UPL UNIVERSITY
OF
SUSTAINABLE TECHNOLOGY

Rotary
Ankleshwar

Kathan
ज्ञानम् यज़ामहे।

KATHAN

E-Magazine of UPL University of sustainable Technology

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DECEMBER 2025

Month of Music Carnival

VISION

- **To nurture ethically skilled students for better contribution to the industry, business and the upliftment of society.**
- **To develop knowledgeable and professionally competent engineers to meet global challenges .**

MISSON

- **To provide an environment of academic excellence in Engineering and Technology through complete dedication to all round growth of students and develop sustainable solutions.**

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EDITORIAL MESSAGE

As we welcome the New Year, we stand at the exciting intersection of reflection and possibility. The past year has been a testament to the resilience, creativity, and teamwork that define our engineering community. From innovative projects and research milestones to vibrant student initiatives, every issue of KATHAN reflects the dedication of our students, faculty, and staff.

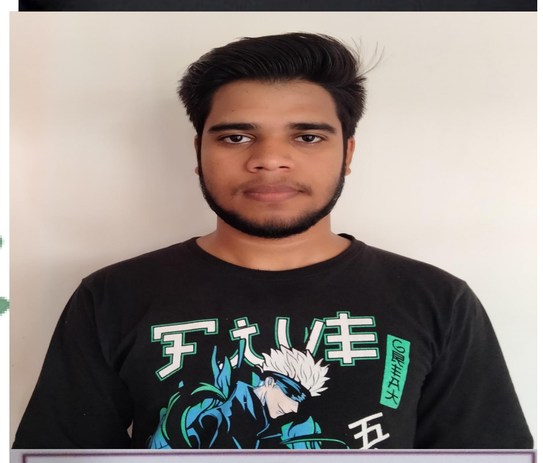
The year ahead invites us to think boldly and act responsibly. Engineering is not just about solving problems—it's about shaping a sustainable, inclusive, and technology-driven future. Let us continue to learn with curiosity, build with integrity, and innovate with purpose. May we embrace challenges as opportunities, collaborate across disciplines, and turn ideas into impact.

Wishing everyone a New Year filled with curiosity, confidence, and constructive breakthroughs. Together, let us design solutions that matter and make this year a blueprint for progress.

Happy New Year!

STUDENT EDITORS

Rutvi Patel
BSc Sem-4
Microbiology



Kishan Kumar
B.E Sem- 4
CT

Abhignakumar Parmar
BE Sem-3
EE

Dhrumi Patel
D.E Sem-6
CO

Rajwadi Jenish
B.E Sem-6
ME

Henin Rawat
B.E.Sem4
CE

Zeel SolankiS
B.E.Sem-4
EST

ME

Shrey Chauhan
BSc Sem-6
Chemistry

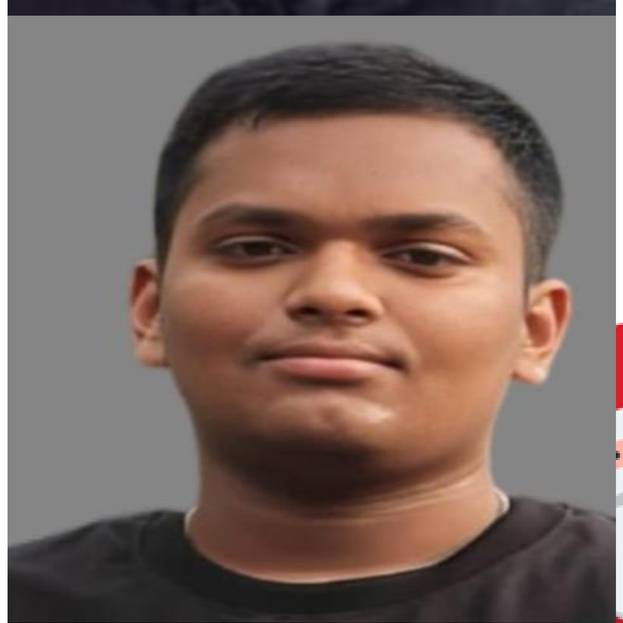
Kartik Pandey
B.E Sem- 4

CT

Krish Patel
B.E Sem-4
CO

Shahidkhan
BE Sem-5
EE

Aniket Prajapati
B.E Sem-4
ME



Jeeson Saaji
D.E Sem-4
CE

Meet Patel BESem 4 EST

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Independence Day Celebrations

UPL University of Sustainable Technology celebrated the 79th Independence Day on 15th August 2025 with great enthusiasm and patriotic spirit. The program commenced with a Guard of Honour by NCC cadets, followed by an impressive march past towards the flag hoisting ceremony. The occasion was graced by the Chief Guest, Mr. Pankaj Bharvada, President of Rotary Club of Ankleshwar, along with other respected Rotarians. The ceremony was also attended by the Honourable Provost, Registrar, Deans, faculty members, NSS volunteers, NCC cadets, and students. The flag hoisting was conducted with pride, followed by the National Anthem.

The celebrations continued with a cultural program at Seminar Hall beginning with an energetic dance performance by students. The Provost addressed the gathering, emphasizing the values of independence, unity, and social responsibility, followed by an inspiring speech by the Chief Guest. Certificates were distributed to Summer Camp participants and students for various achievements, acknowledging their dedication and success. The program concluded with a vote of thanks by the Registrar, and the function ended with delicious breakfast and tea, making the celebration memorable and successful for the entire university community.

વિદ્યાર્થિઓના વિઘ્નહર્તા

“વિદ્યાર્થિઓના વિઘ્નહર્તા” was celebrated with great enthusiasm and spiritual fervour at UUST, creating a vibrant atmosphere filled with devotion, unity, and cultural richness. The event beautifully reflected the deep-rooted Indian tradition of seeking the blessings of Lord Ganesha, the remover of obstacles and the harbinger of wisdom, prosperity, and new beginnings.

Students, faculty members, and staff came together to participate in the celebration, symbolizing togetherness and collective faith. The campus was adorned with flowers and a serene spiritual ambiance enhanced the essence of the occasion. Through prayers, rituals, and devotional activities, students sought divine guidance for academic success, personal growth, and a positive future.

The celebration not only strengthened spiritual values but also fostered cultural awareness and a sense of belonging among students. It served as a reminder of the importance of wisdom, positivity, and perseverance in both academic and personal life. The event concluded on a joyful note, leaving everyone inspired and spiritually uplifted.

Abhyutthan-2025

UPL University of Sustainable Technology proudly organized a prestigious academic awards ceremony “Abhyutthan-2025” on 11th September, 2025 to honor the exemplary achievements of our students.

The ceremony organised was to celebrate their excellent results in the Summer-2025 examinations of Diploma Engineering, Bachelor of Engineering, Postgraduate programs, B.Sc. (Chemistry and Microbiology), and M.Sc. (Chemistry).

The morning session of the felicitation was graced by Shri Vimal Jethwa, President, AIA, as the Chief Guest, while Shri K Srivatsan, Director, Subhasri Pigments, presided over the afternoon session. They were joined in the celebration by Mr. Ashok Panjwani, President of UPL University of Sustainable Technology, Mrs. Meera Panjwani, Former President Rotary club of Ankleshwar, Mr. Pankaj Bharwada, Chairman PETL, Kishore Surti, Treasurer, ARES, Mr. Narendra Bhat, Former President Rotary club of Ankleshwar, Vipinkumar Nair, Secretary of Rotary club of Ankleshwar and Prof. Shrikant Wagh, Provost of the University along with the office bearers, faculty, staff, parents and students.

705 students received certificates along with prize money worth Rs. 515700/- from the guests at the felicitation ceremony. Notably, 22 students achieved a 10-point SPI and 6 exceptional students were honoured with gold medals for their remarkable academic contribution. These students include Rana Harishilsingh Upendrasinh (B.E. Chemical Engineering, 6th Semester), Patel Aayushiben Chiragkumar (B.E. Environmental Science and Technology, 2nd Semester), Pawar Purshottam Pandharinath (M.E. Electrical Engineering, 2nd Semester), Jha Komal Manoranjan (D.E. Chemical Engineering, 4th Semester), Jeeson Saji Varghese (D.E. Chemical Engineering, 2nd Semester), Kher Mohammad Zuned Zakir (M.Sc. Chemistry 2nd Semester).The guests and office bearers present on the occasion congratulated all the rank holders for their success. The ceremony was a true celebration of hard work, dedication and the pursuit of excellence.

Sci-Technovation’25

UPL University of Sustainable Technology proudly inaugurated Sci-Technovation’25 on 18th September 2025 in the esteemed presence of Mr. Sajid Saiyed, CEO, Cyber Security Umbrella Corporation, Surat, as Chief Guest, along with Provost Dr. Shrikant J. Wagh and President Mr. Ashok Panjwani.Jointly organized by the Department of Computer Engineering & IT and Department of Environmental Science & Technology, this year’s theme," Smart Ecosystem: Where Tech Meets Nature”, set the tone for a powerful two-day tech fest.The inauguration featured brilliant student innovations like a remote-controlled car, smart dustbin, early smoke detection system, and home automation – all promoting sustainable living.

Sci-Technovation’25

The event also spotlighted IoT in smart farming, homes, and industries, emphasizing cybersecurity and eco-conscious solutions. The Chief Guest, accompanied by Mr. Panjwani, Provost, Registrar, Deans, CoE, HODs, staff, and student coordinators, toured the exhibits and lauded the creativity, execution, and dedication of our young innovators

POSH: A Safe Workplace is a Right

An enlightening POSH (Prevention of Sexual Harassment) Awareness Session was successfully conducted for First Year B.E. and Diploma students on 24/9/2025 in two batches by Ms. Deval Joshi. With her 15 years of experience Ms. Deval aimed to create awareness about the importance of safe, respectful, and inclusive learning spaces.

Students were sensitized about workplace and campus ethics, their rights, responsibilities, and the procedures to seek help in case of any concerns. Through interactive discussions and real-life examples, the session emphasized the significance of mutual respect, dignity, and professional conduct in academic and professional environments. Such initiatives not only build awareness but also empower students to contribute towards fostering a positive and respectful culture on campus. The session was organised by Dr. Purvi Naik – Controller of examination for the development of code of conduct and ethics in students

Felicitation

On 30/09/2025, from 12:00 PM to 1:00 PM, a felicitation ceremony was organized at Seminar Hall to honor the university's housekeeping staff as a token of gratitude for their dedicated and sincere service. The event emphasized the importance of recognizing and appreciating the efforts of these unsung heroes, who play a vital role in maintaining cleanliness, hygiene, and a healthy campus environment.

Cleanliness Drive at Sengpur Village

A cleanliness drive was successfully conducted by faculty members and students at Sengpur Village on 30/09/2025 from 9:00 AM to 11:00 AM, with enthusiastic participation from all involved. The initiative focused on creating awareness among villagers about hygiene, sanitation, and environmental responsibility, while emphasizing the importance of maintaining clean and healthy surroundings and encouraging active community involvement for sustainable living.

Vibrant Navratri Celebration “Aadishakti’25

“Where Tradition Meets Togetherness”

UUST was filled with energy and colour during the one-day Navratri and Garba event,"**Aadishakti'25**" held on September 26, 2025. The university premises buzzed with excitement as a large gathering of students, faculty, and staff came together to celebrate.

The festivities commenced with a traditional invocation to Goddess Adishakti, seeking her blessings for wisdom, prosperity, and well-being. This serene beginning soon gave way to the vibrant beats of live music, as participants dressed in dazzling traditional attire took to the floor for energetic Garba performances. The air was electric with enthusiasm, showcasing a beautiful blend of cultural ethos and pure joy.

Adding a competitive spark to the evening, contests for the best traditional dress and the best Garba dancer were met with great excitement. The inclusive spirit of the event was highlighted as faculty members enthusiastically joined the students in dance, strengthening the bond between the campus community.

The celebration successfully fostered a profound sense of unity and cultural harmony, concluding with widespread smiles, laughter, and cherished memories for all who participated.

3rd Convocation Ceremony

UPL University of Sustainable Technology proudly celebrated its 3rd Convocation Ceremony on Friday, 7th November 2025, marking a significant milestone in the academic journey of the institution. The grand ceremony was organized with great dignity and academic decorum, honoring the achievements of graduating students and reaffirming the university's commitment to excellence in education and innovation.

The event was graced by Padma Bhushan Prof. J. B. Joshi, Chancellor, Institute of Chemical Technology (ICT), Mumbai, who attended the ceremony as the Chief Guest. His inspirational address motivated the graduating students to pursue knowledge with integrity, innovation, and social responsibility. Shri Arvind Agarwal, retired IAS officer, graced the occasion as the Guest of Honour, adding prestige and value to the ceremony through his presence and insights.

On this auspicious occasion, the ceremony witnessed the esteemed presence of UPL University Chairman Emeritus Mrs. Sandra Shroff and UPL University President Mr. Ashok Panjwani, along with Trustee members, Governing Body Members, Board of Management Members, and Academic Council Members. The event was further enriched by the presence of members of the Rotary Club of Ankleshwar, distinguished representatives from various industries, and senior university leadership including Provost Prof. Shrikant Wagh, Registrar Mr. Dharmesh Patel, and Controller of Examinations Dr. Purvi Naik.

The gathering also included Deans, faculty members, staff, students, and proud parents, making the convocation a moment of celebration, pride, and gratitude. Degrees were conferred upon graduating students in recognition of their academic accomplishments, hard work, and perseverance.

The Convocation Ceremony concluded on an inspiring note, encouraging graduates to uphold ethical values, contribute to sustainable development, and emerge as responsible professionals and leaders. The event truly reflected the university's vision of nurturing talent and fostering a culture of lifelong learning and societal impact.

Technical Article

Importance and scope of Li-ion battery recycling in India

- **Introduction:**

Lithium-ion (Li-ion) batteries have become essential to modern life. They power everything from mobile phones and laptops to electric vehicles and solar energy storage systems. As India moves toward cleaner transportation and renewable energy, the use of Li-ion batteries is growing rapidly. However, this growth also brings an important challenge like what should we do with these batteries once they reach the end of their life? Then the recycling becomes the option which is most reliable and beneficial to environment and businesses as well.

- **Importance of recycling of Li-ion battery**

Li-ion batteries are made of valuable metals such as lithium, cobalt, nickel and copper. India imports most of these materials, which makes battery production costly and dependent on global markets. Recycling helps recover these metals from old batteries, reducing imports and supporting the country's move toward self-reliance in clean-energy technologies. Recycling is also vital for protecting the environment. Improper disposal of used batteries can lead to chemical leaks, fires, and pollution of soil and water. In many places, batteries are handled by informal workers without safety measures, putting people and nature at risk.

Proper recycling ensures safe dismantling and prevents these hazards. To promote this, the Indian government has introduced Battery Waste Management Rules and Extended Producer Responsibility (EPR), making companies responsible for collecting and recycling old batteries.

- **Scope in India**

With the rise of electric vehicles and renewable energy systems, battery waste in India will increase quickly in the coming years. This creates a huge opportunity for recycling industries. Many companies are now setting up advanced recycling plants that use safe mechanical and chemical methods to recover metals. The sector also has the potential to create many new jobs, support green manufacturing and contribute to a more sustainable future. Li-ion battery recycling is therefore not just a technical solution, but it is a key step toward a cleaner and self-reliant India.

Shahidkhan Pathan
Enrollment no.: 230102104002
Department/branch: BE- Electrical engineering
Sem: 3

Technical Articles

STRAINER VS FILTER

- **Particle Size Removed:**
- **Stainer**: A strainer removes larger particles, typically greater than 75–100 microns, using a mesh or perforated screen to protect downstream equipment from debris such as bolts, scale, and rust flakes.
- **Filter**: A filter removes much finer particles, ranging from micron to sub-micron levels, using specialized filter media such as paper, fibber, sintered metal, or cartridges to achieve fluid purity.
- **Purpose:**
- **Stainer**: A strainer functions primarily as a mechanical protection device and is installed upstream of pumps, valves, meters, and nozzles to prevent damage, especially in systems requiring high flow rates and low pressure drop.
- **Filter**: Fluid quality control device designed to remove contaminants that affect performance or purity and is essential in hydraulic systems, lubrication systems, and industries such as food, pharmaceuticals, and chemicals.
- **Pressure Drop:**
- Strainers: Low pressure drop due to their larger openings, making them less restrictive to flow and allowing longer cleaning intervals.

- Filters: Higher pressure drop because of fine filtration media, with pressure increasing as particles accumulate, necessitating regular monitoring and replacement.
- **Maintenance Requirements:**
- Strainers: Cleaned manually through blow-down, backwashing, or basket removal, have lower operating costs, and use reusable screens.
- Filters: Require replacement of the filter media when clogged, can be more expensive over time, and may require specialized handling or disposal.
- **Filtration Mechanism:**
- Strainers: sieving, trapping particles larger than the screen openings.
- Filters: Combination of sieving, depth filtration, adsorption, and surface capture, enabling much finer and more complex contaminant removal.

NAME: Omprakash Kumar
Enrollment no.: 240102301069
Department/branch: BE- Chemical engineering
Sem: 6

Waste Water

- **Introduction**

Wastewater has traditionally been viewed as an environmental burden requiring energy-intensive treatment before discharge. However, increasing pressure on conventional energy resources and stricter environmental regulations have changed this perspective. Today, wastewater is being recognized as a valuable source of renewable energy. With
the application of chemical engineering principles, wastewater treatment plants can be transformed into energy-generating systems that support sustainability and circular economy concepts.

- **What Is Wastewater-to-Energy?**

Wastewater-to-energy refers to the recovery of usable energy from municipal and industrial wastewater during the treatment process. Wastewater contains a significant amount of biodegradable organic matter, which stores chemical energy. Instead of wasting this energy, modern treatment technologies convert it into useful forms such as biogas, electricity, and heat.

- **Energy Potential in Wastewater**

Wastewater typically contains:

1. Organic matter measured as BOD (Biochemical Oxygen Demand) and COD (Chemical Oxygen Demand)
2. Suspended and dissolved solids
3. Nutrients such as nitrogen and phosphorus

4. These components represent a considerable amount of stored chemical energy, which can be recovered through biological and thermal processes.

- **Key Technologies for Energy Recovery**

1. Anaerobic Digestion

Anaerobic digestion is the most widely used wastewater-to-energy technology. In this process, microorganisms decompose organic matter in the absence of oxygen and produce biogas, mainly consisting of methane and carbon dioxide. The biogas can be used to generate electricity or heat.

2. Microbial Fuel Cells (MFCs)

Microbial fuel cells use electrochemically active bacteria to directly convert chemical energy present in wastewater into electricity. Although still under development, this technology offers a low-energy treatment option with direct power generation.

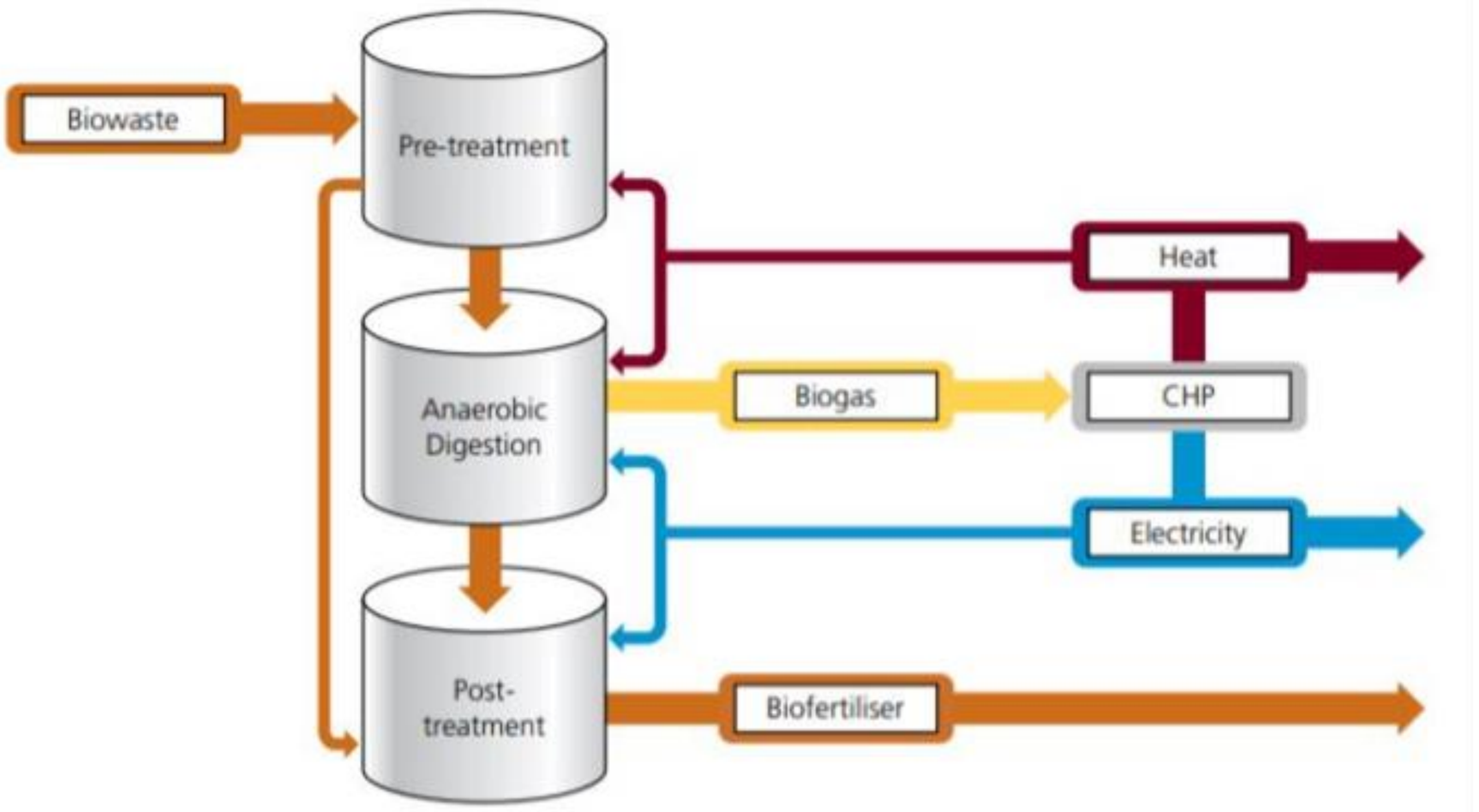
3. Thermal Sludge Treatment

Sludge produced during wastewater treatment can be treated using incineration, pyrolysis, or gasification. These processes convert sludge into heat energy or syngas, which can be used for power generation.

4. Algal-Based Systems

Algae grown in wastewater consume nutrients and produce biomass. This biomass can later be converted into biofuels such as biodiesel or biogas, providing both wastewater treatment and energy recovery.

- **Anaerobic digestion (AD) process:**



- Input: Biowaste

  Organic waste materials enter the system.

- Pre-treatment

  The biowaste first goes through pre-treatment (e.g., sorting, shredding, mixing with water to create a slurry, or pasteurization/hygiene treatment to remove contaminants and prepare it for digestion).

- **Anaerobic Digestion**

The pre-treated material flows into the main anaerobic digester tank. In this sealed, oxygen-free environment, bacteria break down the organic matter in stages (hydrolysis, acidogenesis, acetogenesis, and methanogenesis). This produces biogas (primarily methane ~60% and CO_2 ~40%, with traces of other gases) and a semi-liquid residue called digestate.

- **Outputs from Digestion:**
  - Biogas : Collected from the top of the digester and typically upgraded (purified to remove impurities like H_2S or CO_2).
  - Digestate : The remaining nutrient-rich material exits the bottom of the digester.
- **Post-treatment**

The digestate undergoes further processing (e.g., separation into liquid and solid fractions, drying, or composting) to produce a stable biofertiliser suitable for agricultural use.

- **Overall Benefits**
  - This process converts waste into:
  - Renewable energy (electricity and heat)
  - Valuable biofertiliser (replacing chemical fertilizers and
  - returning nutrients to soil)
  - It also reduces greenhouse gas emissions by capturing methane that would otherwise escape from waste decomposition. This is a common setup in biogas plants worldwide for sustainable waste management and energy production.

- **Benefits of Wastewater-to-Energy Systems**
  - Reduces energy consumption of treatment plants
  - Lowers greenhouse gas emissions
  - Converts waste into valuable energy
  - Reduces sludge disposal problems
  - Supports the circular economy concept

- **Indian Scenario**

  In India, rapid urbanization has increased wastewater generation. Government initiatives such as:
  - Swachh Bharat Mission
  - National Mission for Clean Ganga
  - National Bio-Energy Mission
  - Encourage sustainable wastewater management and energy recovery. Several sewage treatment plants in Indian cities have already adopted biogas-based power generation.

- **Conclusion**

  Wastewater is no longer just a disposal problem; it is a hidden energy resource. By adopting wastewater-to-energy technologies, treatment plants can become sustainable energy hubs. For future chemical engineers, this field offers immense opportunities to design systems that address both environmental protection and energy generation.

Machhi Krutik Manishbhai
Enrollment no.: 250102301323
Department/branch: BE- Chemical engineering
Sem: 4

Literary Section

Poem

"Rise of the New Fire"

A spark is born in silent night,

From ashes glows a fearless light.

Dreams once dim now start to rise,

Painting hope across the skies.

Each failure feeds the flame anew,

Each tear gives strength to start and do.

The world may chill, the winds may tire,

But hearts still burn with endless fire.

For every end, a dawn appears

A new fire blooms beyond our fears.

Ms.Jagruti Chauhan

EST-Faculty

ROLE OF SCIENCE IN HUMAN LIFE

Science plays a very important role in human life. It has completely changed the way we live and work. From morning to night, we use science in some form or the other. It has made human life easier, faster, and more comfortable.

Science has brought great improvement in the field of healthcare. Many dangerous diseases can now be cured with the help of medicines, vaccines, and modern machines. Hospitals use advanced technology for diagnosis and treatment, which has increased the average life span of human beings.

In communication and transportation, science has done wonders. Mobile phones, the internet, and satellites help people connect with each other instantly, even across long distances. Trains, cars, buses, and airplanes have reduced travel time and made journeys more convenient.

Science has also improved education and agriculture. Computers, smart classes, and online education have made learning easier and more effective. In agriculture, scientific tools, fertilizers, and modern techniques help farmers produce more food for the growing population.

However, misuse of science can be harmful. Pollution, environmental damage, and weapons are negative effects of science. Therefore, science should be used wisely for the welfare of mankind.

In conclusion, science is a great blessing to human life. If used properly, it can make the world a better, safer, and more developed place.

Kartik Pandey
Enrollment no.: 240102102003
Department/branch: BE- Chemical engineering
Sem: 4

Literature Review

Human Intelligence vs. Artificial Intelligence

1. Introduction:-

In the field of chemical engineering, decision-making, problem-solving, and process optimization rely heavily on human intelligence. In recent years, artificial intelligence (AI) has emerged as a powerful tool to support chemical engineers in design, analysis, control, and optimization of chemical processes. Human intelligence and AI are often compared because both aim to analyse data, solve complex problems, and improve efficiency. This literature review discusses the differences and interactions between human intelligence and artificial intelligence with specific relevance to chemical engineering applications.

2. Human Intelligence in Chemical Engineering:-

Human intelligence plays a crucial role in chemical engineering practice. Chemical engineers use logical reasoning, creativity, and experience to design processes, select equipment, ensure safety, and solve plant operation problems. Human intelligence allows engineers to understand physical

phenomena such as mass transfer, heat transfer, thermodynamics, and reaction kinetics beyond mathematical equations. An important aspect of human intelligence is judgment and ethical responsibility. Chemical engineers must consider safety, environmental impact, sustainability, and economic feasibility while designing and operating chemical plants. Engineers can adapt to unexpected plant conditions, equipment failure, or raw material variations using intuition and prior experience, which remains difficult for AI systems to fully replicate.

3. Artificial Intelligence in Chemical Engineering:-

Artificial intelligence refers to computational techniques that enable machines to perform tasks such as learning from data, pattern recognition, prediction, and optimization. In chemical engineering, AI techniques like machine learning, artificial neural networks, fuzzy logic, and genetic algorithms are widely used. AI is mainly applied in areas such as process modelling, fault detection, process control, optimization, and predictive maintenance. For example, AI models

can predict reactor performance, estimate physical properties, optimize operating conditions, and analyse large datasets generated from sensors in chemical plants. Most AI systems used in chemical engineering are examples of narrow AI, designed for specific tasks and operating under defined conditions.

4. Comparison between Human Intelligence and AI in Chemical Engineering:-

Human intelligence and AI differ significantly in their working principles. Human engineers can understand cause-and-effect relationships and apply theoretical knowledge to new situations. AI systems depend heavily on historical data and may perform poorly when operating conditions change beyond the training range. Human intelligence excels in creative process design, safety analysis, and ethical decision-making. AI, on the other hand, performs better in handling complex calculations, real-time data processing, and optimization of multi-variable systems. For instance, AI can quickly optimize process parameters in distillation, heat exchangers, or reactors, while engineers validate and interpret the results.

Therefore, AI is best viewed as a decision-support tool that enhances the capabilities of chemical engineers rather than replacing them.

5. Industrial Applications and Impact:-

The integration of AI and human intelligence has transformed the chemical and process industries. AI-
based tools are used in advanced process control, quality monitoring, energy optimization, and supply chain management. These technologies help improve productivity, reduce energy consumption, and enhance process safety.

However, challenges such as data quality, model reliability, ethical use of AI, and workforce adaptation remain important concerns. Chemical engineers must be trained to work effectively with AI tools while maintaining core engineering knowledge.

6. Future Scope for Chemical Engineers:-

Future developments focus on hybrid intelligence systems that combine human expertise with AI capabilities. Chemical engineers will increasingly use AI for digital twins, smart manufacturing, and sustainable process design. Explainable and trustworthy AI models will play a key role in gaining acceptance in the chemical industry.

Despite technological advancements, human intelligence will remain essential for innovation, ethical decision-making, and overall system responsibility in chemical engineering.

7. Conclusion:-

In conclusion, human intelligence and artificial intelligence serve complementary roles in chemical engineering. Human intelligence provides creativity, theoretical understanding, ethical judgment, and adaptability, while AI offers speed, accuracy, and data-driven optimization. The effective collaboration between chemical engineers and AI systems is essential for achieving safe, efficient, and sustainable chemical processes

Vrunda Patel
Enrollment no.: 230102301010
Department/branch: BE- Chemical engineering
Sem: 8

Literature Review

Engineering Sustainability in India

The Role of Environmental Science and Technology in Nation Building India stands at a defining moment in its developmental journey. As one of the fastest-growing economies in the world, the nation faces a dual challenge: sustaining economic growth while protecting its fragile environment. Rapid industrialization, urban expansion, population growth, and climate change have intensified issues such as air and water pollution, waste mismanagement, biodiversity loss, and resource depletion. In this critical scenario, Environmental Science and Technology Engineering plays a transformative role by providing scientific, technological, and sustainable solutions tailored to India's unique environmental conditions.

India's environmental challenges are diverse and region-specific. Metropolitan cities struggle with hazardous air Quality, rivers like the Ganga and Yamuna face severe pollution, and rural areas experience water scarcity and soil degradation. Climate change has further aggravated these issues through irregular monsoons, floods, droughts, and rising temperatures. Traditional development models focused on short-term economic gains have proven insufficient, making sustainable engineering approaches essential.

Environmental engineers in India contribute significantly to pollution control, resource management, and infrastructure development. They design and operate wastewater treatment plants, air pollution control systems, solid and hazardous waste management facilities, and renewable energy projects. National initiatives such as Swachh Bharat Abhiyan, Namami Gange Mission, Jal Jeevan Mission, and the National Action Plan on Climate Change depend heavily on environmental engineering expertise to achieve their objectives.

Technological innovation acts as a powerful tool for sustainability. The use of Geographic Information Systems (GIS), remote sensing, and environmental modeling improves planning, monitoring, and disaster management. India’s rapid expansion of renewable energy—especially solar and wind—demonstrates how environmental technology can reduce carbon emissions while supporting economic development. Environmental engineers ensure these systems are efficient, affordable, and environmentally responsible through life-cycle assessments.

Environmental degradation directly affects public health in India. Air pollution-related diseases, waterborne infections, and improper waste disposal pose serious risks to vulnerable communities. Environmental engineers safeguard public health by ensuring clean water supply, proper sanitation, and safe waste management. The COVID-19 pandemic further highlighted the importance of biomedical waste management and environmental hygiene.

Environmental engineers also carry strong ethical responsibilities. In a country as populous as India, engineering decisions have long-term social and ecological consequences. Engineers must balance development with conservation, ensuring sustainable resource use and intergenerational equity. Concepts such as circular economy, green infrastructure, and sustainable urban planning are shaping India’s environmental future.

The future scope of Environmental Science and Technology Engineering in India is vast and promising. Smart cities, climate-resilient infrastructure, carbon-neutral industries, and nature-based solutions will require skilled environmental engineers. As India moves toward sustainable development goals, environmental engineers will serve as key contributors to nation building.

In conclusion, Environmental Science and Technology Engineering is a cornerstone of India’s sustainable development. It empowers engineers to address environmental challenges through innovation, ethics, and scientific expertise. As aspiring environmental engineers, students bear the responsibility of designing solutions that protect natural resources, enhance public health, and ensure a sustainable future for the nation.

NAME: Zeel Solanki
Enrollment no.: 240102105010
Department/branch: BE- EST
Sem: 4th

Inter department Sports Events

UPL University of Sustainable Technology successfully organized the Inter-Department Sports Competition with great enthusiasm and active participation from students of various departments. The primary objective of this event was to identify and select talented players for the University teams in different disciplines such as Basketball, Volleyball, Kabaddi, Athletics, Badminton, Chess, Table Tennis, and other sports. The competition not only provided a platform to showcase the sporting skills and physical abilities of students but also encouraged teamwork, discipline, and sportsmanship.

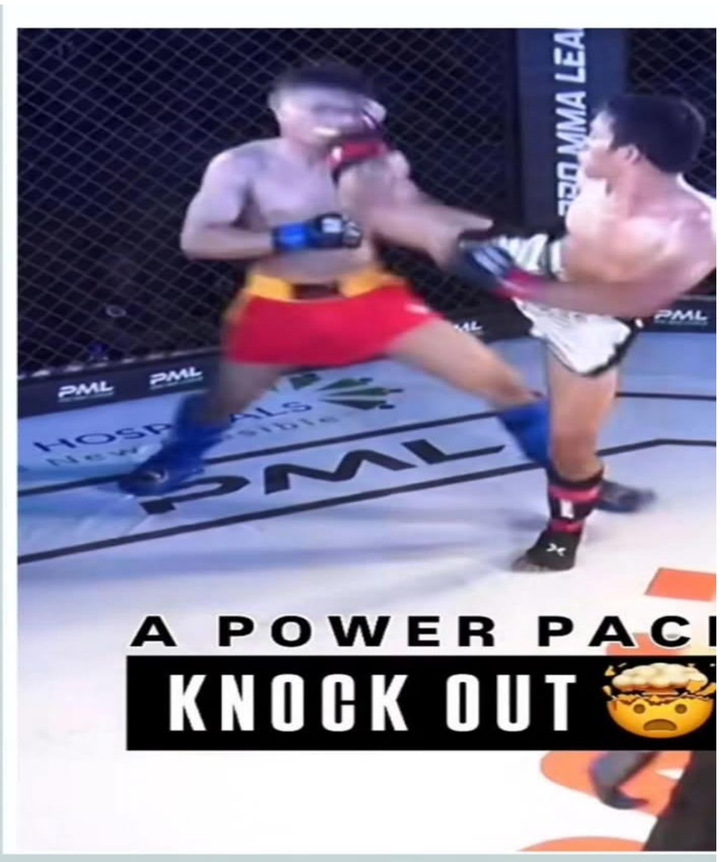
The selected players will represent the University in the upcoming prestigious Khel Mahakumbh 2025. To ensure better preparation and performance, systematic and regular practice sessions have been scheduled under the guidance of the Sports and Cultural Coordinator. This initiative reflects the University’s strong commitment towards promoting physical fitness, nurturing sporting excellence, and motivating students to achieve higher levels of success at district, state, and national level competitions.

The UPL University Women’s Basketball Team, comprising Shradha Badgujar (Diploma CO), Bhumi Patil & Kanchan Bhalerao (B.Sc. Microbiology), Nidhi Chauhan (B.E. CE), and Sunaina Saini (B.Sc.), proudly represented the university in the Gujarat State Basketball Championship 2025, following their outstanding performance in the district-level selection trials. In their debut appearance, the team played two matches in the preliminary round—while the first match was lost to Surat Dist, the players made an impressive comeback by winning their second match against Mehsana Dist. Their determination, discipline, and teamwork truly reflected the growing sports excellence at UPL University. Adding to this memorable achievement, the students also had the special opportunity to meet and interact with international basketball players, and captured photographs with the Income Tax Basketball Team, greatly enriching their sporting journey. On behalf of UPL University, we proudly congratulate all the players, coaches, and supporters for this remarkable effort and for making this first-ever state-level participation a historic milestone for the university.

Achievement in National Level PMA (Pro Mix Martial Art) Championship

We are delighted to announce that Mr. Yash Mane, a student of Diploma in Computer Engineering (2nd Year) at UPL University of Sustainable Technology, has brought immense pride to our university by winning the Gold Medal in the PMA (Pro Mix Martial Art) National Level Championship, held at the Andheri Sports Complex, Mumbai, on 26th October 2025.

Yash exhibited outstanding talent, discipline, and determination throughout the competition. With this remarkable achievement, he has also qualified for the prestigious “One Lakh Championship Fight of India.



NCC activities

One of our, SUO Abhishek Rajbhar got selected in RDC in the PM Rally category

We are delighted to share that our NCC cadet SUO. Abhishek Rajbhar has been selected to represent the Gujarat Directorate in the prestigious Republic Day Camp (RDC), New Delhi, under the PM Rally category.

This achievement comes after successfully clearing multiple levels of rigorous selection camps, where he stood out among thousands of cadets from across the Gujarat Directorate.

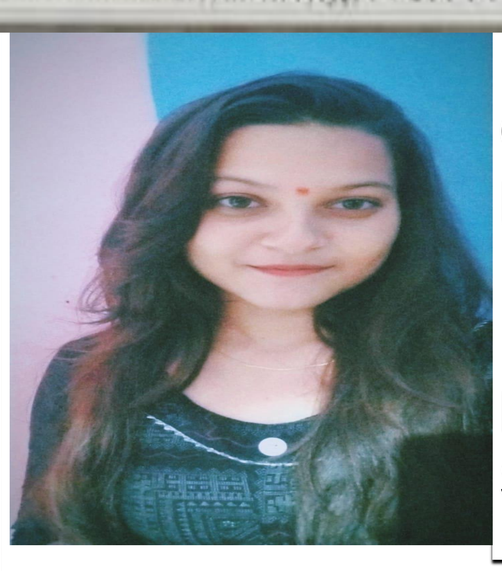
We extend our heartfelt congratulations to SUO Abhishek Rajbhar for this remarkable feat and wish him continued success in bringing glory to our institution and the directorate.

NSS: Old Clothes Distribution drive

National Service Scheme of UPL University of Sustainable Technology, Vataria, organized an Old Cloth Distribution drive on 27 November 2025 to support the housekeeping staff of the university campus. More than 50 housekeeping personnel benefited from this initiative, and their warm expressions of gratitude reflected the positive impact of the effort. The activity showcased the commitment and compassion of the NSS team of UPL University.

Students' Corner

❖ Mandala Art:



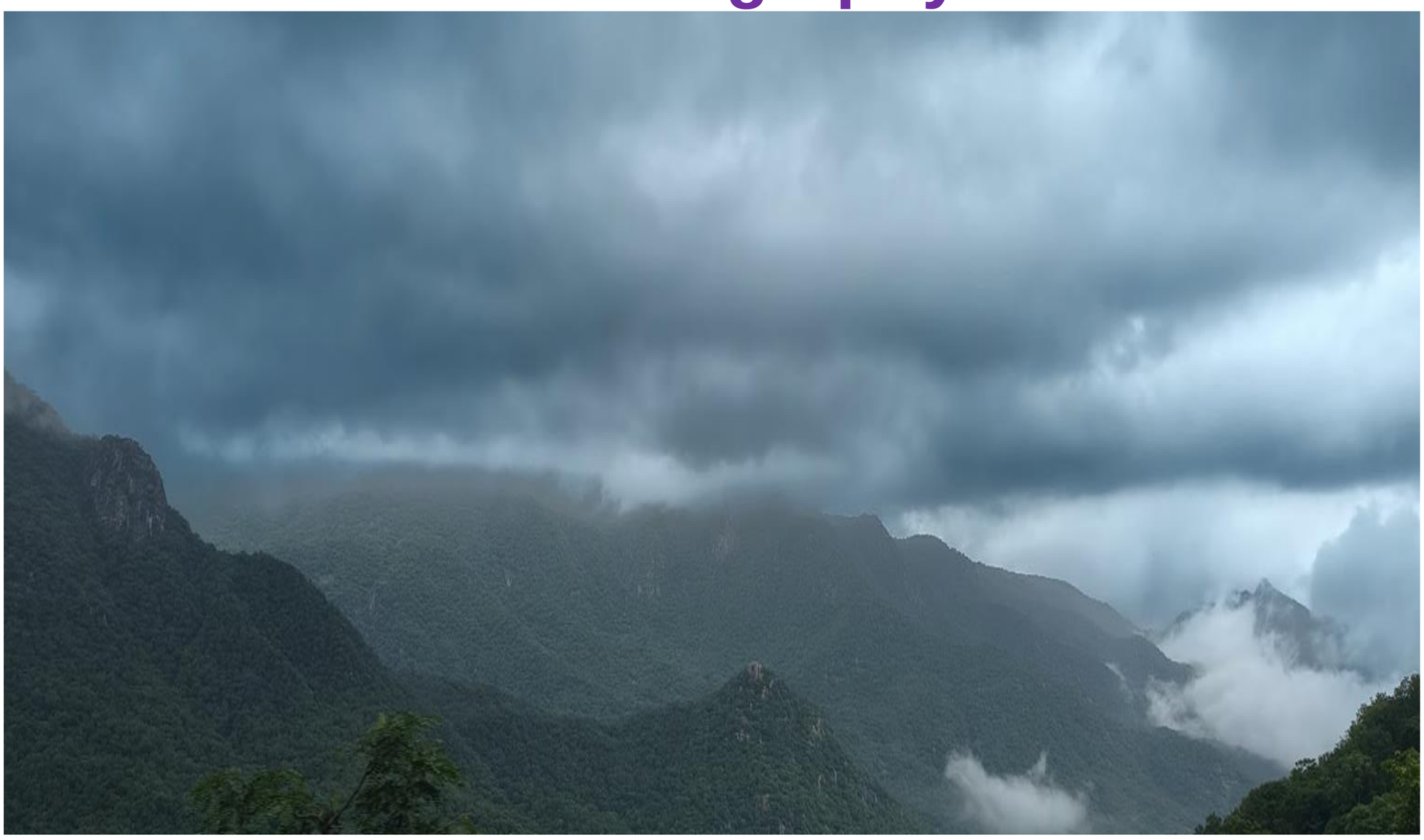
Geetanjali Pal
Enrollment no.: 250101113004
DE-Environment Engineering
Sem: 2nd

Mahek Prajapati
Enrollment no.: 240102106006
M.Sc Chemistry

Capture The Moment

NAME: Vrunda Dhwanil Patel
Enrollment no.: 230102301010
Department/branch: BE- Chemical engineering
Sem: 8th

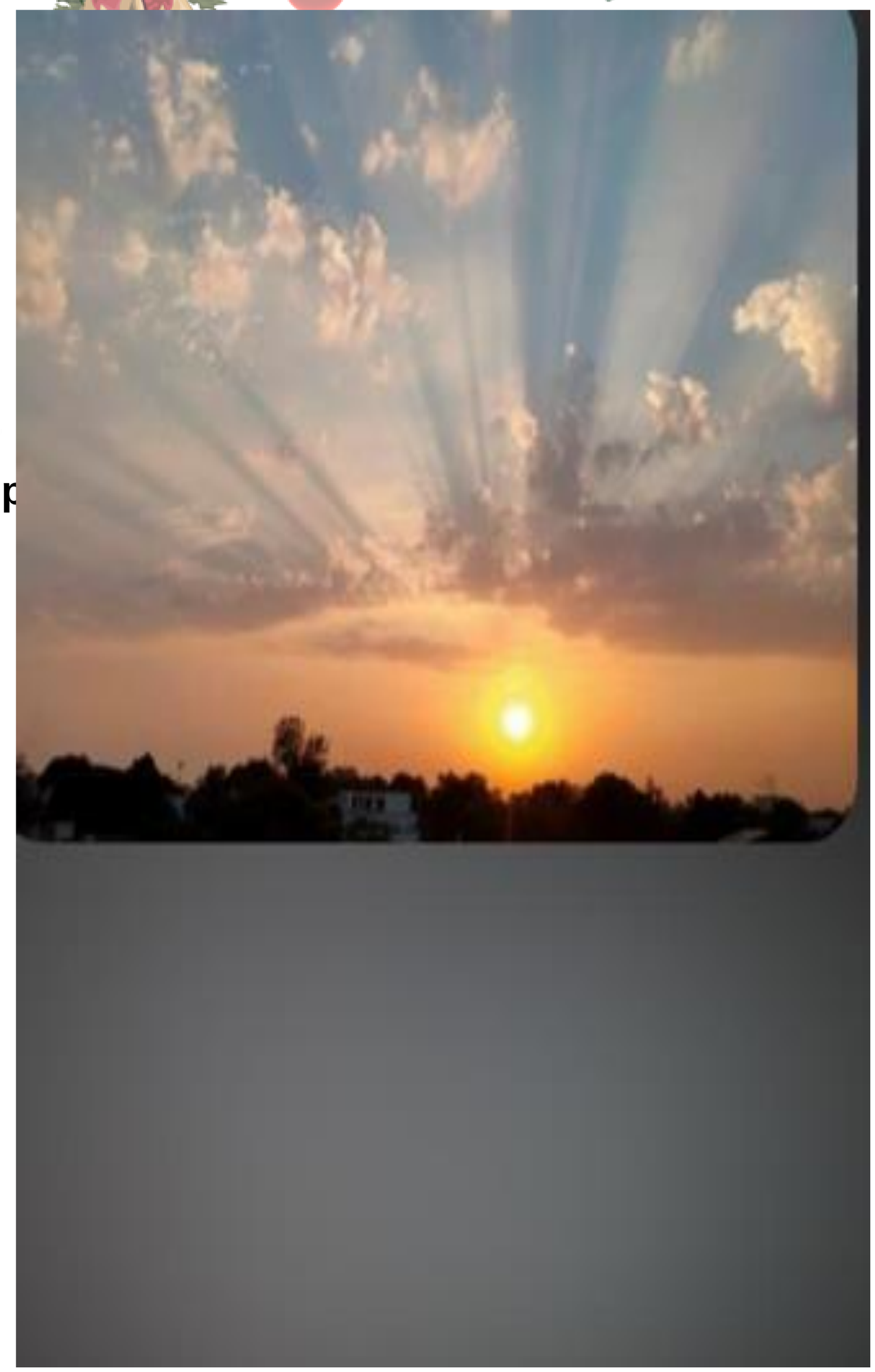
❖Photography



NAME: Mahek Patel
Enrollment no.: 230101116033
DE- Information Technology
Sem: 6th

NAME: Dhrumi Patel
Enrollment no.: 230101103037
DE -Computer Engineering
Sem: 6th

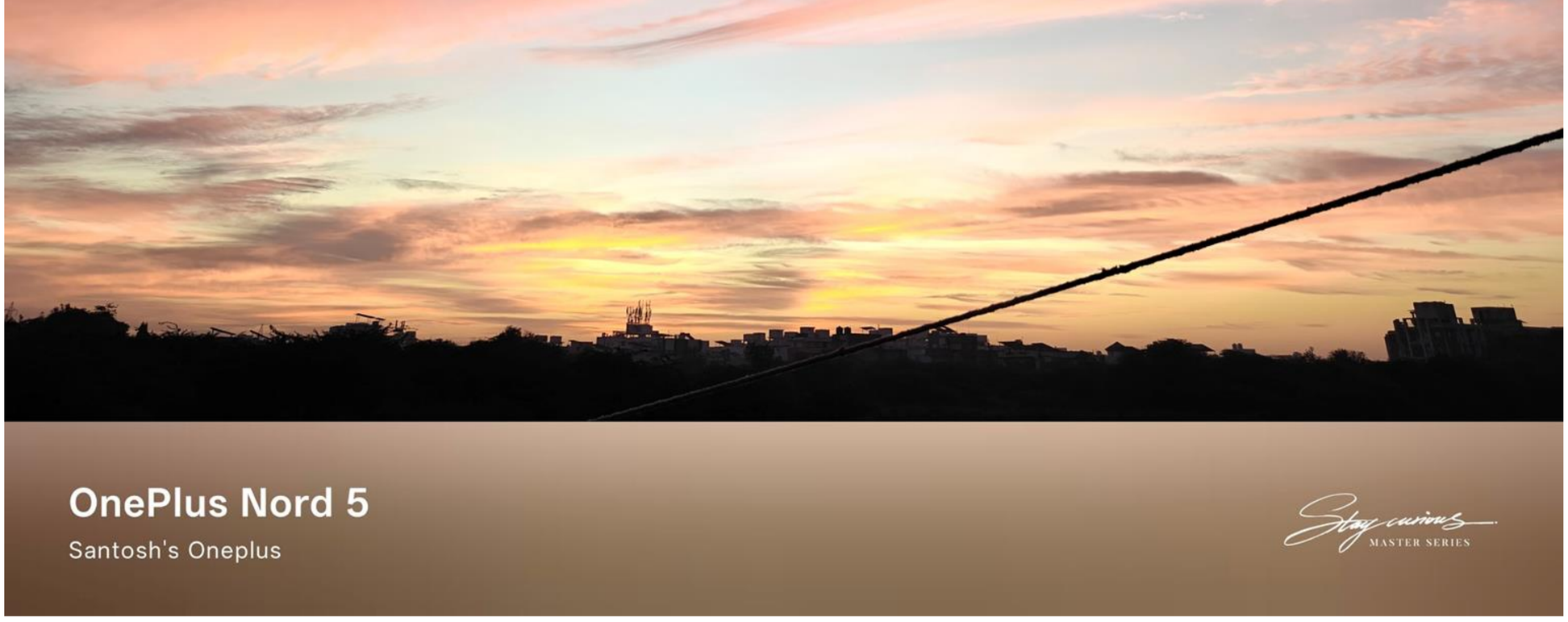
❖Photography



NAME: Nitika Pandey
Enrollment no.: 230101103037
Department/branch: DE -Comp
Engineering
Sem: 6th

NAME: Meet Patel
Enrollment no.: 240102105007
Department/branch: B**E -EST**
Sem: 4th

❖Photography

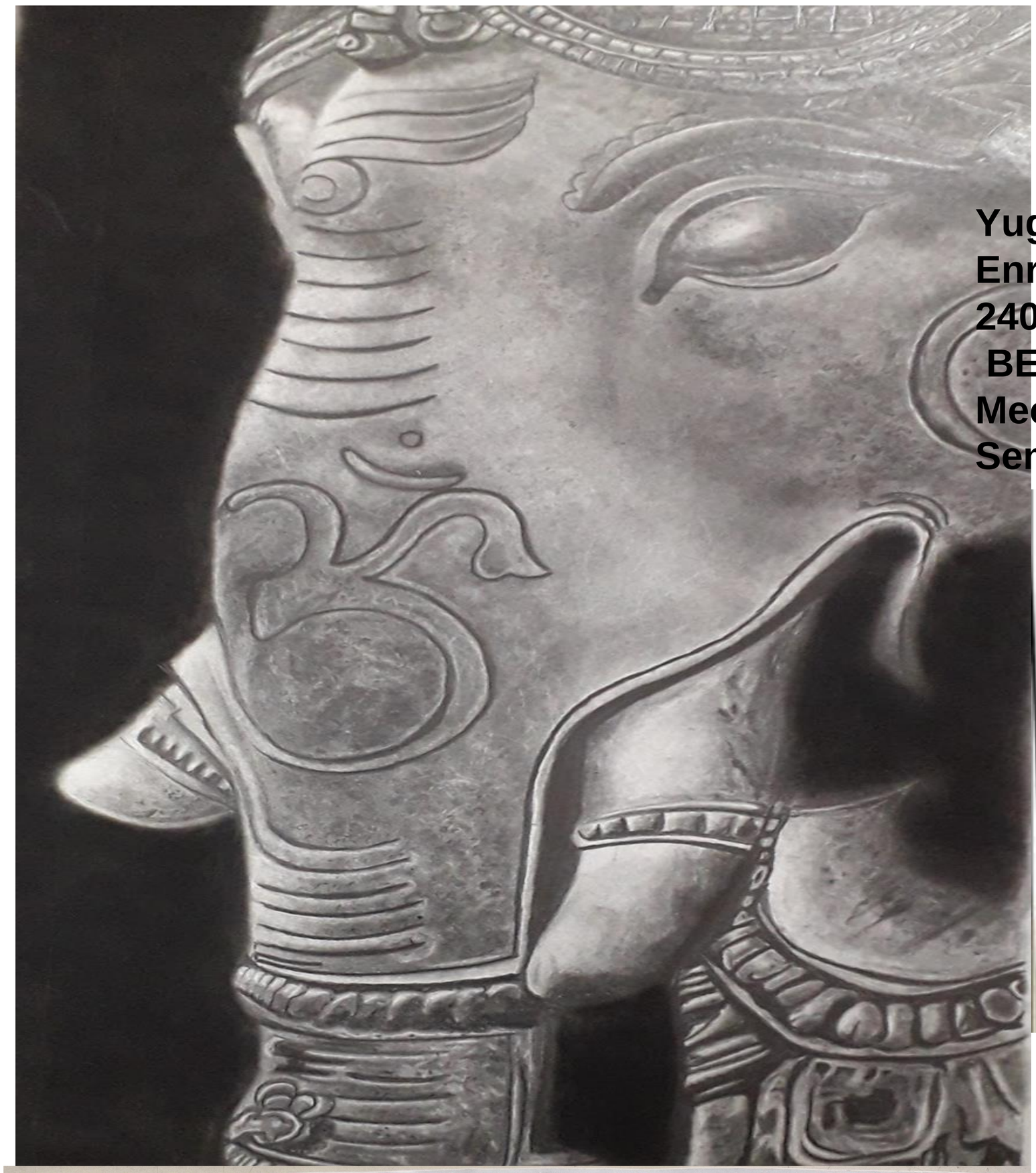


NAME: Mahek Patel
Enrollment no.: 230101116047
Department/branch: DE- Information Technology
Sem: 6th

❖Drawing:

NAME: Jay Parmar
Enrollment no.: 250101301309
Department/branch: DE -Chemical Engineering
Sem: 4th

❖Drawing:



Yug Rathod
Enrollment no.: 240102106006
BE - MechanicalEngineering
Sem: 4th

Mahek Prajapati
Enrollment no.: 240102106006
M.Sc Chemistry
Sem: 2

UPL UNIVERSITY
OF
SUSTAINABLE TECHNOLOGY

Block No.402,Ankleshwar-Valia Road,
Taluka: Valia,District:Bharuch-393135
TEL:+91-9712177799
MOBILE:9727745875/76

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