHAMA H S MANISH KULAL WILFRED MARSHAL V TEJESH	4JK17ME049 4JK17ME032 4JK17ME060 4JK18ME403
11	<b>Motorized wheel chair</b>	Mr. Prakhyath	ABHIRAJ K U AKSHAY SUNIL K PRANAV K RAAFIH A Y	4JK17ME001 4JK17ME005 4JK17ME046 4JK17ME050

# DEPARTMENT NEWSLETTER

12	<b>Automatic solar powered railway track crack Detecting vehicle</b>	Dr. Sreejith B K	NEHA S JAIN LIKITH S AMIN JACOB ANTONY JATIN KUCKIAN	4JK17ME045 4JK17ME029 4JK17ME024 4JK17ME025
13	<b>Effect of corrosive environment on fracture toughness of aluminium 6061 alloy: An experimental approach</b>	Mr. Harold J D Souza	SHON TOM AMAL M N ASHOK KUMAR R G SUSHANTH JOGI	4JK17ME057 4JK17ME006 4JK17ME012 4JK17ME058
14	<b>Waste segregation system in railway coach Pertaining to swach-Bharath</b>	Mr. Prasad B G	M I SHIYAZ M GILCHRIST P D'SILVA HASSAN ZAHEER	4JK17ME030 4JK17ME018 4JK16ME007

## INTERNSHIPS

Sl No	Students name	Organization	Date/Duration	Guide
1	JACOB ANTONY	Prinstons Smart Engineers Pvt Ltd	August 22 <sup>nd</sup> - September 22 <sup>nd</sup> , 2020	Dr. Sreejith B K

## FACULTY PUBLICATIONS

Sunil Kumar S. et al., "Mechanical Response of EN24T and EN36 Steels Subjected to Corrosion" in the international Scopus indexed Journal - Solid State Technology

"Karthik A V, K Vasudeva Karanth, Shiva Kumar, Madhwesh N" had been reviewed by the Editorial Board and published in "International Journal of Mechanical Engineering & Technology (IJMET) Scopus indexed Journal, Volume 9, Issue 7, July 2020, pp. 1177-1187; ISSN Print: 0976-6340 and ISSN Online: 0976-6359

## FDP/WEBINAR/SEMINARS/TRAINING ETC.

Mr. Sunil Kumar S attended AICTE Recognized FDP on "Python" organised by JSSATE, Noida under Spoken tutorial project, IIT, Bombay from 22-06-2020 to 04-07-2020 (2 week).

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Mr. Sunil Kumar S attended FDP on "SUSTAINABLE ENERGY SOLUTIONS IN SOLAR ENERGY APPLICATIONS" organized by MITE, Moodabidri from 23-11-2020 to 27-11-2020 (5 day).

Mr. Harold D'Souza attended a Webinar on "Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.

Mr. Harold D'Souza attended a Webinar on " Transition from Thermo Chemical (I C Engines) to Electro-Chemical Systems (Fuel Cells) - The future of Energy Conversion Systems organised by A. J. Institute of Engineering and Technology, Mangaluru on 11/7/2020

Mr. Harold D'Souza attended a Webinar on " Deep Learning for Satellite Imagery" organised by A. J. Institute of Engineering and Technology, Mangaluru on 06/08/2020.

Mr. Harold D'Souza attended a Two day global virtual seminar series on "Exciting Advances in Manufacturing and Automation - 2020 organised by Gitam Institute of Technology, Vishakhapatnam by 28/08/2020 - 29/08/2020.

Mr. Harold D'Souza attended a Five Days FDP on " Additive Manufacturing" organised by Presidency University, Bengaluru on 29/08/2020 - 02/09/2020.

Mr. Harold D'Souza attended a Three day Webinar on " Waste to Energy" organised by Centre for Environment, Institute of Science and Technology, Jawaharlal Nehru Technological University, Hyderabad on 19/09/2020 - 21/09/2020.

Mr. Harold D'Souza attended a Five day FDP on "Advanced Material Technology organised by Malnad College of Engineering, Hassan by 01/07/2020 - 05/07/2020.

Four days ATAL Academy FDP on " Additive Manufacturing" organised by Noida Institute of Engineering and Technology, Noida on 09/11/2020 - 13/11/2020.

Mr. Sudheer Kini K attended a Webinar on " Transition from Thermo Chemical (I C Engines) to Electro-Chemical Systems (Fuel Cells) - The future of Energy Conversion Systems" organised by A. J. Institute of Engineering and Technology, Mangaluru on 11/7/2020

Mr. Sudheer Kini K attended a Webinar on "Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.

Mr. Sudheer Kini K completed the one week National Level Online Faculty Development Programme on "Advanced Materials, Machining and Characterization," during 06th to 10th, July 2020, organized by the Department of Mechanical Engineering, Sir M Visvesvaraya Institute of Technology, Bengaluru-57.

Mr. Sudheer Kini K has participated and successfully completed a 5-day Faculty Development Program on "Applications of Thermodynamics" conducted by Department of Mechanical Engineering, PESITM, Shivamogga from 13th -17th July, 2020.

# DEPARTMENT NEWSLETTER

Sudheer Kini K attended a Webinar on " Design Think a Self-Reliant India" organised by A. J. Institute of Engineering and Technology, Mangaluru on 23/7/2020

Mr. Karthik A.V. has participated and successfully completed a 5-day Faculty Development Program on "Applications of Thermodynamics" conducted by Department of Mechanical Engineering, PESITM, Shivamogga from 13th -17th July, 2020.

Mr. Karthik A.V. has participated and successfully completed a 5-day Faculty Development Program on "Cryogenics composites" conducted by Department of Mechanical Engineering, B.R. Ambedkar NIT Jalandhar from 3rd -7th August, 2020.

Mr. Karthik A.V. has participated and successfully completed a 5-day Faculty Development Program on "Advanced materials and manufacturing" conducted by Department of Mechanical Engineering, SMVITM from 28 Dec 2020-1st Jan 2021

Mr. Karthik A.V. has participated and successfully completed a 5-day Faculty Development Program on "Cryogenics & Superconductivity - A Research Perspective" conducted by Department of Mechanical Engineering, from 21/09/2020 to 26/09/2020

Mr. Prakhyath attended a Webinar on " Transition from Thermo Chemical (I C Engines) to Electro- Chemical Systems (Fuel Cells) - The future of Energy Conversion Systems" organised by A. J. Institute of Engineering and Technology, Mangaluru on 11/7/2020

Mr. Prakhyath attended a Webinar on "Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.

Mr. Prakhyath attended one week FDP program on "Stepping towards problem and project based learning for academic excellence" organized by Kolhapur Institute of Technology, Kolhapur from 9/06/2020 to 13/06/2020

Mr. Prakhyath attended a Online short course on " Cryogenics and Composites: Theory and Application (CCTA 2020) organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar from 03/08/2020 to 07/08/2020

Mr. Prakhyath attended 3 days Webinar on " " Cryogenics and its applications" organised by JSS Science and Technology University, Mysore from 12/08/2020 to 14/08/2020

Mr. Prashanth D A attended one week FDP On " Research Methodologies in Mechanical Engineering" organised by Narasimha Reddy Engineering College, Telangana" from 30/07/2020 to 04/08/2020

Mr. Prashanth D A attended one day webinar On " Job Market Condition post Covid 19" organised by "SJEC Mangalore" on 04/08/2020

# DEPARTMENT NEWSLETTER

Mr. Prashanth D A attended a Webinar on " Transition from Thermo Chemical (I C Engines) to Electro-Chemical Systems (Fuel Cells) - The future of Energy Conversion Systems" organised by A. J. Institute of Engineering and Technology, Mangaluru on 11/7/2020

Mr. Prashanth D A attended a Webinar on "Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.

Mr. Prasad B G has successfully completed one week Faculty development program on "Introduction to Python Basics" from 23<sup>rd</sup> to 29<sup>th</sup> July 2020, organised by Canara Engineering College, Benjanapadau

Mr. Prasad B G attended a Webinar on "Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.

Mr. Prasad B G has successfully Participated in 3-day Faculty development program on "Introduction to PLC and Automation" from 31<sup>st</sup> July to 2<sup>nd</sup> August 2020, organised by Canara Engineering College, Benjanapadau

Dr. Vighnesha Nayak attended a Webinar on " Transition from Thermo Chemical (I C Engines) to Electro-Chemical Systems (Fuel Cells) - The future of Energy Conversion Systems" organised by A. J. Institute of Engineering and Technology, Mangaluru on 11/7/2020

Dr. Vighnesha Nayak attended a Webinar on "Battling COVID-19 Pandemic by advancement in 3D printing Technology organised by A. J. Institute of Engineering and Technology, Mangaluru on 03/07/2020.

Mr. Sunil Kumar S attended AICTE Recognized FDP on "Python" organised by JSSATE, Noida under Spoken tutorial project, IIT, Bombay from 22-06-2020 to 04-07-2020 (2 week).

## National/International Conferences

Dr. Sreejith B. K., presented paper titled' **Capability of rans simulation to predict laminar separation bubble on the e216 airfoil**' in 2nd international conference (online) on Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering (SME-2020), December 22-23, 2020, NMAM Institute of Technology, Karnataka, India. (Journal of Material Today, under process).

Dr. Sreejith B. K., presented paper titled "**Comparative study on the aerodynamic performance of airfoil with boundary layer trip of various geometrical shapes**" in 2nd International Conference on Future of Engineering Systems and Technologies, FEST2020), December 18-19, 2020, FIST, New Delhi in Association with NIET, Greater Noida, India.

## OTHER ACHIEVEMENTS

Dr. Sreejith B. K as co-principal investigator and Dr. Sathyabhama S as Principal Investigator, a project proposal has been submitted to Ministry of New and Renewable Energy (Rs. 38 Lakhs)

Dr. Sreejith B. K has reviewed three papers for the conference Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering” in short “SME-2020” during 22nd - 23rd December 2020 at NMAM Institute of Technology, Nitte.

## STUDENT ACHIEVEMENTS

### ACADEMIC TOPPERS



**ASHITH PRINSTON MABEN, Scored 9.2 SGPA in 8<sup>th</sup> Semester university exam**



**MUHAMMED FAIZAL, Scored 8.75 SGPA in 8<sup>th</sup> Semester university exam**



**PAVAN I K, Scored 8.75 SGPA in 8<sup>th</sup> Semester university exam**



**AKHIL THOMAS, Scored 8.75 SGPA in 8<sup>th</sup> Semester university exam**



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**VIKAS, Scored 9.0 SGPA in 6<sup>th</sup> Semester university exam**



**SHAILESH AITHAL, Scored 9.0 SGPA in 6<sup>th</sup> Semester university exam**



**RAHUL P SUVARNA, Scored 9.0 SGPA in 6<sup>th</sup> Semester university exam**



**ABIRAM PRAKASH, Scored 9.0 SGPA in 6<sup>th</sup> Semester university exam**



**DEEPA A S, Scored 10.0 SGPA in 4<sup>th</sup> Semester university exam**



**HARSHITH SHETTY, Scored 9.04 SGPA in 4<sup>th</sup> Semester university exam**



**ADITH AJITH KUMAR, Scored 9.04 SGPA in 4<sup>th</sup> Semester university exam**

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VASANTH KUMAR, Scored 9.04 SGPA in 4<sup>th</sup> Semester university exam

## CULTURAL EVENTS

Ms. Neha Jain, Student of 4<sup>th</sup> Year participated in

Miss India 2020	On 27-7-2020
Miss virtual queen 2020	On 30-8-2020
Asia's next top model	On 15-10-2020
Album song	On 6-11-2020

And has Won Cash with certificate and also **Best actress** memento.



## TECHNICAL EVENTS

DATE	SEMESTER	STUDENT NAME	EVENT	DATE	PRIZES
10-7-2020	4 <sup>th</sup>	DEEPA A S	Paper presentation	10-7-2020	Participation
10-7-2020	4 <sup>th</sup>	HARSHITH SHETTY	Paper presentation	10-7-2020	Participation

## **What to expect for the future of mechanical engineering?**

With the rise of industry 4.0, digitisation is rapidly changing the mechanical engineering sector. From artificial intelligence (AI) and machine learning (ML) to big data, these technologies are transforming the way engineers develop and design new equipment. Technology is creating increased opportunities for mechanical engineers to design and introduce New Product Introduction (NPI) improved products and adapt them to the changing demands of customers. In the past, designing new equipment and systems often required engineers to develop prototypes multiple times before the final version. As more and more data becomes available, this will allow mechanical engineers to accelerate the design process, make accurate evaluations, and thus create products based on the results. There's an evolution taking place in mechanical engineering, so what can we expect in the future?

### **Internet of Things (IoT)**

One of the most significant changes in mechanical engineering is the way mechanical products are developed, prototyped, and manufactured. There is a shift away from mechanical systems to more software and data-driven tools both at the design stage and application level with a connection directly to the internet. Many product iterations are carried out on-screen via computer-aided design and simulation, ensuring more efficiency and accuracy using field data. In the future, we're likely to see more IoT-driven intelligent devices that can communicate with their original equipment manufacturer (OEM) after they've left the manufacturing line. As a result, mechanical engineers can easily identify and potentially solve common issues and make improvements, all whilst working remotely. IoT simply helps mechanical design engineers identify and solve problems with their products faster. According to research, the number of IoT devices online will rise to 75 billion by 2025. This means the future mechanical engineer must be ready for a new age of simulations and integrated design processes, both of which will make workflows more streamlined.

### **The rise of electric vehicles**

There's no doubt that that electric vehicles (EV) will have a huge impact on the mechanical engineering sector. One of the biggest changes will be the gradual move from combustion engines to battery-based power systems, which are much cleaner and environmentally friendly. But employment numbers are unlikely to be affected as most mechanical engineers in the automotive sector do not design engines.

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The greatest proportion of work in the automotive arena includes chassis, frame and body, seating, airbags, ventilation, instrument cluster, cooling systems etc. As the EV market grows, there will be an increased demand for mechanical engineers to predict and control how heat moves around the



automotive vehicle (computational fluid dynamics), how materials and geometries respond to forces, how materials wear, how humans fit and interact with objects in their environment, etc. Some mechanical engineers may also need to develop the electrical control circuits within the EV. There is a whole range of new opportunities for mechanical engineers with the rise of EVs.

## **Paving the way for sustainability**

In the coming years, there will certainly be an increase in the demand for renewable energy technologies. The shift towards more sustainable practices is becoming more common, with solar and wind energy being used more than other sustainable sources. The future of mechanical engineering may revolve around developing new machines to assist in the manufacturer of solar cells and semiconductor wafers. We must focus on sustainable engineering in the future to help minimise the environmental impact. The mechanical engineering sector is very well positioned to create solutions that not only enable resource-friendly manufacturers but also explore new recycling options and ensure waste materials are leaving

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warehouses in the right way, plastics is an example where many solutions are being developed for comprehensive waste management.

In the future, we can expect more products and manufacturing processes that will give mechanical design engineers opportunities to be more sustainable.

NOVEL CORONAVIRUS DISEASE  
(COVID-19)



Ministry of Health & Family Welfare  
Government of India



## THREE GOLDEN RULES



Always wear  
Face-cover/mask



Wash hands frequently  
and thoroughly  
with soap and water



Maintain distance  
from others

Badalkar Apna Vyavahar, Karein Corona Par Vaar

For information related to COVID-19  
Call the State helpline numbers or Ministry of Health and Family Welfare, Government of India's 24x7  
helpline number 1075 (Toll Free), Email at [ncov2019@gov.in](mailto:ncov2019@gov.in), [ncov2019@gmail.com](mailto:ncov2019@gmail.com)

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# Department of Mechanical Engineering



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