



Dr. Y.C. James Yen Govt Polytechnic, Kuppam



Jignasa

-The Quest

Innovation Chronicles

Discover the Year's Highlights: From Workshops to Industry Insights



What Defined the Engineering Scene in Year 2022-23?





Dr. Y.C. James Yen Govt Polytechnic, Kuppam



Jignasa

-The Quest

Website: <https://ycjgovtpolykuppam.ac.in/>

Phone: 08570 255444

Email: rp.kupam101@gmail.com

PATRON:

Dr.M.Jagannadha Rao
Principal



CO-ORDINATOR / EDITOR

Dr.Syed Hussain Mian
Senior Lecturer in English
& I/c HGS

SUB-EDITOR

Sri.K.Narasimhulu
Lecturer in EEE

EDITORIAL COMMITTEE

Sri.K.Murth
Lecturer in ME

Sri.S.Vijay Kumar
Lecturer in ME

MAGAZINE DESIGNING & TECHNICAL SUPPORT

Mr.J.Panendra Rao
III CME
PIN: 21101-CM-011

From the Principal's Desk...

Knowledge has no boundaries, so also human endeavours. Human civilization has been growing since times immemorial. It will continue further in future too. The ultimate force that propels "innovation" is "The Quest" and the insatiable appetite of 'inquisitiveness.' This urge to invent the uninvented, discover and unravel the concealed or hidden, put to use the unused is what makes a difference between the highly evolved humans and the rest of the creatures.

In this context, I am delighted to bring forth before you our College's Magazine entitled, "JIGNASA – THE QUEST".

It contains information of several interesting, innovative Projects, Workshops, Seminars, Paper Presentations, Industrial Visits that our institute conducted as well as about those in which the students of our college participated outside our institute.

I would like to extend my heartfelt thanks to Smt.C.Nagarani garu, the Commissioner of Technical Education, Sri.V.Padma Rao garu, the Joint Director of Technical Education, Sri.A.Nirmal Kumar Priya garu, the Regional Joint Director, SVU Region for their persistent efforts to promote the cause of Technical Education.

I would also like to extend my thanks to the Heads of various sections and the Staff members who were instrumental in conducting Workshops/Seminars and motivating the students to prepare innovative projects. I would also like to extend my heartfelt thanks to the Magazine Committee for coordinating and bringing forth this Magazine.

I would like to appreciate the student community for their participation in Technical events to showcase their creative ideas. I wish them to sustain this "Quest" in future too to embark on a mission of technical brilliance.

Snippets

In our latest saga, we delve into a myriad of groundbreaking events that showcase the ingenuity and impact of technology and engineering.

- **Unveiling the Mysteries of the Atmosphere:** Students embarked on an enlightening journey through atmospheric science during a riveting visit to the National Atmospheric Research Laboratory, igniting their passion for scientific exploration and discovery.
- **Heroes Forged in the Flames:** The Workshop on Firefighting brought together students from the Department of Electrical & Electronics Engineering and the Department of Computer Engineering, empowering them with essential firefighting skills and instilling the confidence to tackle emergencies head-on.
- **Saving Lives, One Beat at a Time:** The CPR Workshop equipped participants with life-saving techniques, transforming them into CPR superheroes under the guidance of medical experts, Sri Dr. Irshad Ahmed and Sri Dr. Chaithanya.
- **Health Chain: A Revolution in Healthcare Access:** Kranthi Kumar and Hemanth Goud spearheaded the Health Chain initiative, leveraging IoT and blockchain technologies to ensure secure health data management and streamline medical services.
- **Driving Towards Sustainability:** Chandanapriya and M.S. Monisha shed light on the environmental benefits of electric vehicles, advocating for their adoption as a sustainable choice for transportation.
- **Eyes Wide Open: Detecting Driver Drowsiness:** Bhuvandheeraj K N and Tharun Dasari's project focused on developing a vision-based solution for detecting driver drowsiness, and enhancing road safety through innovative technology.
- **Revolutionizing Manufacturing: The Rise of 3D Printing:** Mahesh Babu and V. Sadik Basha explored the transformative potential of 3D printing in manufacturing, highlighting its applications, advantages, and economic implications.

Tech Chronicles: Inspiring Tales of Innovation and Exploration

- **Navigating Career Paths:** Shankar Loganathan's webinar on career guidance provided invaluable insights and practical advice to help participants navigate the complexities of the job market and chart their course toward a fulfilling career.
- **Celebrating Innovation at Regional and State-Level Tech Fests:** From the Regional Polytech Fest to the State-Level Polytech Fest, students showcased their talent and creativity, earning recognition for projects like the "Low-Cost Ventilator with Multiple Features."
- **Harnessing Solar and LED Technologies:** The two-day hands-on workshop explored the realms of solar power and LED technology, offering participants practical knowledge and skills to unlock the potential of renewable energy sources and illuminate the path to a more sustainable future.
- **Exploring Hydroelectric Power Generation:** The industrial tour to Sathanur Dam Power Station provided participants with firsthand insights into hydroelectricity, showcasing its role in producing clean and sustainable energy.

This saga is a testament to the transformative power of technology and innovation, shaping a brighter and more sustainable future for future generations.

Department of Computer Engineering

Journey into the Atmosphere: Exploring NARL's Scientific Marvels

Embarking on an educational voyage, students recently explored the captivating world of atmospheric science during a thrilling visit to the National Atmospheric Research Laboratory (NARL) on March 10th. As they journeyed through NARL's facilities, students marvelled at the innovative tools and technologies utilized by scientists to decipher the complexities of Earth's atmosphere. From high-tech weather monitoring systems to fascinating experiments, the visit provided a first-hand glimpse into the exciting realm of atmospheric research. This immersive experience not only enriched students' understanding of atmospheric dynamics but also ignited their passion for scientific exploration and discovery.



Heroes in Action: Firefighting and CPR Workshop 2023

Day 1: Unleash Your Inner Firefighter (27th March, 2023)

Gear up for an adrenaline-charged experience as the Department of Electrical & Electronics Engineering and the Department of Computer Engineering come together to present an unforgettable Workshop on Firefighting. This isn't your ordinary training session; it's a thrilling odyssey that will immerse you in the heart of fire safety. From decoding the nuances of hazard identification to mastering the swift and decisive use of fire extinguishers, every moment promises to be a test of courage and skill. Engage in hands-on exercises and immersive simulations that will push you to the limits and prepare you to confront even the most daunting infernos. Empowering and invigorating, this workshop will not only equip you with essential firefighting techniques but also instill in you the confidence to stand strong in the face of adversity. So, buckle up and get ready to embark on a journey where heroes are forged in the flames.



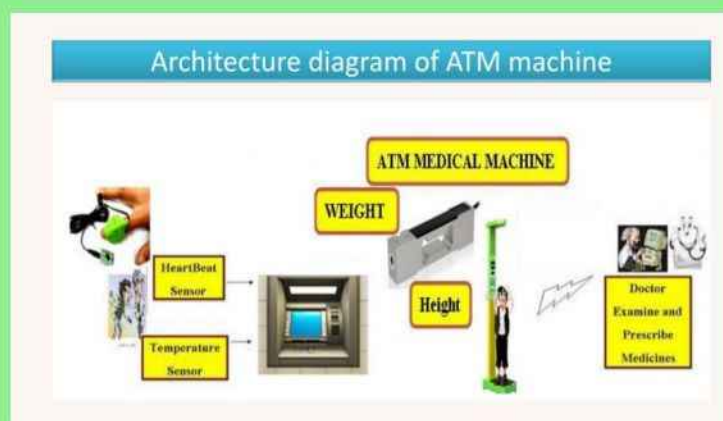
Day 2: Be a Lifesaver, Be a CPR Hero (28th March, 2023)

Step into the realm of life-saving legends as the second day of our workshop takes you on a thrilling ride through the art of cardiopulmonary resuscitation (CPR). Led by none other than Sri Dr. Irshad Ahmed, Assistant Professor Emergency Medicine, and Sri Dr. Chaithanya, Senior Resident, PESIMSR, Kuppam, this session promises to transform you into a CPR superhero. Learn the secrets of reviving victims in cardiac arrest or respiratory distress with confidence and precision. From mastering chest compressions to deploying automated external defibrillators (AEDs) like a pro, you'll be armed with the skills and knowledge to be a true lifesaver. Get ready to make a difference and be a hero in someone's time of need.



Revolutionizing Healthcare with IoT and Block chain

In a visionary bid to revolutionize healthcare access, Kranthi Kumar and Hemanth Goud spearheaded the Health Chain initiative. This ground-breaking project integrates IoT and block chain technologies to ensure secure health data management and streamline medical services. Their innovative approach extends to deploying Anytime Medical Counters equipped with vital sign sensors in remote rural areas, coupled with intuitive mobile apps facilitating seamless doctor consultations and medication procurement. Unveiled at a State-level Tech Fest from November 24 to 26, 2022, this transformative endeavor signals a promising shift towards equitable healthcare delivery, bridging gaps in access and fostering a healthier future for all.



Empowering Tomorrow: The Rise of Electric Vehicles

Prepared by Chandanapriya and M.S. Monisha, this presentation sheds light on the versatility and environmental benefits of electric vehicles (EVs). Whether powered by a collector system, electricity from extravehicular sources, or autonomously by batteries – potentially charged via solar panels or fuel cells – EVs span various modes of transportation, from road and rail vehicles to aircraft and spacecraft. Notably, EVs boast significantly fewer moving parts compared to internal combustion engines, resulting in minimal maintenance requirements. Charging times vary but can range from 30 minutes to over 12 hours, depending on the charging station's speed and battery size. Emphasizing the role of EVs in reducing dependence on fossil fuels, the presentation advocates for their adoption as a sustainable choice benefiting both individuals and the nation. Presented at the PSV Techshare event at PSV Polytechnic College, Krishnagiri, this enlightening presentation offers insights into the future of transportation and energy sustainability.



Fighting Fatigue: The Vision-Based Approach to Driver Drowsiness Detection

Developed by students Bhuvandheeraj K N and Tharun Dasari, this project focuses on creating a vision-based solution for detecting driver drowsiness. In today's demanding world, where sustained focus is crucial, the risk of fatigue-induced accidents looms large. To address this, the project aims to develop a system capable of identifying and alerting drivers about their fatigue levels. Leveraging vision-based techniques, the project introduces a novel approach centered on monitoring eye blink duration to detect drowsiness. By utilizing features like horizontal symmetry and Eye Aspect Ratio (EAR), the system offers real-time monitoring through a standard webcam, positioned in front of the driver's seat, with the potential to significantly enhance road safety.



Revolutionizing Manufacturing: The Power of 3D Metal Printing



Penned by Mahesh Babu and V. Sadik Basha, this review explores 3D printing's revolutionary approach to manufacturing, creating parts directly from digital models layer by layer. Its tool-less process swiftly produces fully dense metallic parts with exceptional precision, captivating industries like aerospace, oil & gas, marine, and automobiles. Notable benefits include design freedom, complexity handling, light weighting, consolidation, and functional design. Powder bed fusion, a prominent technique, selectively fuses powder bed layers using energy sources like lasers, ideal for crafting intricate metallic parts. This concise review offers insights into 3D printing technologies, materials, applications, advantages, challenges, and economics, illuminating the potential of 3D metal printing.

Career Compass: Navigating Towards Success

On April 6th, 2022, Shankar Loganathan, Senior Project Engineer at United Group Limited, Sydney Metro Project, Australia, led an engaging webinar on career guidance. Tailored to help participants make informed decisions about their professional paths, this online seminar was a treasure trove of insights. Shankar Loganathan shared expert advice on various career options, in-demand skills, and educational opportunities, guiding attendees towards a brighter future. Hosted by Sri. CH. SUBBANNA and coordinated by Sri.K.NARASIMHULU, Sri. V. NIRANJAN, Sri. G. VARUN KUMAR, and Sri. A. VICTOR JOSEPH, the event provided valuable discussions on goal setting, networking, and personal development. With its wealth of knowledge and practical advice, the webinar served as a compass to navigate the complexities of the job market, empowering participants to chart their course towards a fulfilling career.



Regional PolyTech Fest 2022: Celebrating Innovation and Achievement

Hosted by the State Board of Technical Education and Training, Mangalagiri, the Regional Polytech Fest 2022 held from November 15th to 17th was a beacon of innovation. Taking place at GPT, Kalikiri, this district-level Techfest showcased exceptional talent and creativity. Among the standout projects were "Low-Cost Ventilator with Multiple Features" and "Smart Agricultural Robot," both presented by our students. Securing the first position, the team behind the ventilator project won a prestigious prize of Rs. 25,000. Congratulations to S. Sai Bharath, L. Kesava Balaji, and M. Praveen Kumar for their outstanding achievement! Their dedication and ingenuity have earned them a well-deserved spot in the State-level Techfest. Special thanks to their guides, Sri CH Subbanna and Sri K. Narasimhulu, for their guidance and support throughout the project.



State-Level PolyTech Fest 2022: Celebrating Innovation in Medical Technology

Immerse yourself in the electric atmosphere of the State-Level Polytech Fest 2022, hosted by the State Board of Technical Education and Training, Mangalagiri. From November 22nd to 25th, Vijayawada buzzed with excitement as this dynamic event unfolded, serving as a melting pot of innovation and technology. Showcasing the brightest minds and most innovative projects from across the state, the fest was a vibrant celebration of creativity and ingenuity. Among the standout exhibits was our students' awe-inspiring creation: the "Low-Cost Ventilator with Multiple Features," a project with the potential to transform healthcare and save lives. As visitors and experts marveled at the students' dedication and brilliance, the fest became a hub of knowledge exchange and networking. Sparking inspiration and igniting passion, this event paved the way for groundbreaking advancements in medical technology, promising a future filled with even greater innovations and life-changing discoveries.



Unveiling Innovation: Highlights from the State-Level PolyTech Fest 2022

Day 1: Illuminating the Path to Sustainable Energy

Step into the realm of sustainable energy on Day 1 of our two-day hands-on national workshop. Explore the intricate workings of photovoltaic panels, solar inverters, hybrid solar systems, and net metering technology. Learn how these cutting-edge technologies are revolutionizing the energy landscape, paving the way for a brighter and more sustainable future. Engage with experts and peers from polytechnics, engineering colleges, and industry as you delve deep into the principles and applications of solar power. Get ready to harness the power of the sun and unlock the potential of renewable energy sources.



Day 2: Enlightening Innovations in LED Technology



On Day 2, we shift our focus to the fascinating world of LED technology. Dive into the design and fabrication of LED lights and explore the intricacies of driver circuitry. Discover how LED lighting is transforming the way we illuminate our world, offering energy-efficient solutions for a variety of applications. Through hands-on activities and practical demonstrations, gain invaluable insights into LED light assembly techniques and unleash your creativity in designing innovative lighting solutions. Join us as we illuminate the path to a more sustainable and energy-efficient future through the power of LED technology.

Exploring Sustainable Power Generation: Sathanur Dam Power Station

Journey into the heart of hydroelectric power generation with the Department of Electrical & Electronics Engineering's industrial tour to Sathanur Dam Power Station in Tamil Nadu. This remarkable visit unveils the intricate workings of hydroelectricity, showcasing how the dam harnesses the mighty Pennaiyar River to produce clean and sustainable energy for millions. From witnessing the impressive turbines in action to observing the meticulous operations of the control room, participants gain firsthand insights into the engineering marvels that power our world. Moreover, learn about the station's dedication to environmental conservation efforts, ensuring a harmonious balance between progress and preservation. Get ready to be inspired by the ingenuity and impact of hydroelectric power generation on this enlightening industrial tour.

