NANDHA ENGINEERING COLLEGE

(AUTONOMOUS)

ERODE – 638052, TAMILNADU.

Affiliated to Anna University, Chennai. Accredited by NAAC A+ Grade

Department of Mechanical Engineering

(Accredited by NBA)

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ABOUT THE DEPARTMENT

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The Department of Mechanical Engineering was established in the year 2005. At present, the department offers Graduate Programme – B.E., in Mechanical Engineering, Post Graduate Programme – M.E, in Engineering Design and Doctorate Programme – Ph.D., in Mechanical Engineering. The department has been accredited by National Board of Accreditation (NBA) in the year 2013 and Reaccredited in the year 2023. It is reputed for producing Engineers as Professionals, Researchers and Entrepreneurs. Many of its alumni play key roles in Industries and Institutions in India as well as in abroad. The department is proud to be collaborated with well-known Industries and Institutions in the emerging fields of Mechanical Engineering.

With a right combination of theory, practical, projects (hands-on) and industrial training in the areas such as Design, Thermal, Manufacturing and Energy Engineering, this programme has well placed itself as a well-known preference for the students

VISION

To be recognised as a centre of excellence in the field of Mechanical Engineering and to produce competent engineers with multi-disciplinary exposure to meet the changing needs of the society.

MISSION

- To enrich technical knowledge and skills by imparting quality education with ethics and social responsibility.
- To empower the students in the thrust areas of Mechanical, Allied Engineering and Entrepreneurship in the continually changing global market.
- To provide a conducive learning environment for improving continually to cater the needs of the society.

STUDENTS' ARTICLES

POLLUTION DUE TO URBANIZATION

Urbanization is a great concept which is essential to develop any country. It refers to the concept of urbanizing remote areas by building infrastructure which then brings about development. We often consider urbanization to be a positive phenomenon but one of the main causes of pollution is urbanization. When people started setting up cities, industrialization took place. Thus the level of pollution started increasing. The biggest issue today is environmental pollution, which we as a society need to address immediately. The deteriorating environment has become a major challenge for human beings. Over the years, the rural population has increasingly migrated to the cities, as they too are attracted by the comfortable lifestyles utilized by the urban population. On the other hand we are still unable to cope from issues such as the lack of basic facilities like education, medicine, electricity, communication in various regions of our nation.

By

G. MANJUNATH

III-MECH

THE ROLE OF MECHANICAL ENGINEERING IN ADVANCING ELECTRIC VEHICLE TECHNOLOGY

Introduction:

Electric vehicles (EVs) are rapidly growing in popularity due to their potential to reduce emissions and improve energy efficiency. However, the successful integration of electric powertrains into vehicles requires advanced mechanical engineering solutions. In this article, we will explore the critical role that mechanical engineering plays in the development of electric vehicles.

Battery Technology:

Mechanical engineering plays a crucial role in the development of battery technology for electric vehicles. One of the significant challenges in electric vehicle design is developing batteries that can provide high energy density, high power output, and long service life. Mechanical engineers work on developing advanced battery packaging and thermal management systems to ensure the battery's safe operation and maximize its performance.

Electric Motor Design:

Mechanical engineers also play a vital role in the design of electric motors, which are the heart of electric vehicle powertrains. They work on developing motor designs that can provide high power output and efficiency while minimizing weight and size. They also work on developing advanced cooling systems for the motor to ensure optimal performance and durability.

Regenerative Braking:

Regenerative braking is a critical feature in electric vehicles that enables them to recapture kinetic energy that would otherwise be lost during braking. Mechanical engineers work on designing and optimizing regenerative braking systems to ensure that they can provide maximum energy recovery while minimizing the impact on the vehicle's braking performance.

Vehicle Dynamics:

Mechanical engineers also play a crucial role in optimizing the vehicle's dynamics for electric vehicle applications. They work on developing lightweight materials, optimizing vehicle aerodynamics, and improving suspension and steering systems to ensure that the vehicle's performance is optimized for electric powertrains' unique characteristics.

Conclusion:

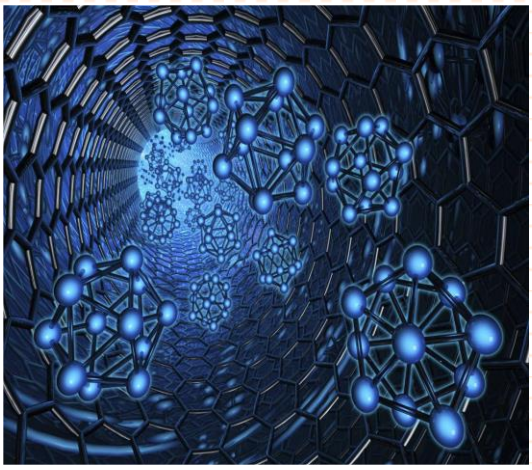
The rapid growth of electric vehicles has created numerous opportunities for mechanical engineers to develop advanced technologies and solutions to advance electric vehicle technology. The successful integration of electric powertrains into vehicles requires advanced mechanical engineering solutions, including battery technology, electric motor design, regenerative braking systems, and vehicle dynamics optimization. The role of mechanical engineering in electric vehicle development is critical to achieving high performance, efficiency, and safety standards that are essential for the widespread adoption of electric vehicles.

By

M. KIRUTHIKA

IV-MECH

NANOTECHNOLOGY



Nanotechnology is the manipulation of matter on an atomic, molecular, and supramolecular scale. It involves developing materials, devices, and systems through the ability to understand and control matter at the nanoscale level. These nanoscale materials and devices have a wide range of applications, such as in medicine, energy, computing, and consumer products. Write new information about nanotechnology

Nanotechnology is being used in a variety of industries, such as manufacturing, automotive, aerospace, pharmaceuticals, and healthcare. It is enabling the development of products and processes that are more efficient, cost effective, and sustainable. For example, nano materials are being used to improve the strength and durability of materials, helping to reduce the weight of vehicles and aircraft. Nanotechnology is also being used to develop targeted drug delivery systems, allowing more precise and effective treatments with fewer side effects.

About nanotechnology. Nanotechnology is the science of manipulating materials and devices on a molecular and atomic scale. It has enabled the development of a wide range of products and processes, from medical treatments to energy production. Nanotechnology has allowed for increased efficiency, cost effectiveness, and sustainability, as well as the production of lighter and stronger materials. It is being used in a variety of industries, from automotive to aerospace, and is enabling the development of more precise and effective treatments in healthcare.

By

P. KAVYA

I-MECH

CHAINLESS BICYCLE

- A chainless bicycle is a bicycle that transmits power to the driven wheel through a mechanism other than metal chain.
- It is advanced vertical pedaling system provides continuous gravitational force throughout the entire stroke.
- The levers that run from the pedals to a linkage on the rear hub, these alone rider to simply push up and down on the pedals, causing the rear wheel turn.
- Benefits of chainless bicycle: Longer pedal cranks deliver more power to the rear wheel. There's less stress to hips, knees and ankles and it's easy to store securely.
- One of the top benefits of chainless bicycle is its light weight and flexibility. The absence of derailleur's and chains makes it easy to move a chainless bicycle.

By

S. RAJAVIGNESH

II-MECH

சரித்திரம் விதைத்த சாதியின் கூக்குரல்

மனதை நெறிப்படுத்த மதம்
உருவானது காலப்போக்கில்
மதவெறி கருவானது ...

மதம் என்ற சொல்லால் பிளவு
பட்டோம் உண்மையான
பாசத்தையும் அன்பையும்
இழந்துவிட்டோம் ...

நாம் யாவரும் ஓரினம்
இதை அறியாதார் நம்
சாதிசனம் ...

மதம் என்ற ஒன்று
நெருப்பாக மனித இனம்
அதற்கு பலியாக ...

மீளமுடியாமல் சிலர்
திகைக்கு மீண்டெழுந்தோர்
பலரை புதைக்க ...

மீளவும் முடியாமல் வாழவும்
முடியாமல் முடிவில்லாமல்
நீளுகிறது இந்த முற்றுப்புள்ளி.

-பாஸிமா பானு.பா

By

B. FASIMA BANU

IV-MECH