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MACET MYSTICA

MAULANA AZAD COLLEGE OF ENGINEERING & TECHNOLOGY

MONTHLY E-NEWSLETTER

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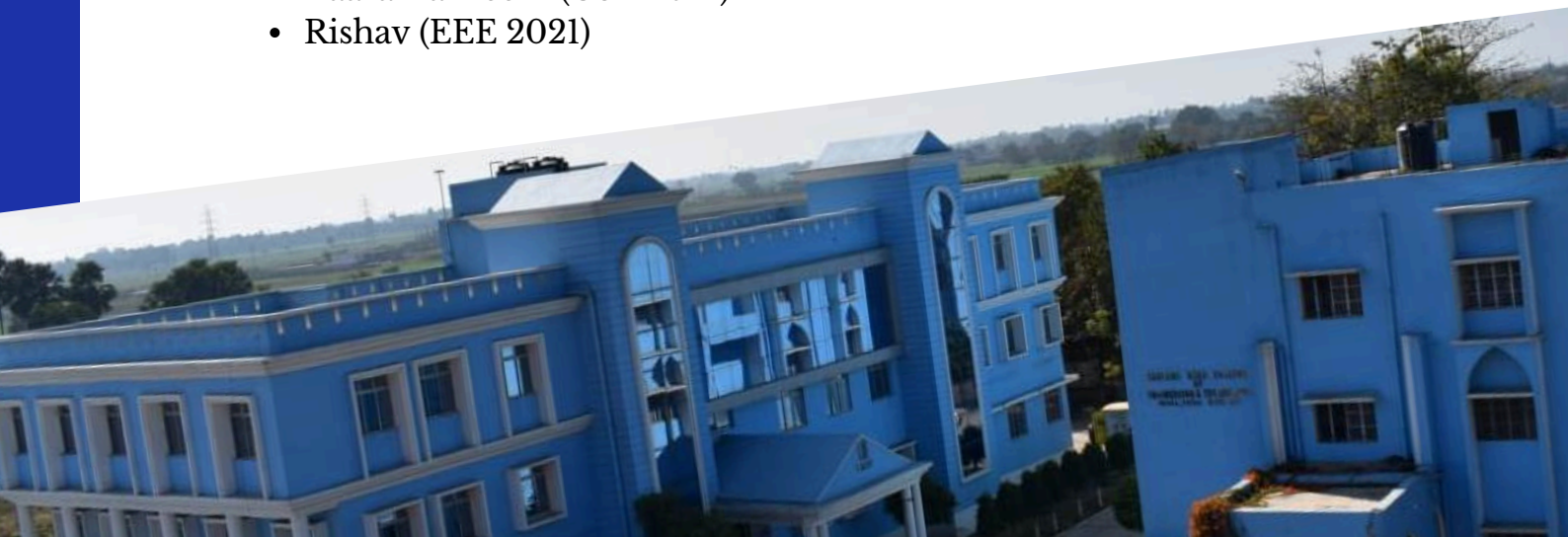


EDITORIAL

As you step into this new year, remember that each day is a blank page in your book of life .Approach it with curiosity and enthusiasm. This is your time to set ambitious yet achievable goals, explore new subjects and interests. Engage in extracurricular activities that broaden your horizons. Share knowledge, encourage one another, and celebrate each other's successes. A strong community can turn challenges into stepping stones for collective growth.

In today's rapidly evolving world, the ability to learn and adapt is your greatest asset. Remember, education extends beyond textbooks – seek knowledge in everyday experiences, conversations, and the world around you. As we usher in this new year, remember that you are not just students, but future leaders, innovators, and change-makers. Your journey in education is laying the foundation for a brighter tomorrow. Embrace each day with optimism, curiosity, and determination.

Here's to a year filled with learning, growth, and countless achievements. May your efforts be fruitful, your spirits high, and your dreams within reach.

Happy New Year, dear students. The world eagerly awaits the positive changes you will bring!

EDITOR
SAIMA FARZEEN
Assistant Professor
Mechanical Department

Contents

Green Hydrogen and Renewable Energy Integration: Paving the way for a Sustainable Future

(Farhan Rizwan, ME, MACET)

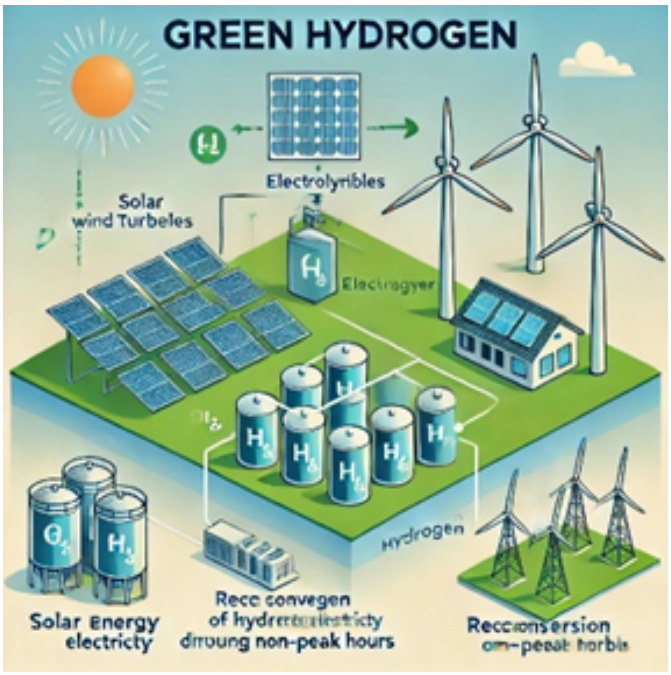
In the face of escalating climate change and depleting fossil fuel reserves, the global energy sector is witnessing a paradigm shift towards sustainable and clean energy solutions. Among these, green hydrogen has emerged as a beacon of hope, promising to revolutionize energy systems and enable the seamless integration of renewable energy sources. This article delves into the concept of green hydrogen, its production, applications, and its role in fostering a sustainable future.

What is Green Hydrogen?

Hydrogen is the most abundant element in the universe, but it does not exist in its pure form on Earth. It must be extracted from compounds like water or natural gas. Green hydrogen refers to hydrogen produced through the process of electrolysis using renewable energy sources such as solar, wind, or hydroelectric power. The key distinction is its zero-carbon footprint, as it eliminates the reliance on fossil fuels and avoids greenhouse gas emissions during production.

Production of Green Hydrogen

The production of green hydrogen involves the use of electrolyzers, devices that split water (H_2O) into hydrogen (H_2) and oxygen (O_2) using electricity. When powered by renewable energy, the entire process is sustainable and environmentally friendly. Recent advancements in electrolyzer technology have enhanced efficiency, reduced costs, and scaled up production capabilities, making green hydrogen a viable energy solution.



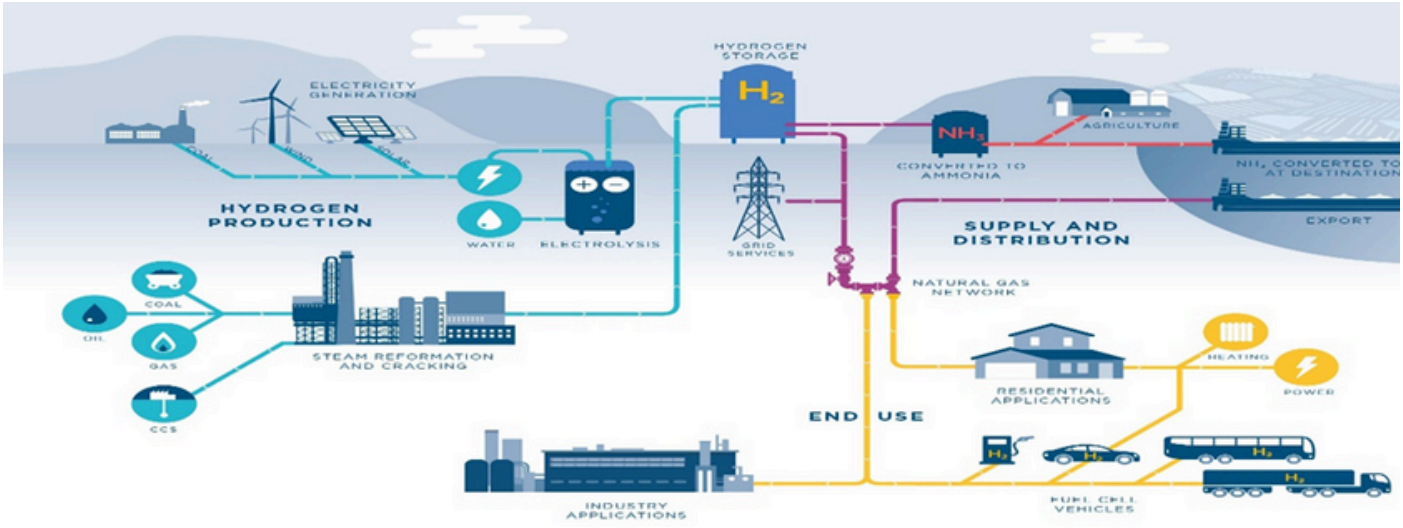
Integration with Renewable Energy

One of the most significant challenges with renewable energy sources like solar and wind is their intermittent nature. Green hydrogen offers an innovative solution by acting as an energy storage medium. Excess renewable energy generated during peak production can be used to produce hydrogen, which can then be stored and converted back into electricity when needed. This not only ensures a stable energy supply but also maximizes the utilization of renewable energy infrastructure.

Applications of the Green Hydrogen

Green hydrogen is versatile and has a wide range of applications across various sectors:

- Transportation: Hydrogen fuel cells are being used to power vehicles, offering a clean alternative to conventional internal combustion engines.



These fuel cells emit only water vapor as a byproduct, making them ideal for reducing urban pollution.

- *Industry:* Green hydrogen can replace fossil fuels in energy-intensive industries like steel and cement production, significantly lowering carbon emissions.
- *Power Generation:* Hydrogen can be used in gas turbines to produce electricity, providing a cleaner alternative to natural gas.

Conclusion

Green hydrogen is more than just an alternative energy source; it is a transformative force that can redefine how we produce, store, and consume energy. As the world strives to combat climate change and secure a sustainable future, green hydrogen and renewable energy integration stand out as a synergistic solution. Embracing this technology not only ensures environmental preservation but also drives economic growth, energy security, and innovation. The path to a cleaner and greener future is clear, and green hydrogen is lighting the way forward.

Industrial Visit was organised on 16th December 2024 for 7th semester Mechanical Engineering students by Mechanical Engineering Department, Maulana Azad College of Engineering and Technology, Neora, Patna.

Faculty Coordinators:

- Mr. Kashif Faridi and Mr. Firoz Alam

Industry Overview:

- Vankos and Company, established in 1960, is a renowned manufacturer of low-cost, high-precision, high-efficiency hydraulic equipment. The company is ISO 9001:2008 certified and has a reputation for excellence in hydraulic machinery manufacturing.

Objective of the Visit:

The industrial visit aimed to provide students with practical exposure to hydraulic equipment manufacturing processes, familiarizing them with advanced machinery and components used in the industry.

Details of the Visit:

Demonstration of Machinery:

- *Lathe Machine: Used for shaping metal or wood.*
- *Vertical Milling Machine: For precise cutting and shaping.*
- *Shaper Machine: Employed in shaping metal pieces.*
- *Grinding Machine: Used for finishing surfaces to a high degree of accuracy.*
- *Universal Cylindrical Grinding Machine: Designed for cylindrical surfaces.*

Explanation of Finished Products:

- Jack Housing
- Piston Rod
- Hydraulic Jack

The students were given detailed explanations about the functioning, applications, and manufacturing processes of these components, enhancing their understanding of hydraulic systems and their role in engineering applications.

Outcome:

The visit concluded by providing students with valuable insights into real-world manufacturing processes. The interaction with industry experts helped bridge the gap between theoretical knowledge and practical application. Students expressed their gratitude for the opportunity to observe and learn about cutting-edge hydraulic machinery.

Conclusion:

The industrial visit to Vankos and Company was a resounding success, achieving its objective of enriching the students' knowledge and understanding of hydraulic equipment manufacturing.

Twenty students from MACET 2021 batch has been selected in Academor Edutech in an online campus placement drive on 10th January, 2025.

- **AYESHA NAAZ**
- **MD.SHAHZEB**
- **ZEESHAN SHAKEEL ANWAR**
- **AQUIB SHEIKH**
- **ZAARA TAHREEM**
- **MD.ARZAN NAWAZ**
- **RISHAV KUMAR**
- **MD.TAMSIL HASHMI**
- **MD.SOHAIL ANSARI**
- **INZAMAM UL HAQUE**
- **SYED ASAD RAHMAN**
- **MD AZAM ALAM**
- **IRFAN AHMAD**
- **ILSHA HASSAN**
- **SYED WALEED REZVI**
- **ASHFI RAZA**
- **KAENAT AFZAL**
- **ALIYA AMJAD**
- **FOWAZ ASFANDYAR AHMAD**
- **MD.SHAHBAZ ANWER**

Two students of Civil Engg. Dept. from MACET has been selected in Ecospace Infra Pvt. Ltd. in an online campus placement drive on 27th November, 2024.

- **ANZARUL HAQUE**
- **SAQUIB HUSSAIN**

CSE DEPARTMENT

FDP/RESEARCH PAPERS

Successfully participated & completed AICTE Training And Learning (ATAL) Academy Faculty Development Program on Importance of Artificial Intelligence in Robotics at Indian Institute of Information Technology Design and Manufacturing Kurnool from 20/01/2025 to 25/01/2025.

- Mr. Mazhar Eqbal
- Dr. Md. Sadruddin Ahmad
- Mr. Rakesh Ranjan
- Mr. Hasibul Hasan Mansoori
- Mr. Md. Farooque
- Mr. Md. Faiz

Mr. Amit Kumar

- successfully participated & completed in Faculty Development Program conducted by EICT Academy-IIT, Kanpur on Cyber Security on Premises Hacking from 28/01/25 - 01/02/25

Successfully participated & completed in Faculty Development Program conducted by EICT Academy-IIT, Kanpur on Data Science & AIML from 28/01/25 - 01/02/25

- Mr. Mazhar Eqbal
- Mr. Rakesh Ranjan
- Mr. Hasibul Hasan Mansoori

Mr. Faiz Ahmad

- Participated in a six-day online FDP on "Academic and Industry Research Opportunities, Research Grants and Publications" organized by Department of Civil Engineering, Marathwada Mitra Mandal's Institute of Technology, Lohgaon, Pune from 16th to 21st December 2024.
- Has actively participated in Six Days FDP on "A GAN-based Hybrid Deep Learning Approach for IOT " Organized by the Department of Computer Science and Engineering, Vinayaka Mission's Kirupananda Variyar Engineering College in association with Pencil Bitz from 16.12.2024 to 21.12.2024

CE DEPARTMENT

FDP/RESEARCH PAPERS

Successfully completed 6 days online Faculty Development Program on "Academic and Industry Research Opportunities, Research Grants and Publications" Organized, by Department of Civil Engineering, Marathwada Mitra Mandal's Institute of Technology, Lohgaon, Pune from 16th to 21st December 2024, In Association with IP Adventure LLP and IQAC-MMIT.

- Mr. Md. Sarfaraz Akhter
- Mr. Md. Zeeshan Farooque

Mr. Md. Ehraz Akhtar

Successfully completed 5 days National level Online Teachers Training Program on "Effective Communication for Teachers" conducted from 23rd December to 28th December 2024 by Association of Muslim Professionals in collaboration with AMU Center, Malappuram, Kerala.

Dr. MOHD KHALID

- Received an award for reviewing a research article in a Scopus Indexed Journal "Results in Engineering" in October 2024.
- Successfully completed 6 days online Faculty Development Program on "Academic and Industry Research Opportunities, Research Grants and Publications" Organized, by Department of Civil Engineering, Marathwada Mitra Mandal's Institute of Technology, Lohgaon, Pune from 16th to 21st December 2024, In Association with IP Adventure LLP and IQAC-MMIT.

CE DEPARTMENT

FDP/RESEARCH PAPERS

Five days on "INCLUSIVE AND REFLECTIVE TEACHING PRACTICES" organized by ASSOCIATION OF MUSLIM PROFESSIONALS from 27-31 January 2025 has been completed by:

- Dr. Shahbaz Anjum
- Mr. S. Moazzam Hussain
- Mr. Ali Nezam
- Dr. Naushad Hasin Khan
- Mr. Kashif Faridi
- Mr. Firoz Alam
- Mr. Md. Irshad Alam Ansari
- Mr. Md. Mojahid

EEE DEPARTMENT

FDP/RESEARCH PAPERS

Mr. Md. Nadeem Enam

Successfully Completed the 3 day Virtual Faculty Development Program on "Embedded Linux Programming" organized by Maven Silicon from 16th Dec. 2024

Mr. Md. Zikrullah

Successfully Completed the 5 day National Level Online Teacher Training Program on "Social- Emotional Learning and Classroom Culture" organized by Association of Muslim Professionals from 28th October to 1st November 2024.

HUMANITIES & SC. DEPARTMENT

FDP/RESEARCH PAPERS

- Dr. Motiur Rahman Ansari

Attended 5 Days National Level Online Teacher's Training Program on "Effective Communication for Teachers" organized by Association of Muslim Professionals from 23rd to December to 28th December, 2024.

THE ETERNAL UNITY OF ART AND SCIENCE

-Md. Saif (CSE, MACET)

It is a fact well acknowledged that arts and science are not separate forces but intertwined energies, each amplifying the other in an endless cycle of discovery. One dream, the other reasons, yet together they shape the course of human progress. They do not just coexist—they propel humanity forward, guiding us from what is known to what is possible.

The Dreamer and the Seeker

The artist is a dreamer, freed from the limitations of the present, diving into the boundless realms of possibility. The scientist, the seeker, forges paths to the unknown, driven by logic and precision. Both share the same insatiable curiosity: to understand, to create, and to transcend. The artist breathes life into the invisible, while the scientist shapes the unseen. Together, they illuminate the world.

A Unified Force

Art is not separate from science; it is the soul of science. The golden ratio, found in both the spiral of galaxies and the petals of a flower, is a truth that unites beauty with mathematics. Science provides the structure, but art unveils its deeper meaning. They speak the same language—a language that transcends formulas and data, inviting us to experience the universe as both beauty and logic.

For instance the world renowned artist Leonardo da Vinci's genius was not divided between art and science; it was born of both. His art was a vision of the future, his science the lens through which he captured it. Da Vinci exemplifies what happens when art and science converge: each discipline feeds and transforms the other.

Innovation without Boundaries

In today's world, this fusion of arts and sciences is unstoppable. Science has birthed tools like AI and virtual reality— technologies that allow art to transcend physical boundaries. The digital age has unlocked new dimensions of creation, where imagination is unrestrained by material constraints. Together, art and science forge a new frontier, rewriting the boundaries of possibility.

Art also humanizes science. It turns raw data into stories and facts into experiences. In the fight against climate change, for example, science provides the numbers, but art makes them feel real, compelling us to act. Through this partnership, science becomes not just equations but a call to action—a force that moves us both intellectually and emotionally.

A Vision for the Future

Art and science are twin engines of human potential, working together to create a future without limits. They are not separate pursuits but two sides of the same coin, each revealing a different layer of truth. Together, they unlock new possibilities—from space exploration to digital innovation, from quantum mechanics to groundbreaking design.

Beyond the Horizon

Therefore one deride the conclusion that arts and science are timeless forces that propel humanity forward. They are not separate but complementary powers, shaping the future together. Art unlocks the emotions that drive us, while science equips us with the tools to act. Together, they elevate the human experience, reaching toward what could be. When combined, they reveal a world of endless potential, where creativity and logic create something greater than the sum of their parts.

Maulana Azad College of Engineering & Technology

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