



CHRIST
(DEEMED TO BE UNIVERSITY)
BANGALORE · INDIA

THE **TORQUE** #5

5th edition



**DEPARTMENT OF MECHANICAL, AUTOMOBILE,
ROBOTICS AND MECHATRONICS ENGINEERING**

JANUARY

2024

VISION AND MISSION

VISION

Develop Mechanical, Automobile Engineering, Robotics and Mechatronics graduates to be successful in chosen professional career with innovative academic processes for the overall development.

MISSION

- To provide excellent academic ambience in curricular cocurricular and extracurricular initiative facilities and teachinglearning experience
- To nurture holistic development of individuals.
- To imbibe professional ethics driven by a sense of moral responsibility committed to the service to society

HOD'S Message

It is with immense joy that I extend my heartfelt congratulations to the entire editorial board on the momentous occasion of the release of Torque #5, the E-magazine covering the period from March 2023 to December 2023, for the Mechanical, Automobile, Robotics, and Mechatronics Department. The wealth of achievements showcased within this publication, with a substantial number of winners and participants in both curricular and extracurricular activities, is truly commendable. This success is a testament to the unwavering dedication and remarkable capabilities of our esteemed staff and talented students. It underscores their commitment to excellence and their possession of the necessary skill sets that bring such notable accolades to our institution. As we revel in these accomplishments, I express my sincere hope that the number of achievers will continue to grow in the years ahead. The collaborative efforts of the editorial board in compiling and publishing Torque #5 not only serve as a source of pride but also stand as a recognition of the hard work and exceptional talent within our community.

- Dr Gurumoorthy S Hebbar

HOD, Mechanical, Automobile, Robotics and Mechatronics Engineering



EDITORIAL

I am delighted to present “The TORQUE,” a testament to the symbiotic relationship between the vibrant energy of our students and the rich experience and wisdom of our esteemed faculty within the Department of Mechanical, Automobile, Robotics and Mechatronics Engineering. This fusion has resulted in the creation of a dynamic department where faculty members are actively shaping and refining our students into the engineers of tomorrow, while students are initiating their professional journeys through active participation in diverse activities.

As we progress through the academic year, “The TORQUE” will transform into a culmination that summarizes our collective efforts and achievements in the pursuit of ‘EXCELLENCE AND SERVICE.’ I extend heartfelt thanks to Rachel Manoharan, Jerry V Joy, and Priyanka Chaudhary for their unwavering and continuous support in designing this newsletter with speed and excellence. A special acknowledgment goes to the Head of the Department, Dr Gurumoorthy S Hebbar , for his consistent guidance, which has been instrumental in steering our endeavors.

I express wholehearted gratitude to all faculty members for their contributions in providing information for this newsletter. It is through your collective efforts that we are able to showcase the vibrancy and success of our department. Wishing everyone continued success and looking forward to the upcoming milestones on our journey towards excellence and service.

- Dr Sajna Panigrahi

EDITORIAL

Dear Readers ,

We trust that you found the content in Torque #5 both informative and engaging.

Our dedicated team works tirelessly to deliver articles that cater to your interests, and we are sincerely grateful for your continued support.

A special note of appreciation goes to our beloved Head of Department, Dr Gurumoorthy S Hebbar, whose unwavering support has been the bedrock of our endeavors. We are also indebted to Dr Sajna Panigrahi and Dr Harish Kumar M for their valuable insights and guidance throughout this rewarding journey.

Your feedback is invaluable to us. If you have any suggestions or thoughts on future articles, please feel free to reach out to us at sajna.panigrahi@christuniversity.in. We are eager to hear from you.

As we bring Torque #5 to a close, we extend our heartfelt gratitude for your readership. We look forward to the pleasure of sharing more compelling content with you in the future.

Best regards,

Editors of Torque #5

EDITORIAL



Dr SAJNA PANIGRAHI



Dr HARISH KUMAR M



Rachel Manoharan



Priyanka Chaudhary



Jerry V Joy

BEST WISHES

“Embarking on a journey fueled by courage is a more exhilarating path than succumbing to fear, and in the grand scheme of things, it proves to be the easier route. We need not transform into heroes overnight; instead, progress unfolds one step at a time. As we face each challenge that arises, often realizing it’s not as daunting as it first appeared, we discover the inner strength to steadfastly confront it. Here’s to taking each step with resolve and finding the courage to overcome every obstacle. Wishing our readers all the best on the unique journeys.”





Rev Dr Fr Sony Chundattu
Director, SOET



Rev Fr Jiby Jose
Finance officer, Kengeri campus



Rev Fr Shijin P J
Assistant Director, SOET



Dr Iven Jose
Dean, School of Engineering &
Technology



Dr Gurumoorthy S Hebbar
HoD, Mechanical, Automobile, Robotics
and Mechatronics Engineering



Dr James Sathyakumar
Coordinator, Automobile
Engineering



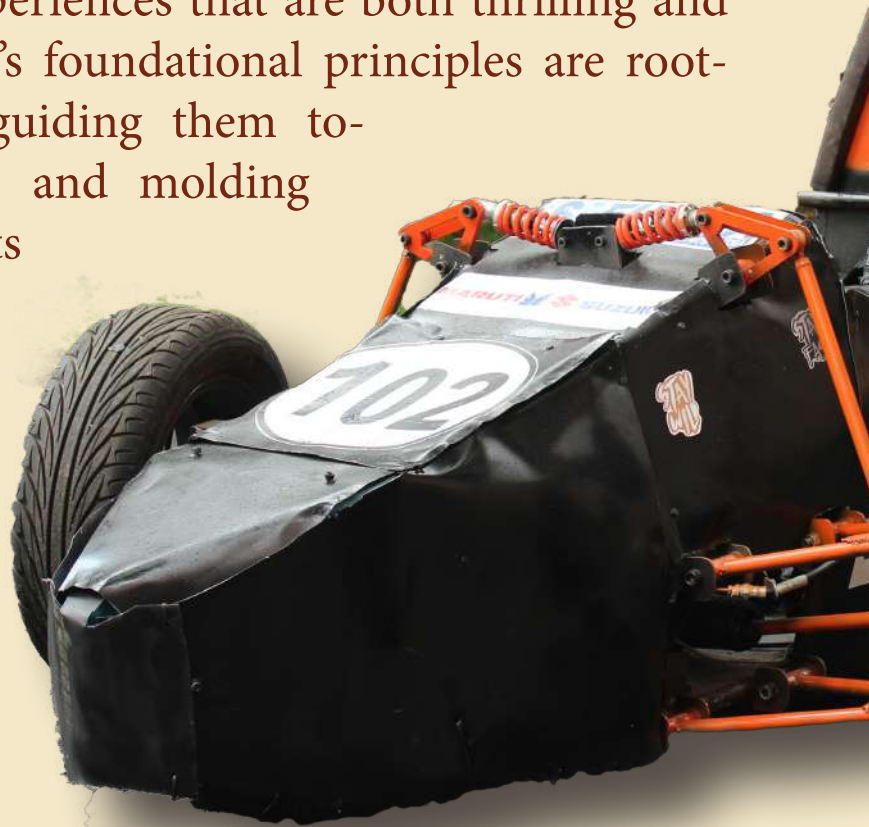
Dr Pal Pandian P
Coordinator, Robotics & Mechatronics
Engineering

ABOUT THE DEPARTMENT

In the Department of Mechanical, Automobile, Robotics and Mechatronics Engineering, a student's journey is a vibrant tapestry, woven with diverse experiences that are both thrilling and challenging. The department's foundational principles are rooted in nurturing students, guiding them towards holistic development, and molding them into adept technocrats capable of global competition and collaboration.

Equipped with cutting-edge technology such as 3D Printers, KUKA Robots, FFT analyzers, Wind Emulators, and more, the department ensures that both researchers and students have

access to state-of-the-art resources. Students and faculty in the Mechanical & Automobile Engineering Department are encouraged to extend their learning beyond the confines of classrooms,



engaging in project work, professional dialogues, and active participation in a myriad of technical and co-curricular events.

The Department of Mechanical, Automobile, Robotics and Mechatronics Engineering, characterized by its evergreen nature, places a strong emphasis on experiential learning. With over 30 faculty members dedicated to research in cutting-edge domains, the department boasts 28+ physical labs across campus, established through collaborations with industry leaders such as Festo, Mercedes Benz, Bosch, Ashok Leyland, and Yagen Robotics. Additionally, strategic MOUs with GTTC and L&T edutech further enrich the learning environment.

In essence, life within the Department of Mechanical, Automobile, Robotics and Mechatronics Engineering is a dynamic journey, fostering a culture of experiential learning, research excellence, and active engagement in both technical and co-curricular realms.



PROGRAMMES OFFERED

UNDERGRADUATE

1. Bachelor of Technology in Mechanical Engineering
2. Bachelor of Technology in Automobile Engineering
3. Bachelor of Technology in Robotics and Mechatronics Engineering

POSTGRADUATE

1. Master of Technology in Machine Design

DOCTORAL (PhD)

1. Doctor of Philosophy (PhD) in Mechanical Engineering

HONORS

1. Digital Manufacturing



ADVANCED LAB FACILITIES

- Nano and ceramic coating
- Surface Engineering
- Spray Dryer
- 3D Printing
- Kuka Robo And FMS
- CNC with Hard-machining
- Industry Automation
- Renewable and Alternate Energy
- Modern Automotive Technologies

RESEARCH AREAS

- Composite Materials and Coatings
- Alternate Fuels
- Welding Technology
- High speed machining/Hard machining
- MR fluids
- Hybrid Vehicles
- Robotics

INDUSTRIAL DEMAND SOFTWARE

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Ansys

DS SOLIDWORKS

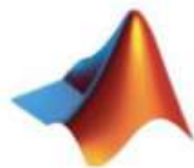
DS SIMULIA
ABAQUS



3DEXPERIENCE™

DS CATIA

 STAR-CCM+



MathWorks®

INDUSTRY ASSOCIATIONS



WIPRO 3D



RENAULT NISSAN



MERCEDEZ BENZ



FESTO

EVENTS CONDUCTED

ANVESHA

ANVESHA'23 serves as a dedicated platform tailored for 12th and Pre-University students. The grand event, Anvesha 2023, provides extensive exposure to participants as they navigate the verdant CHRIST Bangalore Kengeri campus. Drawing students from various backgrounds across Pre-University colleges and schools in Karnataka and neighboring states, the event attracts participants from all corners of the country. Featuring a plethora of technical activities, exhibitions, and challenges, the program also includes activities focused on individual and team skill development.

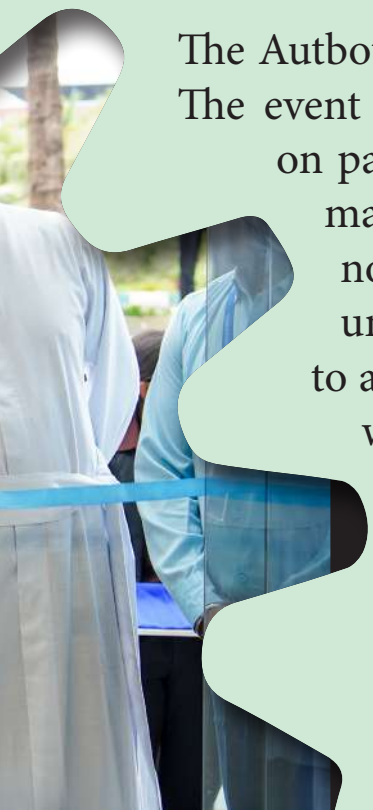
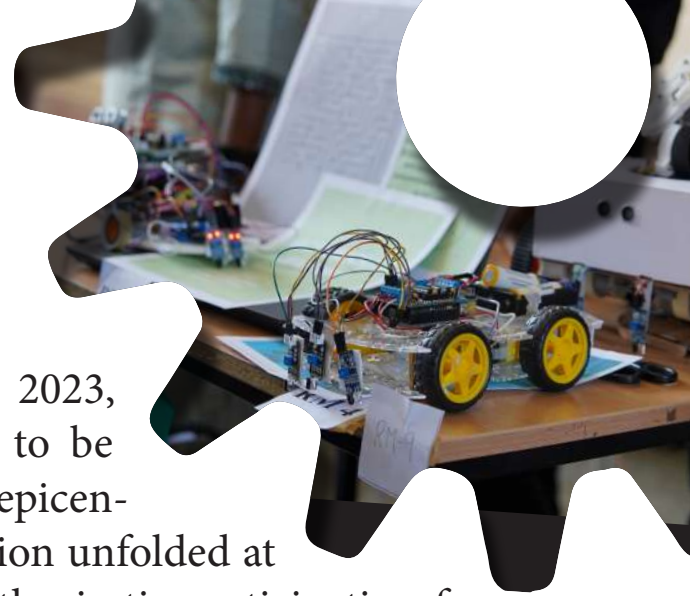


RC CAR (ANVESHA)

On the vibrant morning of September 8, 2023, the Student's Square at Christ (Deemed to be University), Kengeri Campus, became the epicenter of excitement as the RC Car Competition unfolded at 11:00 AM. The event, which garnered enthusiastic participation from Pre-University colleges across Karnataka, showcased the convergence of skill, innovation, and competitive spirit. Against the backdrop of Christ Deemed to be University's dynamic campus, participants maneuvered their remote-controlled cars with precision and agility, captivating on-lookers with thrilling displays of technical prowess. The event not only provided a platform for friendly competition but also fostered a sense of camaraderie among the participants, highlighting the diverse talents within the PU college community.

AUTOBOT (ANVESHA)

The Autbot National Level Competition transpired on August 8, 2023. The event comprised three distinct stages. The initial stage centered on path-following robots, while the subsequent stage focused on maze-solving robots. The third and final stage emphasized innovation and entertainment, challenging students to devise unique enhancements for their robots. Each stage was subjected to a timed format, and cash prizes were awarded to participants who demonstrated the fastest completion times. Noteworthy participating institutions included Hindustan University in Chennai and the Cambridge Institute of Technology in Bangalore.



RC DRONE & EXHIBITION

(ANVESHA)

The highly anticipated Drone Competition at ANVESHA'23 transpired on August 25, 2023. The meticulous preparations for the event were overlooked by the members of the MARMAC ensuring the event went smoothly. The competition, featuring three dynamic teams, was structured around distinct rounds, namely Presentation, Flight and Landing. Each participating team, allocated a 15-minute preparation window, showcased their drone skills throughout the competition. The initial round focused on presentations, succeeded by a demonstration of flying capabilities in the second round. The third and final round required participants' drones to navigate a specified distance and execute precise landings within a marked area. Points were awarded by the judges based on performance metrics.

The triumphant team of the day was Christ University Junior College (Central Campus), securing the coveted 1st place, with PES Junior College claiming the 2nd position.





The winning team was honoured with a cash prize. Subsequent to the event's culmination, a post-event meeting was convened to review the proceedings, address encountered challenges, and formulate strategic plans for future endeavors. This reflective session aimed to enhance the overall execution of subsequent events and maintain the high standards associated with ANVESHHA competitions.

F1 QUIZ

The quiz called “Driven by Data” unfolded on August 25, 2023, in the Amogha room, 3rd Block, 4th Floor, from 11 AM to 1 PM. MARMAC members meticulously set up the systems, commencing preparations at 10 AM. Drawing in an impressive turnout of 11 teams, the quiz kicked off at 11:30 AM, with a unique rule where one member per team raised their hand for a chance to answer. Despite some initial hiccups, the event proceeded smoothly. Following a tie-breaker round for five teams, the winners were announced: Silver Arrows secured the 1st place, Quadrant claimed 2nd place, and Red Bull secured the 3rd place. The event concluded at 1:30 PM, followed by a post-event meeting to reflect on the proceedings and plan for future events.



SUPRA 2023

Thrills and Triumphs: SAE SUPRA INDIA 2023 Unveiled :

In the heart of high-speed aspirations, the Buddh International Circuit in Noida, Uttar Pradesh, played host to the adrenaline-charged SAE SUPRA INDIA event from July 10 to July 13, 2023. Drawing together a powerhouse of intellect and innovation, this spectacle brought 60 teams into the fray, each team a composition of budding talents from diverse universities. The event, sponsored and supported by industry giants such as SAEINDIA, KTM, BMI Pipes, Ansys, SolidWorks, Bosch, IKO, Prajwal Pacovation, Burnout, and Jayachandra Bearings India PVT LTD, became a melting pot of skills, ideas, and spirited competition.

Team Profile - Petrol Heads :

At the forefront of this symphony of machinery and intellect stood the formidable team “Petrol Heads,” led by the astute Captain Siva Santhosh M. This squad, a fusion of technical and non-technical brilliance, featured talents like Aakaash V S, Emil Vincy Koshy, Adeeb Raza, Joshua C Wilson, Tayyab Khan, Rick Martin, Evan Cheriyan, Mohammed Arshath, Paul Afridy Kurbah, Sivaachandra S, Shourya Gupta, Rahul Reddy, Narayana Reddy, Athul Krishna,



Prithvi Raj, Royce Mathew, Jeffry John Jose, Preetam Rajesh, Don Chankoor Jai, Rahul Kuruvilla, and Raphael Kieran Samuel.

EVENT HIGHLIGHTS:

The battleground witnessed the Petrol Heads maneuvering through an array of challenges, from rigorous safety scrutiny and tilt tests to egress and weight checks, noise tests, brake trials, and dynamic tests incorporating acceleration, autocross, and skid pad challenges. The static events proved equally intense, with design, cost, and business presentations pushing the teams to articulate their engineering prowess and strategic thinking.

CHALLENGES FACED:

Amid the crescendo of competition, the team faced an unexpected hurdle when a malfunctioning fuse threatened to halt their progress. Unyielding in their pursuit of excellence, the Petrol Heads tirelessly worked to replace the fuses, only to uncover a fuel shortage issue. Despite the setbacks, the team's resilience shone through, demonstrating a commendable spirit in the face of adversity.

OUTCOME :

The final tally revealed the Petrol Heads securing the 29th position out of the 60 participating teams, a testament to their unwavering commitment and skill. Beyond the numerical ranking, the SAE SUPRA INDIA 2023 event left an indelible mark on the participants, fostering a spirit of innovation, sportsmanship, and collaborative endeavor. The Buddh International Circuit bore witness to not just a competition but a celebration of engineering prowess and the next generation of automotive visionaries. As the dust settled and engines roared one last time, the memories of SAE SUPRA INDIA 2023 lingered as a testament to the relentless pursuit of excellence in the realm of motorsports.



ICETECH

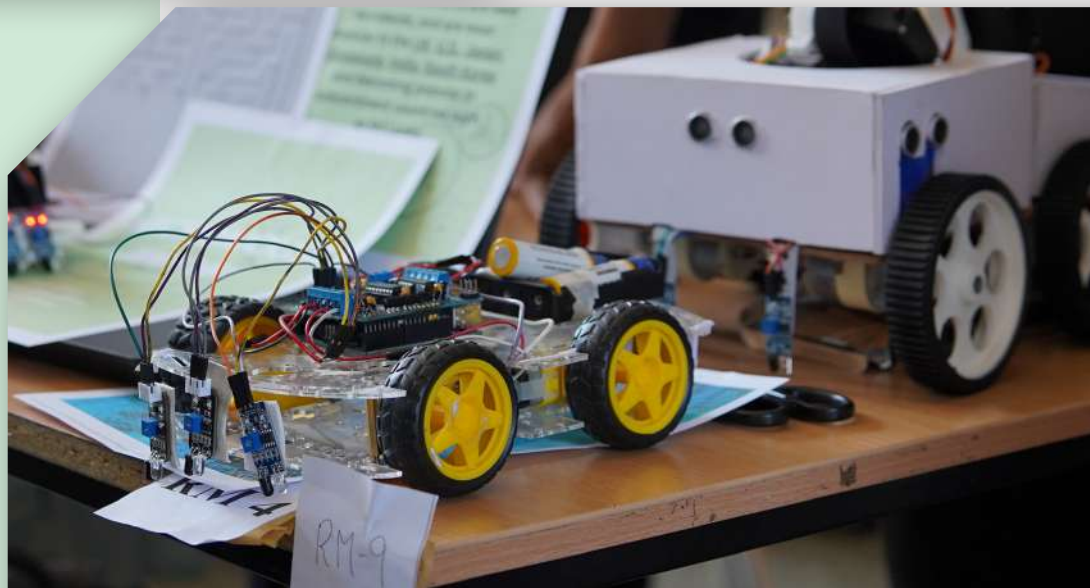
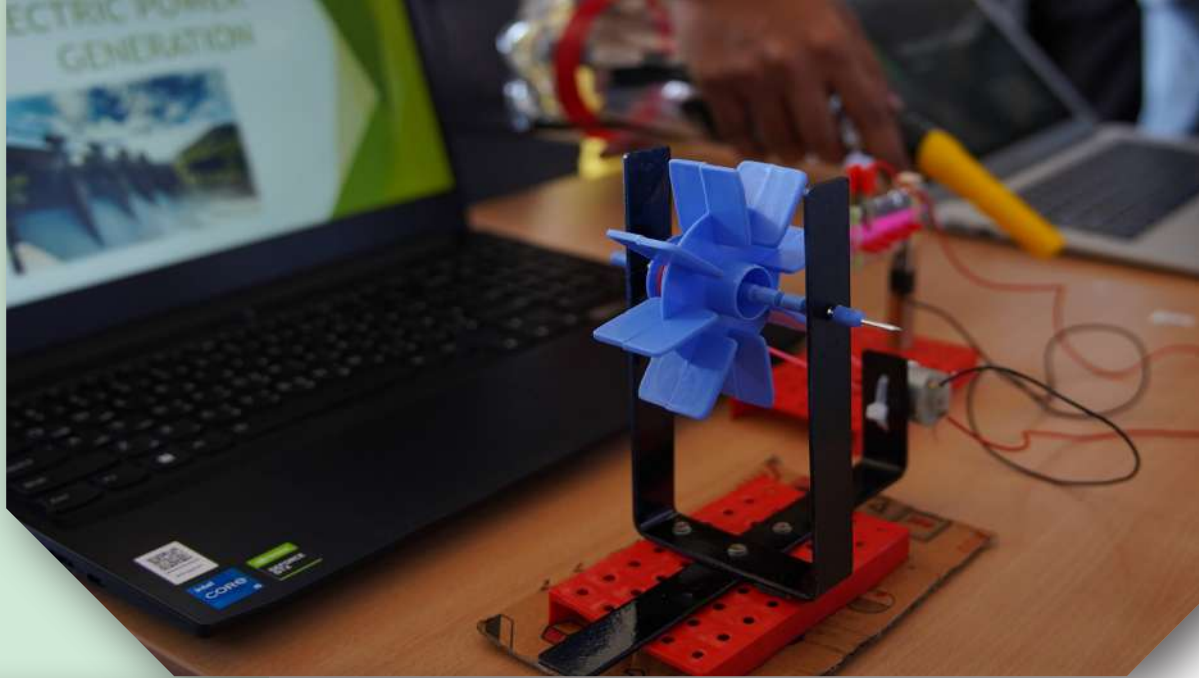
The ICETECH annual exhibition took place on August 8th and 9th, 2023. This event serves as a platform for students to showcase their innovative projects and provides them with an opportunity to present their work to a wider audience.

This exhibition uniquely empowers students by allowing them the autonomy to select their project topics and choose any faculty member as their guide. This approach fosters a diverse array of projects, cultivating an environment conducive to collaborative learning among students. The ensuing variety of projects encourages a rich exchange of ideas and insights, enhancing the overall educational experience.

The recipients of the exhibition awards are as follows:

- Renin Francy and team for RESUSE AND DEBRIS IDENTIFICATION BY UAV
- Tejas BS and team for EXTRACTION OF BIOFUEL USING MEAT WASTE
- Syed Huzaif Ahmed and team for HEXAGONAL CORRUGATED LOUNGE CHAIR
- M Rajeev Reddy and team for FIRE TRUCK
- Tanishka Aggarwal and team for MULTI TERRAIN VEHICLE





FACULTY INTERNATIONAL VISIT



Dr AMRUTA ROUT

Discussed regarding establishment of new lab for Robotics and Mechatronics programme and asked for valuable inputs. Opportunities for developing shared lab or lab in partnership with THWS, Germany. Visited various labs of THWS, Germany (Mobile Robotics Lab, Industrial Robotics Lab, Hydrogen fuel cell lab, C-factory (Cloud based Manufacturing Lab), Power Electronics lab, Bio-medical lab)

Dr HARISH KUMAR M

Department of Mechanical Engineering Birla Institute of Technology & Science, Dubai Campus United Arab Emirates had organized an International Conference on Recent Advances in Materials and Manufacturing Technologies (IMMT-2023) and paper titled “Evaluation of glare laminates characteristics influence through low velocity impact test” was selected for the presentation. There was a total of 104 papers selected for the conference.



ANNUAL SPORTS MEET



FACULTY OUTDOOR MEET



FACULTY ACHIEVEMENTS

PATENTS

1. SMART PESTICIDE SPRAYING DRONE FOR PRECISION AGRICULTURE

Design No : 392496-001

Date : 11/08/2023

- 1. Dr. Amruta Rout**
- 2. Dr. Umesh V**
- 3. Dr. Sasidhar Jangam**
- 4. Mr. Renin Francy T**
- 5. Mr. Faheem A**
- 6. Mr. Tomin Seby**
- 7. Mr. Abdul Hannaan**
- 8. Prof. Bibhuti Bhusan Biswal**

2. SMART FIRE FIGHTING ROBOT WITH AUTO-ADJUSTABLE SPRAYING MECHANISM

Design No : 392495-001

Date : 11/08/2023

- 1. Dr. Amruta Rout**
- 2. Dr. Sasidhar Jangam**
- 3. Mr. Faheem A**
- 4. Mr. Kiran P C**
- 5. Prof. Bibhuti Bhusan Biswal**
- 6. Mr. Renin Francy T**

3. WHEELED MOBILE MEDICAL ROBOT WITH MULTIPLE SENSORS

Design No : 392494-001

Date : 11/08/2023

- 1. Dr. Amruta Rout**
- 2. Dr. Sasidhar Jangam**
- 3. Mr. Renin Francy T**
- 4. Mr Sri Vardhan Raj**
- 5. Dr. Golak Bihari Mahanta**
- 6. Prof. Bibhuti Bhusan Biswal**

4. COMPACT BRAKE CALIPER ASSEMBLY

Design No : 392495-001

Date : 11/08/2023

- 1. Mr. Manjunath U Naik**
- 2. Mr. Naresh H**
- 3. Mr. Kiran K**
- 4. Dr. Sasidhar Jangam**

5. COMPACT AUTOMATED STONE GRINDER

Design No : 392483-001

Date : 10/08/2023

- 1. Mr Hadiya Pritesh Dulabhai**
- 2. Dr Thejaraju R**
- 3. Dr Shiva Kumar S**
- 4. Dr Sasidhar Jangam**

Paper Presented at International Conference

1. Conference Name : 1st International Conference on Sustainable Technologies and Advances in Automation

Date : 16/12/2023

Venue : , Aerospace and Robotics VIT Bhopal University

Title : Automatic weld features identification and weld quality improvement in laser sensor integrated robotic arc welding

Author : Dr Amruta Rout

2. Conference Name : 9th International Conference on Research into Design (ICoRD'23)

Date : 09/03/2023

Venue : Indian Institute of Science, Bangalore

Title : Design and Simulation of a Multi-purpose Adjustable Modular Robot for Precision Agriculture

Author : Dr Amruta Rout

3. Conference Name : SECOND INTERNATIONAL CONFERENCE on Advanced Materials for Health, Energy And Environment (AM-HEE-2023)

Date : 28/02/2023

Venue : JSS Science and Technology University

Title 1 : Fuzzy Modelling and NSGA-II Optimisation Technique in Biodiesel Production

Authors :

a) Dr. Amruta Rout

b) Dr Gurumoorthy S Hebbar

c) Mr Kiran K

Title 2 : Selection of material for the design of an adjustable modular robot for precision agriculture

Authors :

a) Mr Kiran K

b) Dr Ravikumar R

Title 3 : Bioethanol Extraction from Bamboo Biomass by Alkali Pre-Treatment and Enzymatic Saccharification

Authors :

a) Mr Kiran K

b) Dr Ravikumar R

4. Conference Name : RMC 23,4th Rajagiri Management Conference

Date : 03/04/2023

Venue : Rajagiri Business School,Kakkanad

Title 1 : Implementation of Six Sigma to Expedite Student Academic Projects

Title 2 : A Review on PULL System Implementation for the purpose of reducing Work-In-Process (WIP) levels

Author : Mr Anil Melwyn Rego

5. Conference Name : Engineering and design think

Date : 11/02/2023

Venue : CHRIST (Deemed to be University), Kengeri Campus,Bengaluru

Title : AICTE SPONSORED-VALUE ENGINEERING AND DESIGN THINK, National Level

Author : Dr Anil Raj

6. Conference Name : International Symposium on Lightweight and Sustainable Polymeric Materials – LSPM 23

Date : 17/02/2023

Venue : King Mongkut's University of Technology North Bangkok, Thailand

Title : Mechanical and wear behaviour of halloysite nano-

tubes filled silk/basalt hybrid composites using response surface methodology

Authors :

- a) Dr Francis Xavier L**
- b) Dr Darshan S M**
- c) Dr Shijo Thomas**

7. Conference Name : Recent Advances in Modeling and Analysis of Thermal and Energy Systems (RAMATES-2023)

Date : 10/05/2023

Venue : National Institute of Technology Karnataka, Surathkal, India.

Title : Conversion of Waste Lubricating Engine Oil into Liquid Fuel Compounds and Their Characterization

Authors :

- a) Mr Kiran K**
- b) Dr Ravikumar R**

8. Conference Name : International Conference on Recent Trends in Aerospace Technology - INCRTAT2023

Date : 12/06/2023

Venue : School of Aeronautical Engineering, Bharath Institute of Higher Education and Research, Chennai, INDIA.

Title : Sandwich Composites And Its Applications- A Review

Author :

Dr Ravichandran G

9. Conference Name : First International Conference on Advancements in Materials, Manufacturing and Automation (AMMA-2023)

Date : 07/04/2023

Venue : Department of Mechanical Engineering, Amrita School of Engineering, Chennai, Tamilnadu, India

Title : Synthesis of Molybdenum disulfide - (MoS₂) Nanoparticles by Sol-gel Method and its Characterization.

Author :

Dr Ravichandran G

10. Conference Name : 5 th International Conference on "Recent Innovations in Science & Technology (RIST 2023)

Date : 07/04/2023

Venue : Holy Grace Academy of Engineering Mala, Thrissur, Kerala, India

Title 1 : Effects of Nanoparticle and Fiber Reinforcement on High-Performance Magnesium Matrix Composite Using Novel Compoasting Method.

Title 2 : Comparative Study on The Effect of Fabrication Methods of Aluminium Alloy Reinforced With Nano-Particles by Powder Metallurgy and Compo-Casting.

Author :

Dr Shijo Thomas

Book Publication Details

1. Dr P Pal Pandian

Title : 3D Printing in Polymer Composite

Date : 30th march 2023

BOOK NAME: 3D Printing in Polymer Composite

2. Dr Amruta Rout

Title : Design and Simulation of a Multi-purpose Adjustable Modular Robot for Precision Agriculture

Date : 30th july 2023

BOOK NAME: Design in the Era of Industry 4.0

PUBLICATIONS

1.G. S. Pradeep Kumar, Sampreeth Sunkad, R. Jogeshwar, R. Keshavamurthy, Vijay Tambrallimath, Sasidhar Jangam, Dadapeer Basheer, "The Influence of Bio, Physical, and Mechanical Attrition in Surface Engineering 2022", *Advances in Materials Science and Engineering*, ISSN: 1687-8434, vol:2023(1), page:1-10, Feb 2023

2.Prabhakar Sharma , Dhinesh Balasubramanian, Chu Thanh Khai, Inbanaathan Papla Venugopal, Mansoor Alruqi , Femilda Josephin JS , Ankit Sonthalia , Edwin Geo Varuvel , Esmail Khalife , R. Ravikumar , Makatar Wae-Hayee , "Enhancing the performance of renewable bio-gas powered engine employing oxyhydrogen: Optimization with desirability and D-optimal design", *Fuel*, ISSN: 0016-2361, vol:341, page:1-12, Feb:2023.

3.Mohankumar HR, Maha Gundappa M Benal, Pradeepkumar GS, Vijay Tambrallimath, Keshavamurthy Ramaiah, TM Yunus Khan, Javed Khan Bhutto, Mohammed Azam Ali, "Effect of Short Glass Fiber Addition on Flexural and Impact Behavior of 3D Printed Polymer Composites", *ACS OMEGA*, vol:44, page:9212-9220, March 2023

4.Debabrata Barik , Bhaskor Jyoti Bora , Prabhakar Sharma , Bhaskar Jyoti Medhi , Dhinesh Balasubramanian , R.L. Krupakaran , Ravikumar Ramegowda , Kiran Kavalli , Femilda Josephin JS , M. Vikneswaran , Edwin Geo Varuvel , "Exploration of the dual fuel combustion mode on a direct injection diesel engine powered with hydrogen as gaseous fuel in port injection and diesel-diethyl ether blend as liquid fuel", *International journal of hydrogen energy*, page:1-13, June 2023

5.Parthasarathy Murugesan , P.V. Elumalai , Dhinesh Balasubramanian , S. Padmanabhan , N. Murugunachippan , Asif Afzal , Prabhakar Sharma , K. Kiran , JS Femilda Josephin , Edwin Geo Varuvel, Thanh Tuan Le, Thanh Hai Truong, "Exploration of low heat rejection engine characteristics powered with carbon nanotubes-added waste plastic pyrolysis oil" , *Process Safety and Environmental Protection*, vol:176(2023), 1101-1119, June 2023

RESOURCE PERSON

1. Dr P Pal Pandian

Title of the Event : Tech Talk on Emerging Technologies and Opportunities for Engineering Graduates

**Venue : Training and Placement Cell, PSNA
College of Engineering and Technology Tamilnadu**

Date : 16/03/23

Title of the Event : 2nd National Level Workshop on Curriculum framework 2023

Venue : Institute for Academic Excellence (IAE), Hyderabad

Date : 18/03/2023

Title of the Event : Research Methodology and Publication Ethics

Venue: BMS College of Engineering Basavanagudi

Date : 18/03/2023

Title of the Event : “Transforming Research into Project and Product”

**Venue : RMK College of Engineering and
Technology, Chennai 601206**

Date : 21/07/2023

Title of the Event : “Innovation and Entrepreneurship for Budding Engineering

Venue : Rajarajeswari College of Engineering, Bangalore

Date : 16/09/2023

2. Dr Sashidhar Jangam & Dr Thejaraju R

Title of the Event : Safeguarding Innovation: Exploring Intellectual Property Rights

Venue : BGS Institute of Technology, Bangalore

Date : 17/08/2023

INDUSTRIAL VISIT



**CSIR- NAL
Centre For Civil Aircraft Design
And Development**

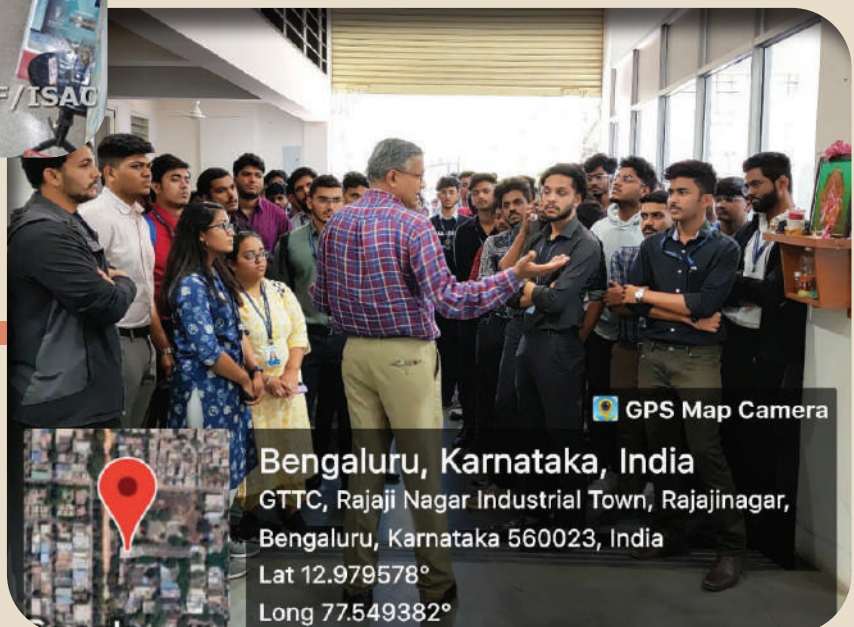
**G20
India Energy Week VISIT**



**URSC
U R Rao Satellite Centre**



**GTTC
(Government Tool Room and
Training Centre)**



GPS Map Camera

Bengaluru, Karnataka, India
GTTC, Rajaji Nagar Industrial Town, Rajajinagar,
Bengaluru, Karnataka 560023, India
Lat 12.979578°
Long 77.549382°



AWARDS

&

ACHIEVEMENTS

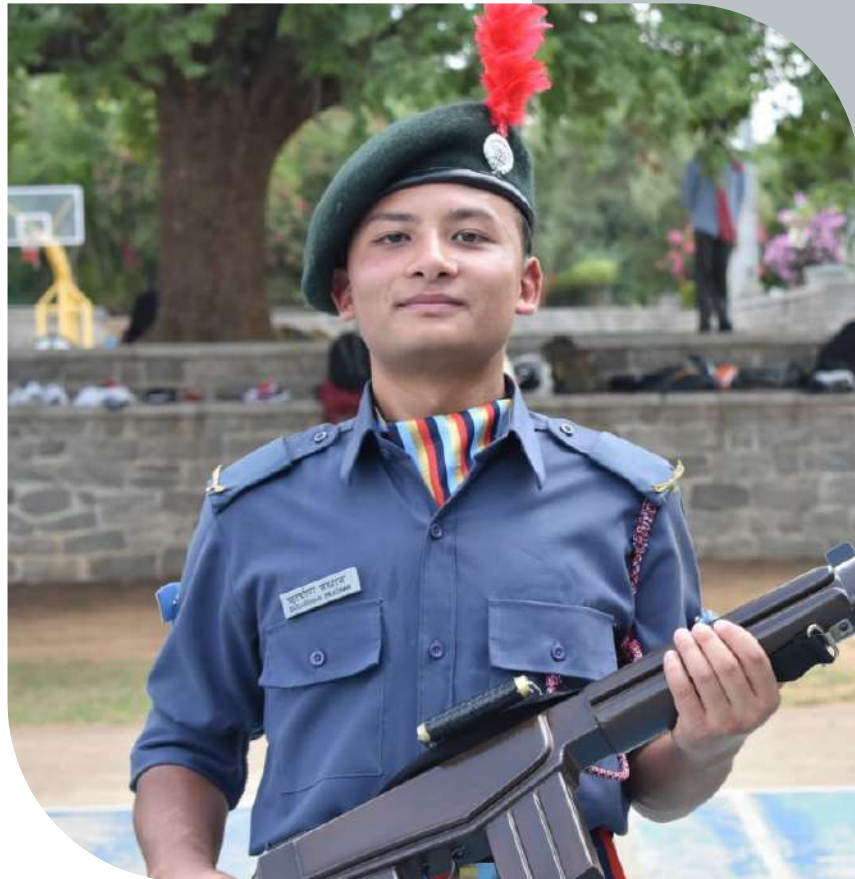
ALUMINI ACHIEVEMENT

Sudarshan Pradhan

Date of Birth : 21 Nov 2001

Date : 05 Oct 2023

**Joined OFFICERS TRAINING ACADEMY, CHENNAI
SHORT SERVICE COMMISSION (TECHNICAL) (MEN)
- 61st COURSE**



Geou Akshil

The joy is immense and unexplainable sharing this victory. I am very humbled by the sweep away of a victory in the Edinburgh Napier Student Association elections as the President for the next academic year starting from Summer. This is the first job I would be picking up in Scotland, a professional paid job for a year as the student leader representing over 20000 students.



Major Sajal Palit

Major Sajal Palit, It is with immense pride and joy that we extend our heartfelt congratulations to you on reaching yet another remarkable milestone in your military journey - the well-deserved promotion to the rank of Major, as of April 12, 2023.



Miss. Lizabeth Tomy

Heartiest congratulations on your exceptional performance in the Malayalam movie “Maharani”. We are immensely proud to acknowledge that you are an alumna of the Mechanical Department. Your journey from the mechanical realm to the silver screen is truly inspiring.



STUDENT ACHIEVEMENT

AREEN BHATIA

The involvement and commitment of one of your second-year cadets, Regt No KA/22/SD/F/100357 Cdt Areen Bhatia deserves a special mention . Unit technicians were assisted in a task by Cdt Areen Bhatia Banking upon the cadet's 'out of box' thinking skills and technical acumen, issues pertaining to CDI were addressed. Further the issue of excessive rpm drop in the engine under certain conditions was identified and rectified.



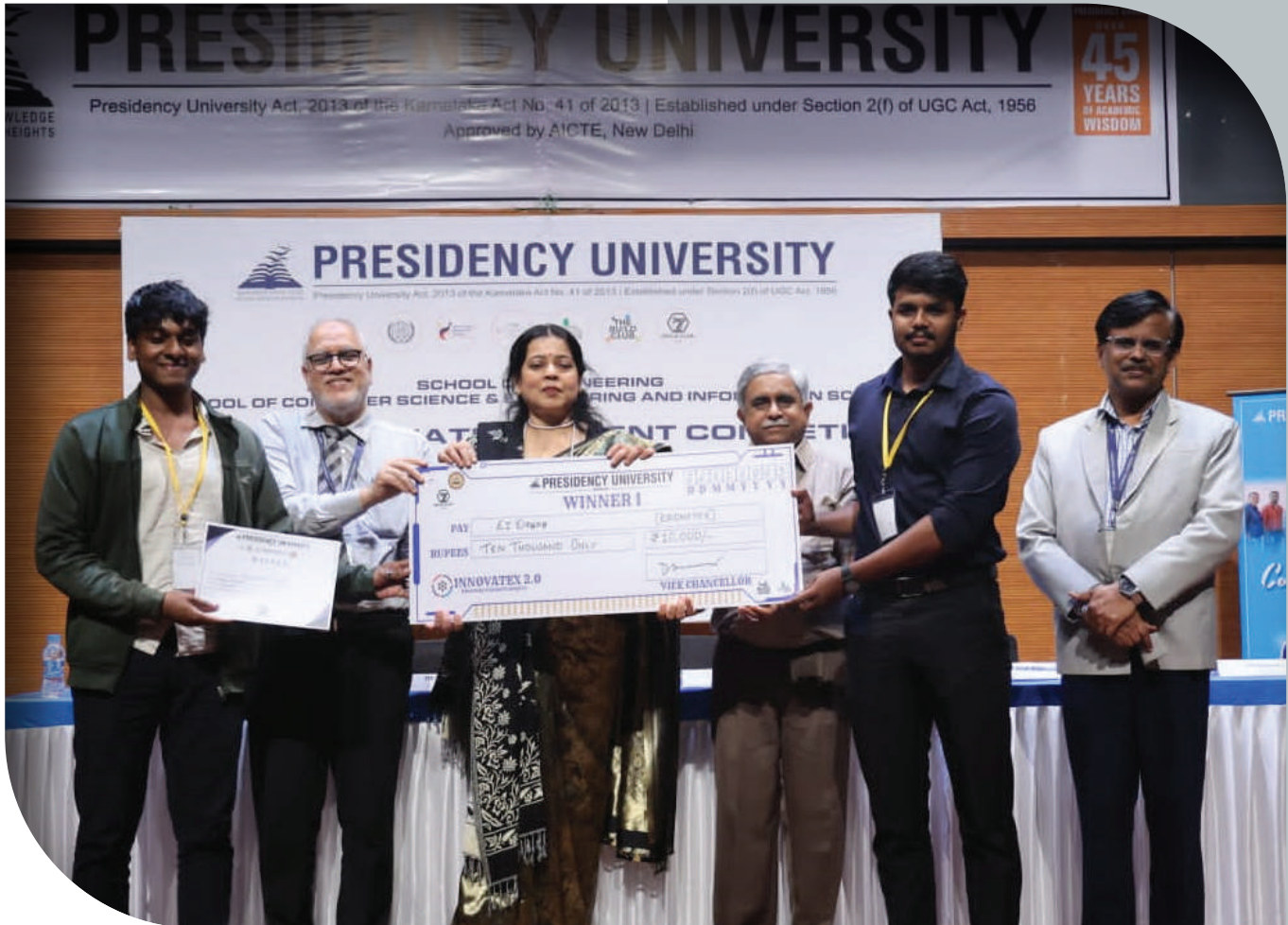
JIS GEORGE MATHEW

BEST AIR CONTINGENT TROPHY

(V sem Robotics and Mechatronics Engineering) We Are So Proud Of You! for being selected to represent Karnataka & Goa in AIVSC (All India Vayu Sainik Camp) 2023 Bangalore

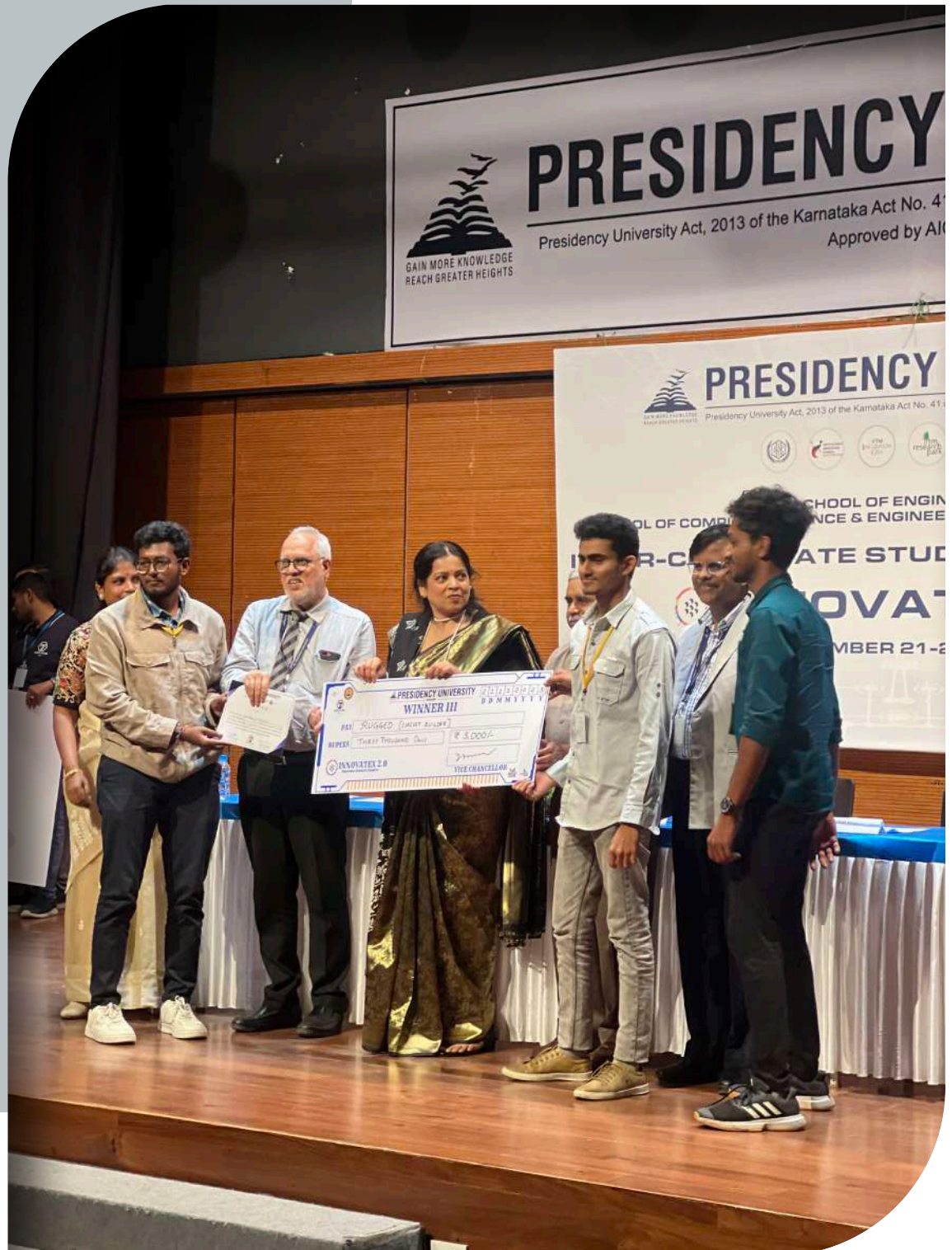


CONGRATULATIONS TO OUR STUDENTS



**For Winning 1st Prize in Dronetex, in INNOVATEX 2.0 at
PRESIDENCY UNIVERSITY, Bangalore .Students Name:
(6BTRAM) Sam Philip, Shaun**

**For Winning 3rd Prize in Circuit Building, in INNOVATEX 2.0 at PRESIDENCY UNIVERSITY, Bangalore
Students Name: (8BTRAM) Venu Kumar Reddy,
Md Arshath, Alen Mathew, Athul Krishna.**



KSCST BEST PROJECT OF THE YEAR

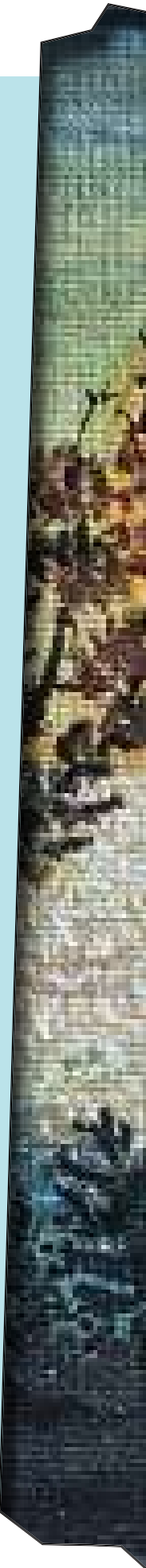


On winning “Best Project of the Year 2022-23” award under the Mechanical Engineering category during the 46th series of the Student Projects Programme State Level Annual Seminar and Exhibition hosted by the Karnataka State Council of Science & Technology (KSCST) held at Alva’s Institute of Technology, Moodbidri on 11 and 12 of August 2023.

A very big congratulations to all the achievers. Their hard work and perseverance should be applauded. We wish you the best for next level.



FACULTIES CORNER





- Dr Gurumoorthy S Hebbar
HOD Mechanical Engineering



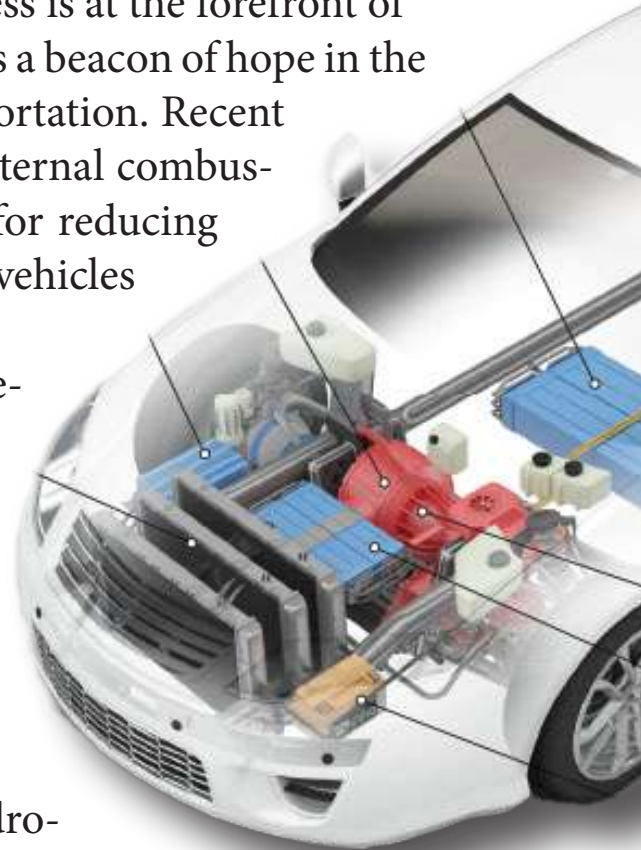
Embracing the Future: Hydrogen-Powered IC Engines Revolutionize Automotive Sustainability

In a world where environmental consciousness is at the forefront of technological innovation, hydrogen emerges as a beacon of hope in the quest for cleaner and more sustainable transportation. Recent advances in utilizing hydrogen as a fuel for internal combustion (IC) engines have opened new avenues for reducing carbon emissions and transforming existing vehicles into eco-friendly marvels.

Hydrogen, known for its abundance and zero-emission qualities in fuel cells, has now found its way into traditional internal combustion engines. Unlike conventional gasoline or diesel, hydrogen combustion only produces water vapour and heat as byproducts, making it an ideal candidate for reducing the carbon footprint of existing vehicles.

One of the critical breakthroughs in hydrogen-powered IC engines lies in retrofitting existing vehicles with minimal modifications. This innovation addresses the environmental concerns associated with conventional engines and provides a cost-effective solution for the transition to cleaner transportation. Retrofitting involves adapting the engine to burn hydrogen alongside gasoline, offering a smooth and gradual shift toward a greener future.

The retrofitting process typically includes fuel delivery, ignition, and engine control unit (ECU) modifications. Engineers and researchers have successfully developed retrofit kits that can be seamlessly integrated into various



vehicle models, ensuring a hassle-free conversion process. This adaptability ensures that the benefits of hydrogen-powered IC engines are not limited to new vehicles, allowing the existing automotive fleet to contribute to environmental conservation.

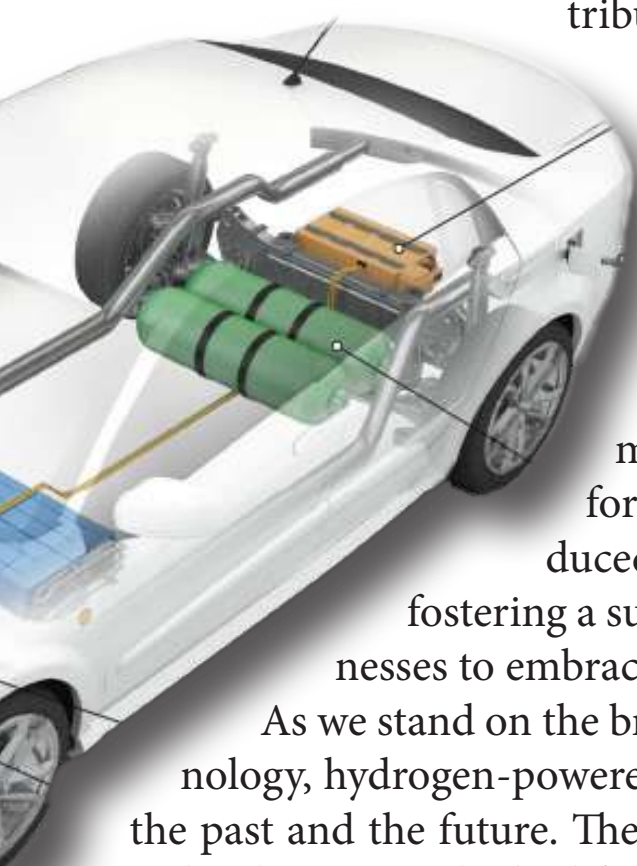
One notable advantage of hydrogen retrofitting is the immediate reduction in greenhouse gas emissions. As hydrogen burns more cleanly than traditional fuels, the retrofit vehicles exhibit significantly lower carbon emissions, contributing to a healthier environment and combating climate change.

Furthermore, hydrogen-powered IC engines maintain traditional engines' performance and efficiency standards, ensuring that drivers do not compromise on power or range.

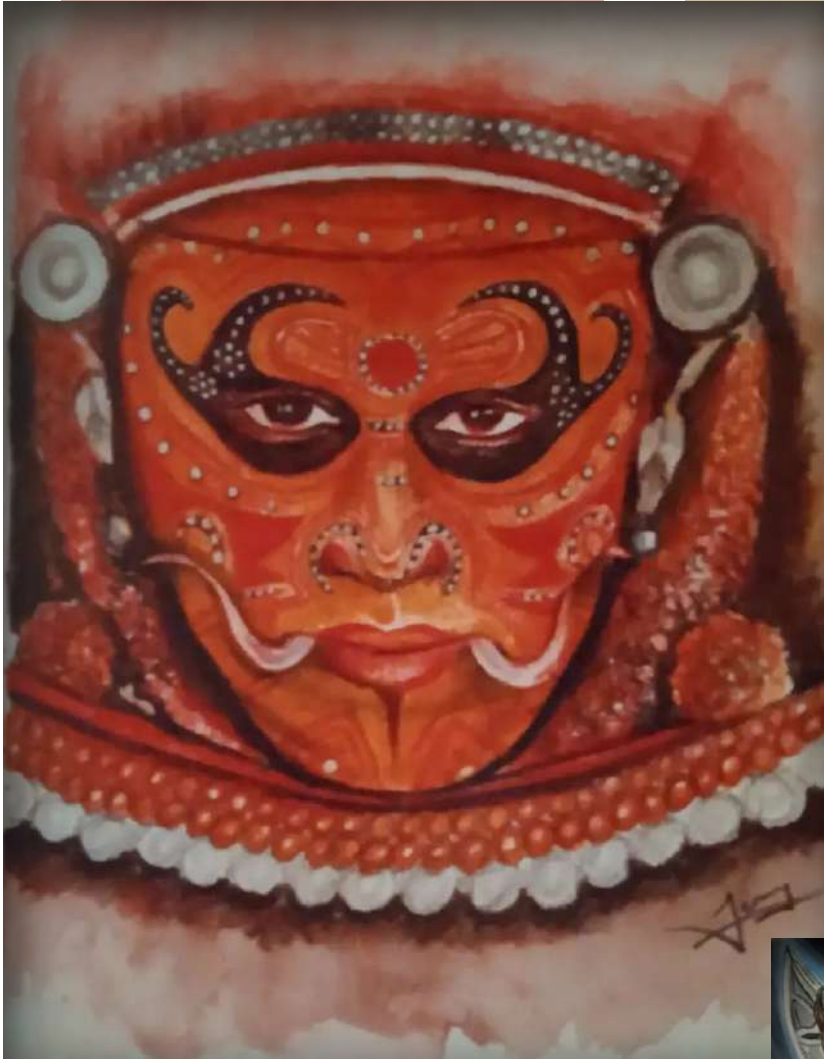
Governments and automotive manufacturers worldwide recognise hydrogen's potential as a mainstream fuel source. Incentives and subsidies for hydrogen retrofitting projects are being introduced to accelerate the adoption of this technology, fostering a supportive environment for consumers and businesses to embrace sustainable transportation solutions.

As we stand on the brink of a transformative era in automotive technology, hydrogen-powered IC engines offer a promising bridge between the past and the future. The retrofitting of existing vehicles with hydrogen technology extends the lifespan of our current automotive fleet and paves the way for a more sustainable tomorrow. As more research and development efforts are directed toward perfecting hydrogen-powered IC engines, we can anticipate a greener, cleaner, and more eco-conscious automotive landscape in the future.

Mr Kiran K
Assistant Professor



STUDENTS CORNER



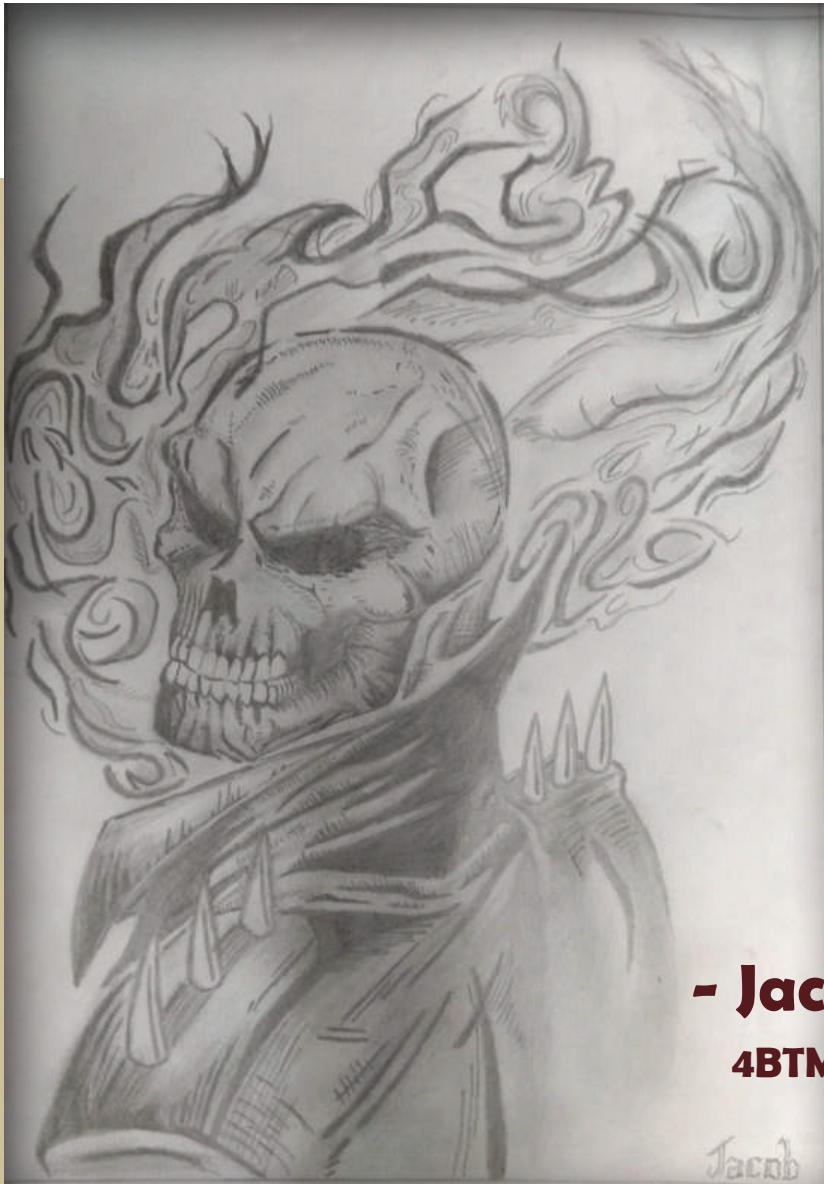


- Jerry V joy
4BTME



Jacob

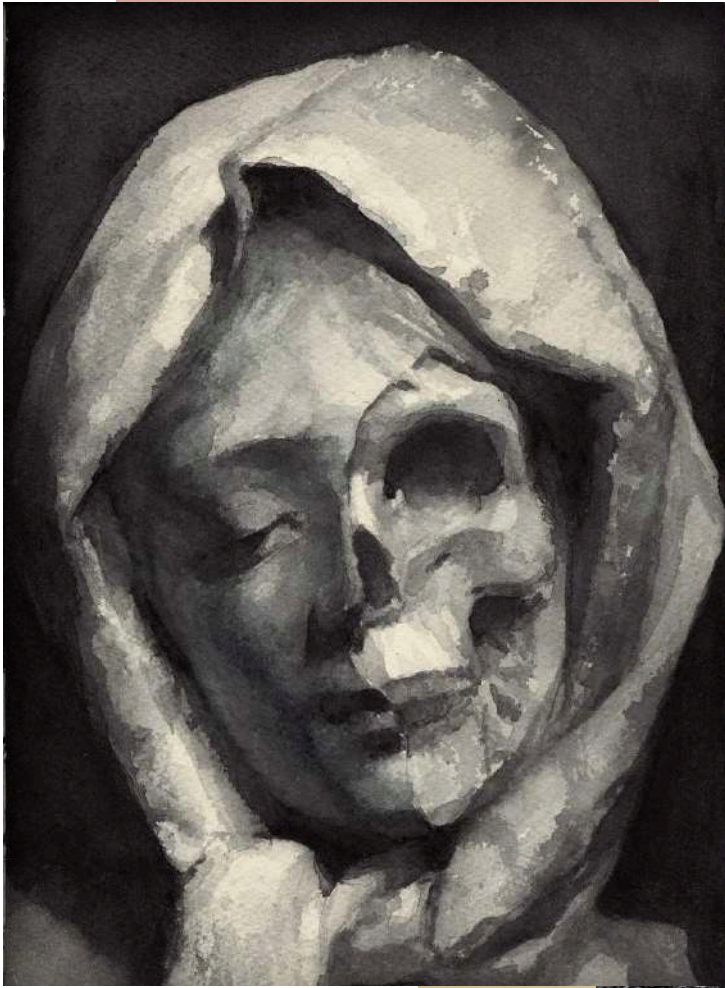




- Jacob Vaidyan
4BTME

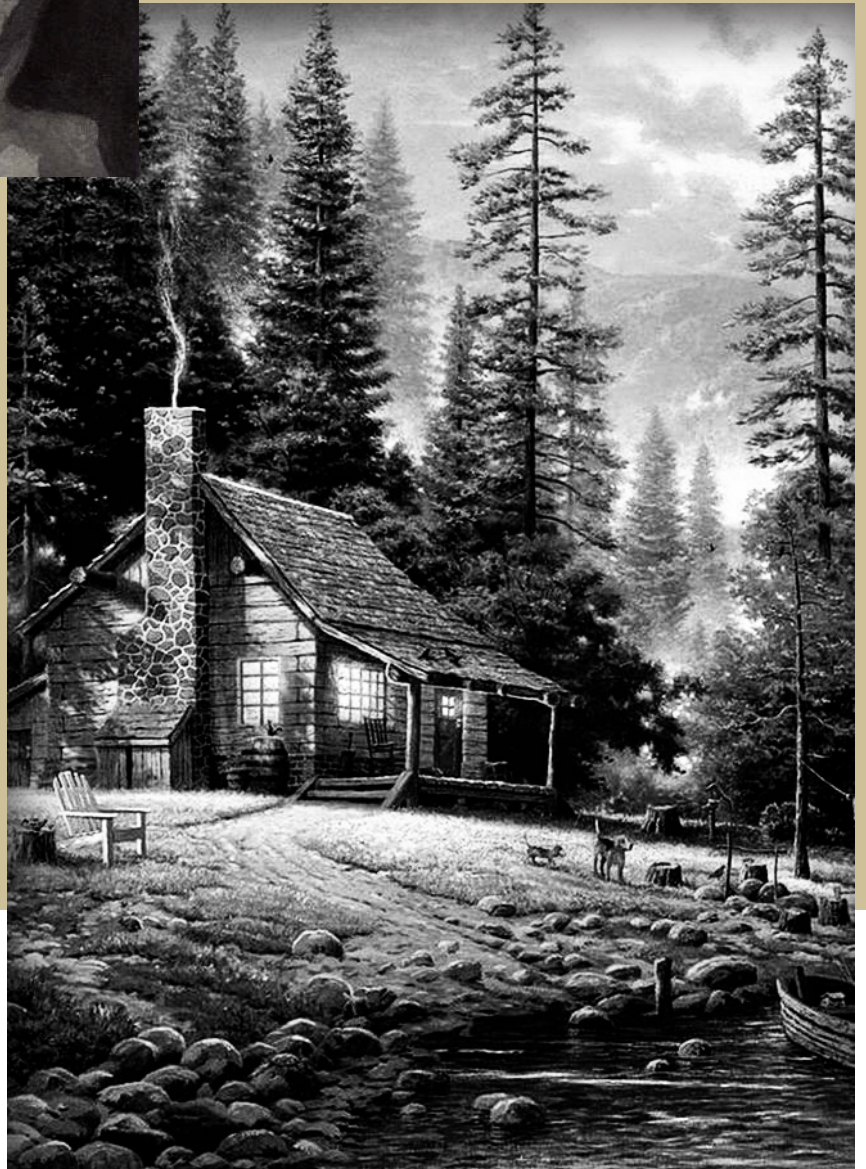


- Martin Dsouza
1st year AE



- Kingshuk Maji

6BTRM





The Largest Image of the Andromeda Galaxy Ever Taken

If you've ever been to an area where the night sky is clearly visible and could distinguish between stars and constellations, you've almost certainly seen the Andromeda galaxy. It is the closest large galaxy to the Milky Way. And for a long time, astronomers thought of the Andromeda galaxy to be a part of the Milky Way as a nebula. In the 1920s, the astronomer Edwin Powell Hubble determined successfully that Andromeda was indeed a large galaxy with a diameter of about 200,000 light years. This galaxy finds its mention in texts as early as 965 CE from Islamic astronomer Al-Sufi. When you go for a camping trip or sit down on your countryside terrace on a clear night, you can easily star hop from Cassiopeia constellation to find the Andromeda galaxy. Similar ways have been used by a lot of photographers to capture the Andromeda galaxy through their lenses. Recently, a photographer broke Reddit by claiming to have captured the largest picture ever of the Andromeda galaxy. He claims that it is significant to the level of what telescopes like the Hubble space telescope, James Webb space telescope and many more have captured. Let's talk about this single click and understand how it has become so important over the internet.

The Artist's Perspective

Source / Andromeda Galaxy in the night sky

As a photographer, what's better than capturing something that is still beyond human comprehension? The photographer who has captured the largest ever picture of the Andromeda galaxy shared a similar perspective on Reddit. The tale of capturing this image started last year when the user had an idea of capturing an image that would be the best of his limits. So he thought of capturing the image of the Andromeda galaxy at an extremely

high resolution. Capturing an image that completely covered the length of Andromeda galaxy is a task that requires very long exposures. The first attempt of capturing the image was a waste since the project does require great quality lenses, precision and a high editing knowledge. Over 90 hours of the exposure time went into waste with no proper image captured.

This year, after learning the gradient modeling method and coming back with a lot more experience, the user spent 159 total hours under the night sky with 25 separate panels to capture the images and three filters to get all the colors. The result of such hard work is the largest ever image captured of the Andromeda galaxy which is about 1.03 Gigapixels in size. This image has such high resolutions that you can even focus on the tiniest of the stars and distinguish them amongst the others.

What Is This Amazing Feat?

The world is stunned by this capture not because it has the highest resolutions ever for an image of Andromeda galaxy. That title is still with the telescopes like Hubble and James Webb. But the reason why this one capture has gotten such attention is that it is the largest and most clear picture of the complete length of Andromeda galaxy. The Hubble space telescope and the others have only captured high resolution images of sections of the Andromeda galaxy. While the image captured by this user is twice the size of the last world record attempt by Robert Gendler in 2008. The image contains 1,033,218,000 total pixels in the edited version while the raw file had over a billion pixels with the file size of over 6 gigabytes. The image is truly a wonder for every person who looks at it since every little detail of the Andromeda galaxy visible from the Earth is clear in this image. It was captured from SRO and is by far marvelous for human comprehension.

For those interested in space and with a fetish to learn more about the galaxies and the whole universe, images like this one are always going to blow your mind. The effort put into capturing the largest ever image of the Andromeda galaxy is truly tremendous.

- Tushar Vishawakarma
4BTME

PhD COMPLETION

Heartfelt Congratulations for Successful Completion of Your Doctorate. We wish you all the very best luck with future endeavours.



Dr GOWTHAM SANJAI S



Dr UMESH V



Dr HARISH KUMAR M



PLACEMENTS

2022 - 23



S SARAN MONEESH
Mobelium



DALTON PINTO
KOCH



SOMASHEKHAR G SWAMI
Ingersoll Rand



GEORGE JOSEPH CHERIAN
TEACHNOOK/ JCI



RUTHVIK V
TEACHNOOK



GONDROTHU TATA ATCHUTH
RAM
TEACHNOOK



CLARITUS D SOUZA
SBD AUTOMOTIVE/ Royal Enfield



AVEZ MOHIUDDIN
TEACHNOOK



RYAN SAGAAI GABRIEL
TEACHNOOK/ JCI



ALTONN S A
TEACHNOOK



NEHAL VARGHESE JACOB
OPTMYZR



MUHAMMAD ASHHAQ P
DAIMLER



KAUSHIK NAYAK
JCI



VIVER JAISWAL
COGNIZANT



MEIT WORAH
Royal Enfield



IJANAGANI BHARGAVA
COGNIZANT/ TEACHNOOK



HARSHIT EKKA
CAPGEMINI



AQIB RIZAL THENNADAN
QUEST GLOBAL



BHARATH K
Sun Mobility



SATHWIK SASANK REDDY Y C
Sun Mobility



ABID ALI PUTHIYAVEETIL
Sun Mobility



SOURABH S MOILY
Royal Enfield



FAUZAN AHMAD
Royal Enfield

2023 - 24

TRANE TECHNOLOGIES



Hari Prasad



Miriam Mathew

DAIMLER



Adnan Khan



Joshua C Wilson

BOSCH



Vamshi Bachineni

SAFRAN



Ramkannan Ask

HYUNDAI



Aaron Joseph



Nicholas Dominic Antonio

WAVE MECHANICS



Shashank S



Alen Mathew



Antony Davis



Sivaachandru S



Siddavattam Narayana Reddy

ROYAL ENFIELD



Adeeb Raza



Akaash V S





B.TECH IN MECHANICAL ENGINEERING

Program Educational Objectives (PEOs)

1. Demonstrate technical competence in applying mechanical engineering principles to develop solutions using contemporary tools to solve problems in core and multi-disciplinary domains.
2. Continuously upgrade knowledge and skills in current and emerging technologies through self-learning, research and pursuit of specialization.
3. Work with ethical values in multi-disciplinary and diverse teams exhibiting leadership in contributing to the societal needs and environment.

Program Specific Outcome (PSOs)

1. Possess the knowledge and skills to choose appropriate materials and manufacturing methodologies to produce components and assemblies with built-in quality and cost effectiveness.
2. Use of conventional and contemporary tools for the design and analysis of structural and thermal systems.
3. Deploy efficient, clean and green technologies in energy conversion for a safe and sustainable environment.

B.TECH IN AUTOMOBILE ENGINEERING

Program Educational Objectives (PEOs)

1. Apply basic and engineering science knowledge to provide workable Solutions to the various automotive applications.
2. Demonstrate professional competence through continuous learning, and acquire professional skills in the field of Automobile engineering to develop solutions to the complex problems.
3. Demonstrate the characteristics of social responsibility, professional ethics and continuous learning for the successful professional career.

Program Specific Outcome (PSOs)

1. Apply the concepts of Automobile engineering to design and build vehicles for different applications.
2. Disassemble and assemble vehicles such as two and three-wheeler and also Light Duty, Heavy Duty Trucks.

B.TECH IN ROBOTICS AND MECHATRONICS

Program Educational Objectives (PEOs)

1. Use the domain knowledge to evolve solutions for the challenges arising out of applications of Robotics and Mechatronics.
2. Work in core and interdisciplinary project teams, pursue specialization and research.
3. Design and develop engineering systems with ethical professionalism for the benefit of the industrial world and the society.

Program Specific Outcome (PSOs)

1. Should have the ability to select and apply appropriate techniques and programming tools to develop safe and efficient Robotic and Mechatronic systems for the specific industrial requirements.
2. Should have the ability to analyse and improve the performance of manufacturing process by implementing robotics and automation.

CONTACT US

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