

Department of Mechanical Engineering



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Department's Vision and Mission

Vision

- **To be the center of excellence that nurtures technologically competent and industry ready mechanical technicians having high values and national concern.**

Mission

- To impart technical education using productive learning resources to develop intellectual competency and life long learning attitude.
- To adopt well coordinated state of art tools and technology to develop technical, ethical and eco-friendly skills.
- To provide advanced practical tools to solve broad based problems and develop motor skills.

HOD's Desk



Greetings from the Head of Department

It gives me immense pleasure to extend a warm welcome to all the readers of this magazine. This publication is a testament to the creativity, dedication, and talent of our students and faculty, reflecting the vibrant spirit of our department. Through these pages, we aim to showcase a blend of academic achievements, innovative ideas, and extracurricular endeavors that define the essence of our community. I encourage all our students to continue striving for excellence and contributing to this platform, which serves as a mirror of your hard work and aspirations. Thank you for your support, and I hope this edition inspires and informs you. Happy reading!



Departmental Events



Abhyudaya 2023: A Celebration of Growth and Gratitude

The much-awaited Abhyudaya event was a resounding success, bringing together teachers and students in a joyous celebration of collaboration, learning, and gratitude. The event commenced with a warm and traditional welcome for the esteemed teachers, symbolizing respect and admiration for their unwavering dedication. The day was marked by vibrant cultural performances, heartfelt speeches, and interactive activities that highlighted the creativity and enthusiasm of the students. Teachers and students participated together in engaging games and discussions, fostering a deeper bond and mutual appreciation. Abhyudaya 2023 truly encapsulated the spirit of growth, teamwork, and harmony, leaving everyone inspired and eager to continue their journey of collective success.

Stimulating Minds at Abhyudaya 2023: Quiz Bee and Brain Teasers

As part of the vibrant celebrations of Abhyudaya 2023, the event featured an exciting Quiz Bee and a series of brain teaser games that sparked enthusiasm among students and teachers alike. The Quiz Bee tested participants' knowledge across diverse topics, fostering healthy competition and teamwork. The brain teasers, designed to challenge creativity and problem-solving skills, added an element of fun and curiosity, leaving everyone intrigued and engaged. These activities not only brought out the intellectual prowess of the participants but also encouraged collaboration and critical thinking. The energy and excitement surrounding these games truly highlighted the spirit of Abhyudaya, making it a memorable and enriching experience for all.



EXPERT LECTURES

An insightful and inspiring expert lecture on "**Career Opportunities and Guidance**" was conducted by Mr. Vikram Suryavanshi, a renowned professional with extensive experience in career development. The session provided students with valuable insights into various career paths, the importance of skill development, and strategies for achieving professional success. Mr. Suryavanshi's engaging delivery and practical advice left the audience motivated to explore their potential and make informed career choices. The lecture served as a guiding light for students, equipping them with the tools and confidence to navigate their career journeys effectively.



Industrial Visits



An industrial visit and training program on 3D printing technology was recently organized at Dharmashri Engineering Works, offering a unique opportunity for students and professionals to explore the advancements in additive manufacturing. The program included an in-depth introduction to 3D printing techniques, materials, and applications across various industries. Participants were given hands-on experience with state-of-the-art 3D printing machines, fostering practical knowledge and innovation. The experts at Dharmashri Engineering Works provided valuable insights into the latest trends, challenges, and future potential of 3D printing. This program not only enhanced technical skills but also inspired attendees to leverage this transformative technology in their future projects and careers.





Top Placements in 2023 Pass out



NAME: Ayan Irfan Shaikh
Asian Paint Pvt.Ltd-7.33/- Annum



NAME Shreyas Sachin Gadkari
SAARLORA ADVANCED
MATERIALS PVT.LTD-3.5/- Annum



NAME: Chavan Satyajee Sarjerao
Maxicom Wheels=3.12/-Annum



Technical Articles by Students E Vehicles

- **The Future of Transportation: Exploring the Rise of Electric Vehicles (EVs)** The global automotive industry is undergoing a revolutionary transformation with the rapid adoption of electric vehicles (EVs). As concerns about climate change and environmental sustainability intensify, EVs are emerging as a cleaner and more efficient alternative to traditional internal combustion engine (ICE) vehicles. This article delves into the technological, environmental, and societal impacts of EVs, highlighting their potential to reshape the future of transportation.

- **1. What are Electric Vehicles?**

Electric vehicles are automobiles powered by electric motors using energy stored in batteries or fuel cells. Unlike ICE vehicles that rely on fossil fuels, EVs generate minimal emissions, making them an environmentally friendly mode of transportation.

- **2. Key Components of Evs**

EV technology consists of several crucial components: **Battery Pack:** Lithium-ion batteries are the most common due to their high energy density and efficiency. Advances in solid-state batteries promise enhanced performance and safety. **Electric Motor:** Converts electrical energy into mechanical energy, providing propulsion. **Inverter:** Manages the flow of electricity between the battery and the motor. **Onboard Charger:** Allows batteries to recharge from external power sources. **3. Environmental Impact** The transition to EVs significantly reduces greenhouse gas emissions. According to the International Energy Agency (IEA), EVs emit about half the CO₂ over their lifecycle compared to ICE vehicles. Additionally, EVs minimize air and noise pollution, contributing to healthier urban environments. However, challenges remain in battery production, which involves energy-intensive mining of raw materials like lithium and cobalt. Sustainable sourcing and recycling are critical to addressing these concerns.

- **3.Environmental Impact**

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- **4. Technological Innovations**

EV technology is evolving rapidly, driven by advancements in battery efficiency, autonomous driving systems, and charging infrastructure. Key innovations include: **Fast-Charging Technology:** Modern EVs can achieve an 80% charge in under 30 minutes. **Wireless Charging:** Inductive charging systems eliminate the need for physical connectors. **Energy Regeneration:** Regenerative braking systems recover energy during deceleration.

- **5. Economic and Social Implications**

The adoption of EVs has far-reaching implications: **Cost Savings:** Lower operating and maintenance costs make EVs more affordable over time. **Job Creation:** The EV industry has spurred demand for skilled professionals in engineering, software development, and battery production. **Energy Independence:** Countries can reduce reliance on imported oil by investing in renewable energy sources for EV charging.

- **6. Challenges and Opportunities**

While the growth of EVs is promising, several challenges must be addressed: **Infrastructure:** Developing a widespread network of charging stations is critical for mass adoption. **Battery Disposal:** Establishing efficient recycling systems is essential to manage waste and recover valuable materials. **Affordability:** High initial costs remain a barrier for many consumers. Conversely, opportunities abound in research and development, policy support, and international collaboration to accelerate the EV transition.

- **7. The Road Head**

Governments worldwide are implementing policies to promote EV adoption. Incentives such as tax credits, subsidies, and regulations on ICE vehicles are driving the shift. The global EV market is projected to grow at a compound annual growth rate (CAGR) of 23.1% from 2023 to 2030, reflecting increasing consumer demand and industry innovation.

- **Conclusion**

Electric vehicles represent a paradigm shift in transportation, combining technology and sustainability to address pressing global challenges. As research and development continue, EVs have the potential to become the cornerstone of a cleaner, smarter, and more connected future. Institutes and organizations must play an active role in fostering innovation, awareness, and adoption of EVs to ensure a sustainable tomorrow.

Mr. Pailwan Mohammad Zaid

TY Mech



Social Article THE FUTURE OF WORK

➤ **The Social Impact of Online Exams During COVID-**

19The COVID-19 pandemic revolutionized education, with online exams becoming the norm to maintain academic continuity. While this shift ensured safety and progress, it brought several social challenges and opportunities. 1. Digital Divide Online exams exposed inequalities in access to devices and internet connectivity. Students from rural and economically disadvantaged backgrounds faced significant hurdles, highlighting the need for digital inclusivity.

➤ **Academic Integrity**

Ensuring fairness in online assessments was a concern, leading to increased use of proctoring tools. However, these raised privacy issues and added stress for students.

➤ **Mental Health Challenges**

The transition to online exams caused anxiety and isolation for many students. Technical difficulties and the lack of in-person interactions further exacerbated stress.

➤ **Opportunities for Innovation**

Educators explored alternative methods like open-book exams and project-based evaluations, encouraging critical thinking over rote learning.

➤ **Psychological Impact on Students**

The abrupt transition to online exams and education, in general, took a toll on students' mental health: Stress and Anxiety: Technical glitches, unfamiliar interfaces, and the fear of failure increased stress levels. Isolation: Lack of physical interaction with peers and teachers added to feelings of loneliness and disconnection. On the positive side, many students appreciated the flexibility of online exams, which allowed them to take tests from the comfort of their homes.

➤ **Challenges for Educators**

Teachers faced their own set of difficulties during this transition: Technological Adaptation: Many educators had to quickly learn and adapt to online teaching and assessment tools. Workload: Designing and grading online exams required significant time and effort. Despite these challenges, educators demonstrated remarkable resilience and creativity in ensuring the success of online assessments.

➤ **Conclusion**

The impact of online exams during COVID-19 was multifaceted, bringing both challenges and opportunities. While the transition was not without its difficulties, it also paved the way for innovation and resilience in education. As we move forward, it is essential to leverage these experiences to create more inclusive, flexible, and student-centered assessment systems. By addressing the social and technological challenges highlighted during the pandemic, educational institutions can ensure that no student is left behind in the journey toward academic excellence.

Mr.Jadhav Tushar Milind

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