ESPOIR

SAINTGITS
LEARN GROW EXCEL

DEPARTMENT OF CHEMICAL ENGINEERING
SAINTGITS COLLEGE OF ENGINEERING
(AUTONOMOUS), KOTTAYAM

OUR PATRON SAINT

"FUTURE BELONGS TO THOSE WHO BEAR THE TORCH OF WISDOM PASSED ON FROM GENERATION TO GENERATION WITH THE HANDS OF EDUCATION. EDUCATION IS THE ONLY POWERFUL INSTRUMENT TO FIGHT AGAINST SOCIAL EVILS. THE GLORY OF KNOWLEDGE CONSIST IN THE GLORY OF GOD."

SAINT GREGORIOS OF PARUMALA

Vision

To emerge as a centre of excellence in Chemical Engineering committed to sustainable progress of the society.

Mission

1. Provide high-quality education to the students transforming them into adept professionals capable of catalyzing positive change in the society.
2. Promote leadership qualities that prioritize sustainable development while fostering confidence and holistic growth.
3. Cultivate the spirit of entrepreneurship, innovation and applied research ensuring effective response to industry needs.

Programme Educational Objectives (PEOs)

After 3 -5 years, graduates of the Chemical Engineering programme will:

PEO 1: Practice as successful professionals and entrepreneurs capable of facing challenges in the industrial sector.

PEO 2: Pursue advanced studies and excel as academicians and researchers.

PEO 3: Become proficient in communication, teamwork and leadership with an ethical attitude committed to the sustainable progress of the society.

MESSAGE FROM HOD DESK

Dear students and colleagues,

I am immensely proud of the strides we continue to make in advancing research, innovation, and academic excellence. Our students and faculty are engaged in cutting-edge projects that address global challenges, from sustainable energy solutions to advanced materials. This magazine reflects our department's commitment to nurturing creativity, critical thinking, and a passion for problem-solving.

I encourage all students to actively participate in these endeavors, as they lay the foundation for a bright future ahead. Let's continue to strive for excellence together!

Dr. Anshy Oonnittan
Head of Department, Chemical Engineering

EDITORIAL MESSAGE

In challenging times, hope, Espoir becomes our guiding light. It drives us forward, sparking innovation and resilience as we confront the complexities of our academic and professional lives. This edition of our magazine is dedicated to exploring the powerful force of hope and its role in shaping a better future.

Through the contributions of our writers, we see hope manifest in groundbreaking research, sustainable solutions, and inspiring personal stories. These narratives remind us that hope is not just an abstract concept but a catalyst for progress and change. It encourages us to dream beyond the present, to view setbacks as opportunities for growth, and to persist in our pursuit of knowledge and solutions.
As you read through these pages, may you find inspiration in the diverse expressions of Espoir. Let it remind you that, no matter the challenges we face, hope is always present, pushing us toward a brighter, more promising future.

Carry this hope with you—in your studies, your careers, and your lives—as we continue to work together to create a world where the promise of tomorrow is worth striving for.

Team Espoir

MESSAGE FROM STAFF EDITOR

Dear Readers,

As the staff editor for this edition, I am pleased to introduce our theme: Espoir, the French word for "hope." In these pages, we explore the many dimensions of hope, a universal concept that transcends cultures and unites us in our aspirations for a brighter future. Amidst global challenges and uncertainties, hope remains a guiding beacon, inspiring resilience and igniting our determination to build a better tomorrow. This theme encourages us to embrace the small, often overlooked moments of hope that collectively shape the course of our lives.

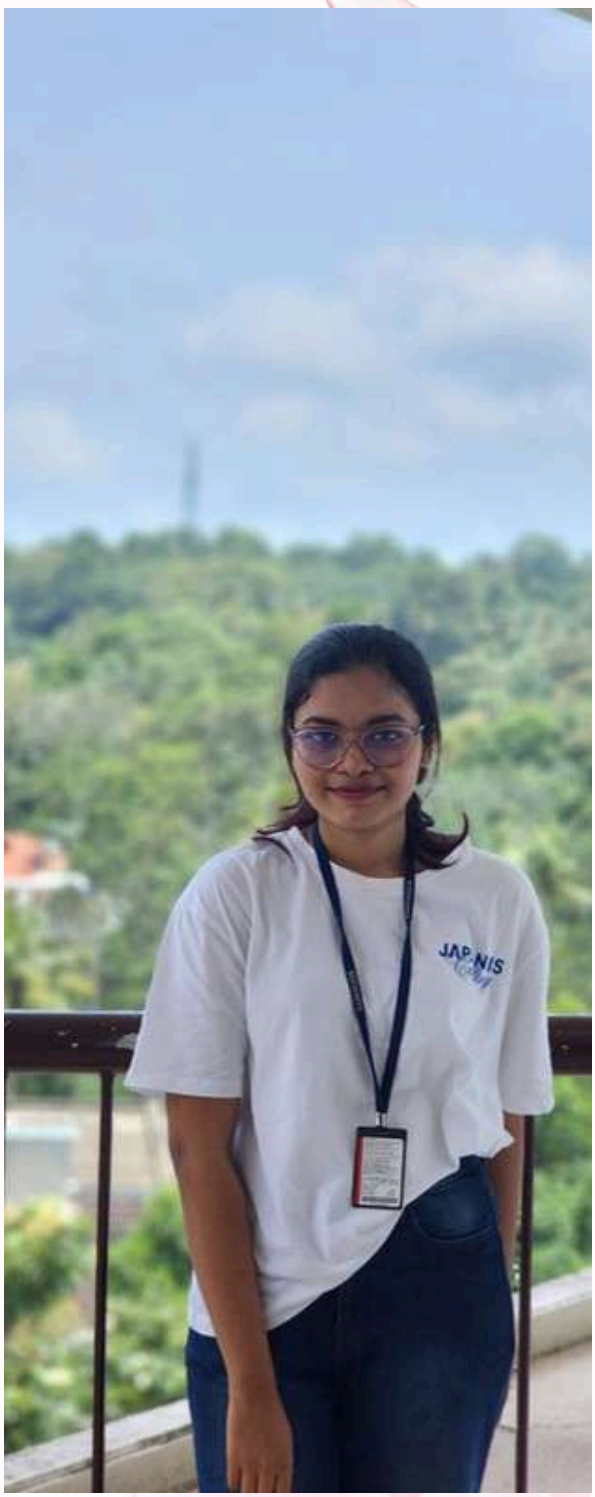
This issue presents a rich tapestry of narratives, insights, and creative expressions that celebrate hope in its many forms. From personal triumphs over adversity to innovative solutions addressing global issues, our contributors showcase stories of individuals and communities making a difference. Their work reflects the enduring strength of the human spirit and the transformative power of hope, offering us all a reminder that hope can be found in the most unexpected places.

Thank you for joining us on this exploration of Espoir. May the stories within inspire you to embrace hope as a guiding light and a call to action, both in your personal journey and in our shared pursuit of a world where hope thrives and flourishes. Let these pages serve as a reminder that no matter how daunting the challenges may seem, hope can spark the change we need.

With Regards
Akash Balakrishnan
Assistant Professor/ Chemical Engineering

MESSAGE FROM STUDENT EDITOR

As the student editor for this edition, I'm excited to present our theme: "Espoir", meaning "hope". In this issue, we explore how hope transcends cultures and connects us in our quest for a brighter future. It is the light that guides us through difficulties, fuels our creativity, and motivates us to strive for a better world.



Within these pages, you'll discover a tapestry of stories, insights, and creative works celebrating hope. From personal victories and innovative solutions to reflections on its impact, our contributors have crafted pieces that showcase the resilience of the human spirit.

Thank you for joining us on this journey. We hope these stories inspire you to hold onto hope, both as a personal guide and a collective call to action.

Best regards,

Joshiya Mary Jacob
Batch of 2022-26

MESSAGE FROM ASSOCIATE STUDENT EDITOR

As the Associate Student Editor, design and layout for this edition of Espoir, I am honored to contribute to our exploration of hope. This magazine is a testament to the incredible talent and creativity within our college community, showcasing stories and perspectives that inspire and uplift. Working alongside a dedicated team has been both a privilege and a learning experience, and I'm grateful for the opportunity to help bring these powerful narratives to life.

Thank you to all our contributors for your compelling work and to our readers for your support. May the stories within Espoir inspire you to find and nurture hope in your own journey.

With regards,
Johan Biju Thomas
Batch of 2022-26

MESSAGE FROM ASSOCIATE STUDENT EDITOR

As an Associate Editor content development for Espoir, I'm thrilled to be part of this special edition exploring the theme of hope. Working on this magazine has been an enriching experience, allowing me to engage with diverse voices and stories that capture the essence of optimism and resilience. Collaborating with such a talented team has been truly inspiring.

I extend my heartfelt thanks to all our contributors for their thought-provoking pieces and to our readers for your enthusiasm and support. May this edition of Espoir remind us all of the power of hope and its ability to light the way forward.

With Regards,
Mohammad Shahzad T. S.
Batch of 2022-26

STUDENT EDITORIAL TEAM

Joshiya Mary Jacob
Editor

Johan Biju Thomas
Associate Editor Design and layout

Mohammad Shahzad T. S.
Associate Editor Content development

Meenu M
Opinion Editor

Alvin Tenny
Art Director

Amal Mathew
Copy Editor

Supporting team

Nikita Saara Renji

Sarangi Subhash

Raees

"Words have the power to plant seeds of change, and through stories, we nurture the hope that tomorrow will be brighter"

Espoir 2024

TEACHERS !!

Teachers light the way, inspire the mind, and shape the future. Their impact echoes through every lesson and lasts a lifetime

Wayanad Landslides: A Tragedy and the Hope of Lives

Akhil Asokan
Assistant Professor

Natural disasters often leave scars, both on the land and in the hearts of the people who live through them. Wayanad, a beautiful district nestled in the Western Ghats of Kerala, has been no stranger to such calamities. In recent years, Wayanad has witnessed devastating landslides, especially during the monsoon season. The cascading earth has not only uprooted trees and homes but also shattered the lives of many who depended on the land for survival. However, amidst the chaos and destruction, hope emerges, reminding us of the resilience of life and the human spirit.

The Tragedy of Wayanad Landslides

The landslides in Wayanad have been triggered by a combination of heavy rainfall, deforestation, and human interference with the natural ecosystem. Once lush forests and hills have been eroded, weakened by unplanned construction and deforestation, making the region more vulnerable to landslides. When the rains come, the land—already strained—gives way, causing mud and rock to sweep down the slopes. Houses are buried, roads are cut off, and lives are lost.

Hope in the Midst of Despair

In 2019, the landslides in Puthumala and Meppadi made headlines across the country, bringing Wayanad's struggles to the forefront. Entire villages were buried beneath the rubble, and rescue operations were hampered by the difficult terrain. People lost not only their homes but also their sense of security. Crops were destroyed, livelihoods shattered, and the landscape was left scarred. It seemed as if hope had been washed away with the rains.

Hope in the Midst of Despair

Yet, in the darkest of times, the human spirit often finds a way to rise. The response to the Wayanad landslides has been a testament to this. Rescue teams, both local and national, worked tirelessly, risking their own lives to save those trapped beneath the debris. Neighbors reached out to one another, providing shelter, food, and comfort to those who had lost everything. Strangers donated resources, and volunteers from all over Kerala came to help rebuild.

Hope in Wayanad's context is not just about surviving the immediate disaster—it is about rebuilding lives. The resilience of the people who returned to the land, determined to rebuild their homes and livelihoods, stands as a symbol of hope. For many, the land is more than just property; it is their heritage, the source of their identity. Reclaiming that land, even after tragedy, speaks volumes about the power of hope and the human connection to the earth.

A Broader Message of Hope

The Wayanad landslides also teach a broader lesson about hope in the face of climate change and environmental degradation. While the landslides were a direct result of heavy rains, the underlying causes—deforestation, unsustainable development, and poor land management—are problems of human origin. There is hope that by learning from these disasters, communities and governments can work towards more sustainable solutions, protecting both the land and the people who live on it.

Reforestation efforts in Wayanad have already begun. Many environmentalists are working with local communities to replant native trees, stabilize soil, and restore ecosystems. These efforts are not just about preventing future landslides but also about restoring hope. A healthy environment can provide food, water, and livelihoods, and more importantly, it can offer a sense of security and stability to those who depend on it.

The Human Spirit and the Power of Hope

Hope, after all, is not just a passive feeling—it is an active force that drives people to rebuild, recover, and keep moving forward. The people of Wayanad, despite having faced tremendous loss, are examples of this. They continue to plant, to build, and to live with a determination that mirrors the resilience of the land itself. For every tree that falls in a landslide, new trees are planted; for every home destroyed, a new foundation is laid.

The landslides in Wayanad are a reminder of the fragility of life and the power of nature, but they also reveal the strength of the human spirit. Through community support, environmental restoration, and the will to continue despite adversity, hope remains alive in Wayanad. The land may shift, but hope does not falter—it finds a way to shine, like a sliver of light through the darkest clouds.

In the end, the story of Wayanad is not just one of destruction; it is a story of hope, resilience, and the enduring connection between people and the land they call home. The hills may tremble, but the spirit of those who live there remains unshaken.

NATURE'S PALETTE IS THE MOST VIVID MASTERPIECE

Naveen S Lal
Batch of 2022-2026

The socio-economic future of fashion industry

NADIA S
Batch of 2023-27

The socio-economic future of the fashion industry is one of the important area in this era. The fashion industry is at a crossroads, driven by rapid technological advancements, shifting consumer preferences, and an increasing emphasis on sustainability and ethics.

Technological advancements: The digitalization of retail through e-commerce and social media platforms is transforming how consume interact with fashion brands. Technological like artificial intelligence and big data are enhancing personalization and trend forecasting.

Sustainability and ethical practices: Environmental concerns are prompting the fashion industry to adopt more sustainable practices. consumers are increasingly prioritizing eco-friendly and ethically produced produced products, pushing brands to reduce their carbon footprint and embrace circular fashion models. This shift towards sustainability is becoming a significant factor in brand loyalty and market differentiation.

Economic implications: Globalization has allowed fashion companies to access diverse markets and labour pools, but it also exposes them to supply chain vulnerabilities. The COVID-19 highlighted the need for more resilient and localized supply chains.

Achieving a Timelessly Elegant Look

The socio-economic future of the fashion industry hinges on its ability to adapt to technological innovations, embrace sustainability, and meet the evolving demand of conscious consumers. Brands that successfully navigate these challenges will thrive, balancing economic growth with social and environmental responsibility. As the industry continues to evolve, its commitment to creating a more sustainable and equitable future will be crucial for its long term success

CONVOCATION DAY 2024

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"Success is not a the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful." — Albert Schweitzer

Through the Keyhole

Maya stood before the old wooden door, her heart heavy with the weight of the past year. She had knocked on so many doors, only to find them locked, with no one answering. Her dreams felt distant, buried beneath layers of rejection and failure. Yet, something about this door was different.

She noticed a sliver of light peeking through the keyhole. It was faint, but there. Curious, Maya bent down and peered through. On the other side was a room filled with golden sunlight, warmth radiating from every corner. It was a stark contrast to the cold, gray hallway she stood in. She jiggled the handle—it didn't budge. A sigh escaped her lips. It was just another closed door. But that light, so soft and persistent, beckoned her to stay. She sat down, leaning against the door, feeling the warmth seep through the wood.

Days passed, and though the door remained locked, Maya kept returning. She would sit for hours, feeling the comfort of the light as it poured through the keyhole. Slowly, the weight she carried seemed to lift. The light gave her hope—a reminder that even though she couldn't see the full picture, something beautiful awaited.

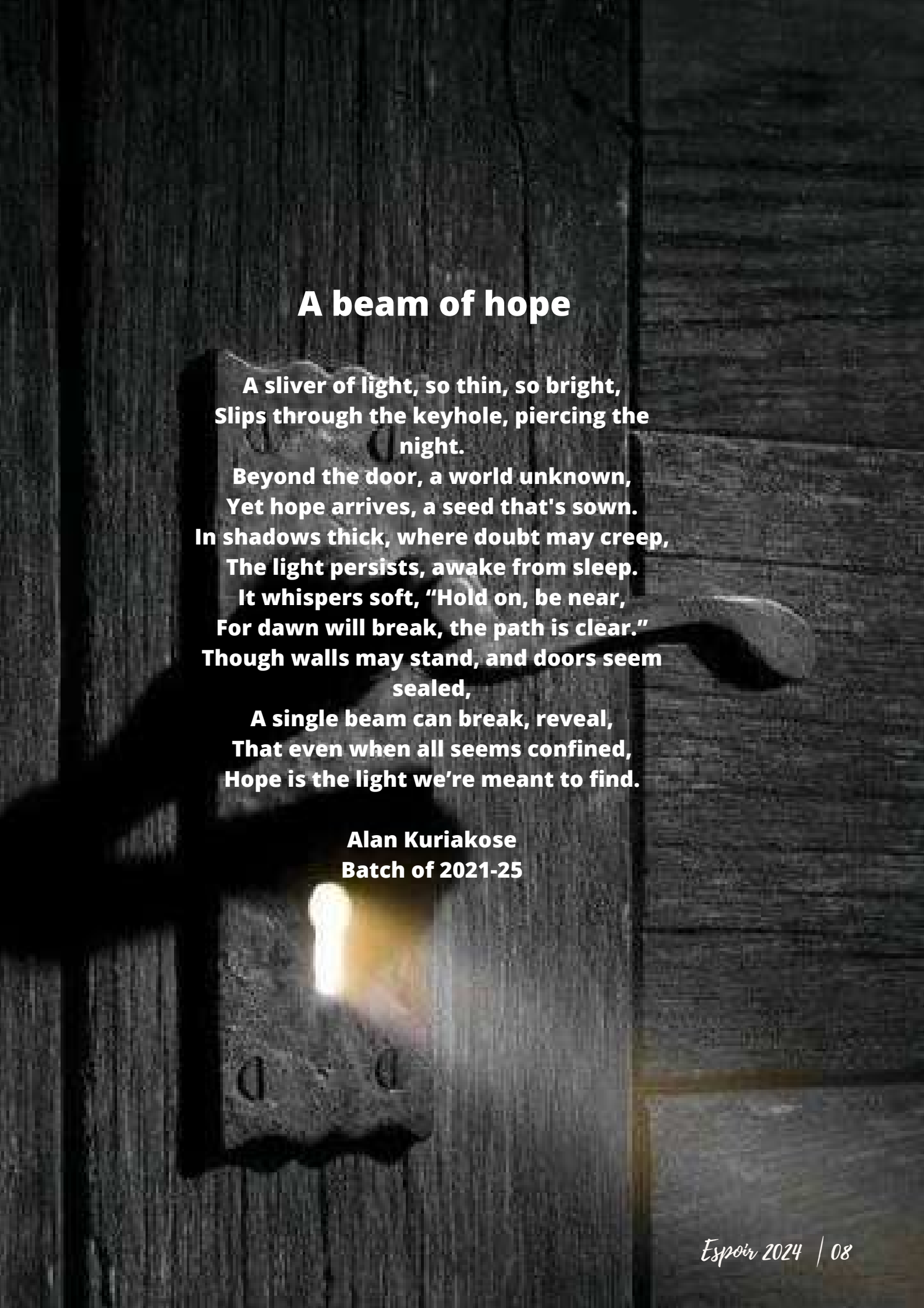
One day, as she was sitting by the door, lost in thought, she heard a faint click. The handle turned easily, and the door swung open. Maya blinked, stepping into the light-filled room. It was everything she had imagined and more—an open space full of possibility, where the warmth enveloped her completely.

The door had opened not when she wanted it to, but when she was ready.

Kareena Anna Jacob
Batch of 2021-25

INDUSTRIAL VISITS

Memories



A beam of hope

A sliver of light, so thin, so bright,
Slips through the keyhole, piercing the night.
Beyond the door, a world unknown,
Yet hope arrives, a seed that's sown.
In shadows thick, where doubt may creep,
The light persists, awake from sleep.
It whispers soft, "Hold on, be near,
For dawn will break, the path is clear."
Though walls may stand, and doors seem sealed,
A single beam can break, reveal,
That even when all seems confined,
Hope is the light we're meant to find.

Alan Kuriakose
Batch of 2021-25

THE SYMPHONY OF SEASONS

In autumn's embrace, leaves gently fall,
Crimson and gold in a whispered call.
Winter's breath paints the world in white,
Blanketing earth in serene delight.
Spring awakens with a vibrant hue,
Blossoms emerge, kissed by the dew.
Summer's warmth stretches long and bright,
Fields of green bask in golden light.
Through each season's rhythmic dance,
Nature weaves its timeless romance.
In every change, a story told,
Of life's cycle, brave and bold.

Akash Balakrishnan
Assistant Professor

REFLECTIONS IN STILL WATERS

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ECHOES OF COLLEGE DAYS

In lecture halls where time stood still,
We chased our dreams with fervent will.
Caffeine-fueled nights and days so long,
We forged our bonds and grew so strong.
The campus green, our haven bright,
Where laughter danced into the night.
From late-night talks to dawn's first light,
We shared our hopes, our fears, our fight.
The thrill of youth in every stride,
Endless possibilities wide.
With friends who knew our every scar,
We reached for stars, no dream too far.
In memory's vault, these moments stay,
The golden echoes of our college days.

BEEMA NOUSHAD
BATCH OF 2022-26

Photographs

Naveen S Lal
Batch of 2022-26

THE JOURNEY OF THE LEAF

In the lush, green landscape of Kerala, a young leaf named Appu sprouted on a grand banyan tree near a serene backwater. Nestled among his many siblings, Appu reveled in the warm, tropical sun and the gentle caress of the monsoon breeze. The banyan tree's roots, draped in intricate layers of vines and moss, provided shade and comfort to the creatures of the forest.

As the days passed, Appu's vibrant green color deepened under the tropical sun. He admired the beauty of his surroundings: the vibrant blooms of wild orchids, the gentle sway of coconut palms, and the soothing rhythm of the backwater's flow. The cacophony of tropical birds and the distant murmur of a village made Appu's days rich with sound and life.

One balmy autumn morning, Appu noticed a change in his hue. The once vivid green gave way to a brilliant palette of reds and golds, reflecting the season's transformation. Excited by this change, Appu danced in the breeze, eager to explore new horizons.

As the monsoon rains ceased and the air turned cooler, Appu felt himself detaching from the banyan tree. A gust of wind finally set him free, and he drifted gently towards the backwater. His journey was like a graceful dance, twirling and spinning through the air. He landed softly on the water's surface, joining a flotilla of other colorful leaves.

The backwater, with its tranquil waters and the backdrop of lush, verdant hills, cradled Appu as he floated along. He watched the reflection of the dense mangroves and distant hills, feeling a sense of tranquility and satisfaction in this new phase of his journey.

Days turned to weeks, and the backwater's surface began to chill with the arrival of winter. The once placid waters started to grow colder, and Appu felt the frost's gentle touch. He and his fellow leaves became part of a beautiful mosaic on the water, framed by the intricate patterns of frost and the rich hues of autumn.

As winter gave way to the warm embrace of spring, the ice melted, and the backwater was rejuvenated. The cycle of life continued with fresh shoots and vibrant greenery emerging from the mud, nourished by the decayed leaves.

In the heart of Kerala's enchanting landscape, Appu's journey was a reflection of nature's enduring cycle. His life, from the vibrant banyan tree to the tranquil backwater, contributed to the beauty and rhythm of the land, embodying the seamless connection between life, death, and rebirth.

Richa Mariyam Joby
Batch of 2023-27

NIGHT'S SOLACE

Darkness falls with soft descent,
A tranquil hush, the day's lament.
In the shadows, solace found,
Quiet moments, peace profound.
Moonlight filters through the trees,
Whispers float on midnight's breeze.
In the cloak of dark, we rest,
Finding comfort, feeling blessed.
Night's embrace, a calming balm,
In the dark, we find our calm.
Restful dreams and stars so bright,
Guide us through the gentle night

Alvin Tenny
Batch of 2022-26

The Mariner's Tale

Upon the rolling, azure sea,
A mariner sails wild and free.
With weathered hands and eyes of stone,
He seeks horizons yet unknown.
The ocean's breath, both fierce and mild,
Guides the path of this rugged child.
Beneath the sun’s relentless blaze,
He braves the storm and ocean’s maze.
In moonlit nights, his ship does glide,
Where starlight dances on the tide.
Echoes of the sea’s deep song,
Keep his heart both bold and strong.
Waves crash with tales of old and grand,
Of ancient realms and distant lands.
His compass points to dreams untold,
In waters deep and skies of gold.
The mariner’s soul, both brave and wise,
Reads the map of sea and skies.
With each horizon, new and wide,
He finds a part of him inside.
Through tempests’ rage and calm’s embrace,
He charts his course, his steadfast pace.
For in the vast and endless blue,
He finds the self he always knew.

Anagha Chandran
Batch of 2022-26

CARICATURE CORNER

Adhil Ali P. K.
Batch of 2023-27

Whispers of the Night Dream

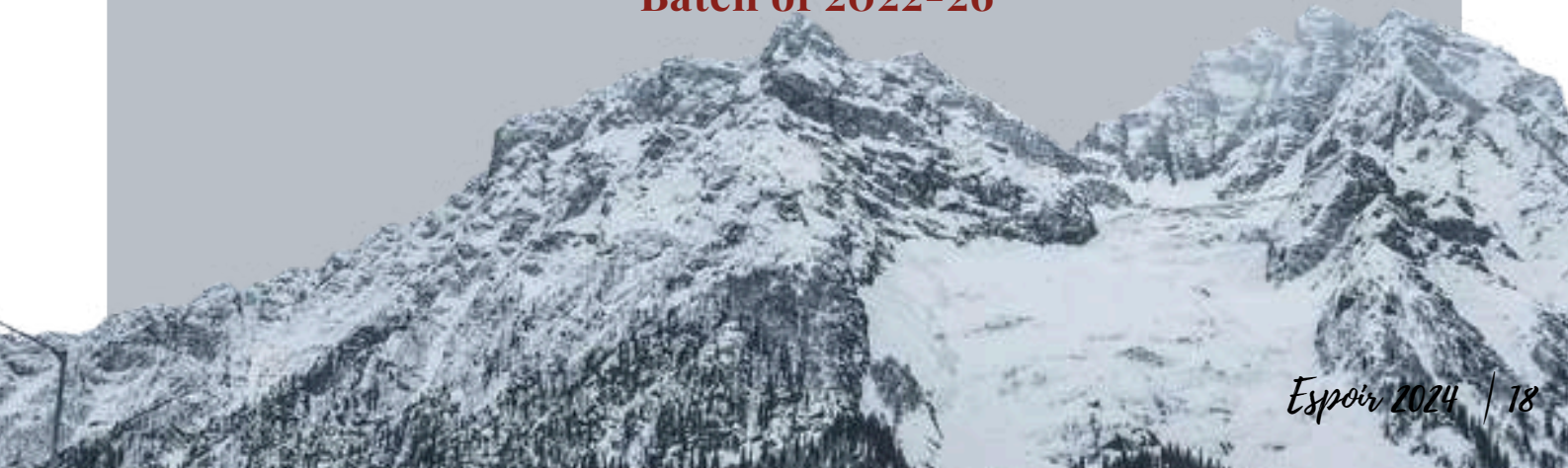
As moonlight bathes the world in grace,
A dreamscape opens, soft embrace.
Stars weave patterns in the night,
Guiding dreams with silver light.
In the hush where shadows play,
Fantasy and wonder sway.
Through the dark, where echoes gleam,
We journey deep in twilight's dream.
Mountains float and rivers gleam,
Dancing in a starlit stream.
Whispers of forgotten lore,
Call from realms of evermore.
In dreams, we find both peace and plight,
In the quiet of the night.
Awake with dawn's first tender beam,
Carrying echoes of the dream.

Mohammad Shahzad T . S.
2022-2026

Hope Amidst the Landslide

In Wayanad, where mountains rise,
The earth gave way beneath the skies.
A landslide's roar, a thunder's cry,
Stirred the heart and darkened eyes.
Yet in the shadow of the fall,
Hope rises like a mountain tall.
Amidst the rubble, dreams take flight,
Seeking dawn in darkest night.
The river's flow, though changed its course,
Finds new paths with gentle force.
In fields once scarred by nature's hand,
New shoots emerge from the broken land.
Communities unite, their strength entwined,
In the face of nature's unkind.
Hands reach out, hearts intertwine,
To rebuild and once again shine.
In every stone and fallen tree,
Resilience grows and spirits free.
For even in the deepest scar,
Hope's light shines from near and far.
So let the mountain's voice be clear,
In every loss, new strength appears.
From landslide's trial, we learn to cope,
In the heart of darkness, burns the light of hope.

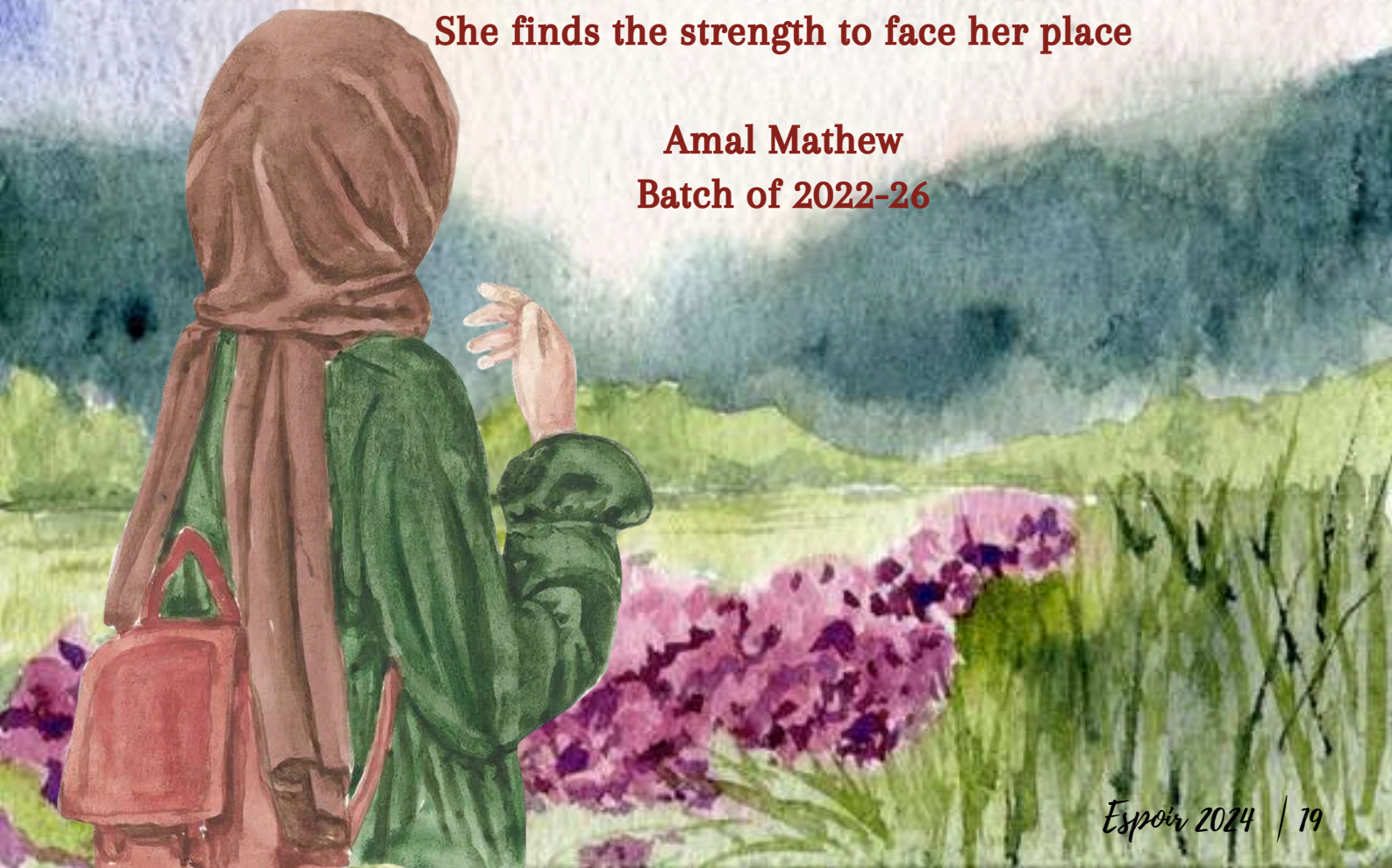
Johan Biju Thomas
Batch of 2022-26



Summit of Dreams

She stands upon the edge of thought,
A mountain peak her gaze has caught.
With eyes that trace the distant crest,
Her heart embarks on an unspoken quest.
The mountain's height, serene and grand,
A symbol of a distant land.
Her finger points, her spirit yearns,
For dreams that in the distance burn.
In quiet moments, hopes are spun,
Beneath the vast and setting sun.
The summit's call, both bold and clear,
Whispers secrets she longs to hear.
As shadows stretch and day recedes,
Her soul ascends, embracing dreams.
For in that mountain's timeless grace,
She finds the strength to face her place

Amal Mathew
Batch of 2022-26



World Turtle Day

May 23

World Turtle Day, observed annually on May 23, is a global event dedicated to raising awareness about the conservation of turtles and tortoises. Established by the American Tortoise Rescue in 2000, this day highlights the critical need to protect these ancient reptiles, which are facing numerous threats due to human activities and environmental changes.

Importance of Turtles and Tortoises: Turtles and tortoises play crucial roles in their ecosystems. They contribute to the health of marine and terrestrial environments by maintaining vegetation, dispersing seeds, and helping control insect populations. Sea turtles, for example, help maintain coral reef health by grazing on algae, while terrestrial tortoises assist in seed dispersal for various plant species.

Threats to Turtles and Tortoises: Despite their ecological significance, many turtle and tortoise species are under severe threat. Factors such as habitat destruction, climate change, pollution, and illegal wildlife trade pose significant risks. For instance, plastic pollution in the oceans can be deadly to sea turtles, which may ingest or become entangled in debris. Additionally, the loss of nesting sites due to coastal development and climate-induced changes further endangers their survival.

Conservation Efforts: Various organizations and conservationists are actively working to protect these species through habitat preservation, legislation, and education. Efforts include protecting nesting sites, reducing bycatch in fishing gear, and combatting illegal wildlife trafficking. Public awareness campaigns, like World Turtle Day, aim to educate people about the importance of these creatures and encourage actions that can make a difference. World Turtle Day serves as a reminder of the importance of these remarkable animals and the collective responsibility to ensure their survival. By fostering greater awareness and taking proactive steps, we can all contribute to the protection and preservation of turtles and tortoises for future generations.

Madhav Raj
Batch of 2023-2027

Research theme 2023-24
"Chemical Engineers as guardians of environment"

"What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another. If we harm nature, we harm ourselves. Our connection to the environment is inseparable, and its preservation is crucial for our well-being." **— Mahatma Gandhi**

Forever Chemicals

UNDERSTANDING THE EFFECTS ON HUMAN HEALTH AND ENVIRONMENT

Akash Balakrishnan
Assistant Professor

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) are a group of man-made chemicals that have garnered significant attention due to their widespread use and persistent nature in the environment. Often referred to as 'forever chemicals,; PFAS are known for their resistance to degradation, leading to concerns about their long-term impact on human health and the environment. This article delves into the origins, uses, risks, and regulatory efforts surrounding PFAS.

PFAS are a large family of chemicals that contain fluorine atoms bonded to carbon chains. These carbon-fluorine bonds are incredibly strong, making PFAS highly resistant to heat, water, and oil. There are thousands of different PFAS compounds, but the most well-known include Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS).

PFAS were first developed in the 1940s and have since been used in a wide range ofindustrial and consumer products. Their unique properties make them ideal for applications that require resistance to moisture, heat, and stains. Common uses include:

Advanced treatment methods, such as activated carbon filtration and high-pressure membrane technologies, are being explored to remove PFAS from contaminated water sources.

1. Non-stick cookware**: PFAS are used to create non-stick coatings like Teflon.
2. Water-repellent fabrics: Clothing, carpets, and upholstery are often treated with PFAS
to repel water and stains.
3. Firefighting foams: PFAS are a key ingredient in aqueous film-forming foams (AFFFs) used to combat oil-based fires.
4. Food packaging: PFAS are found in grease-resistant paper products like fast food wrappers and microwave popcorn bags.
5. Cosmetics: Some cosmetics contain PFAS to improve product durability and water resistance.

One of the most concerning aspects of PFAS is their persistence in the environment. These chemicals do not break down easily, leading to their accumulation in water, soil, and living organisms. PFAS can travel long distances through water and air, contaminating ecosystems far from their original source. Because of their bioaccumulative nature, PFAS can build up in the bodies of animals and humans over time, potentially leading to adverse health effects.

PFAS, known as 'forever chemicals,' persist in the environment and human body, posing long-term health risks.

Research has linked exposure to certain PFAS compounds to a range of health problems. Some of the potential health risks include:

1. Cancer: Studies have suggested a link between PFAS exposure and an increased risk of certain cancers, including kidney and testicular cancer.
2. Immune system effects: PFAS may impair the immune system, reducing the effectiveness of vaccines and increasing susceptibility to infections.
3. Hormonal disruption: PFAS can interfere with hormonal function, leading to developmental issues, reproductive problems, and metabolic disorders.
4. Liver damage: Some PFAS compounds have been associated with liver damage and elevated cholesterol levels.

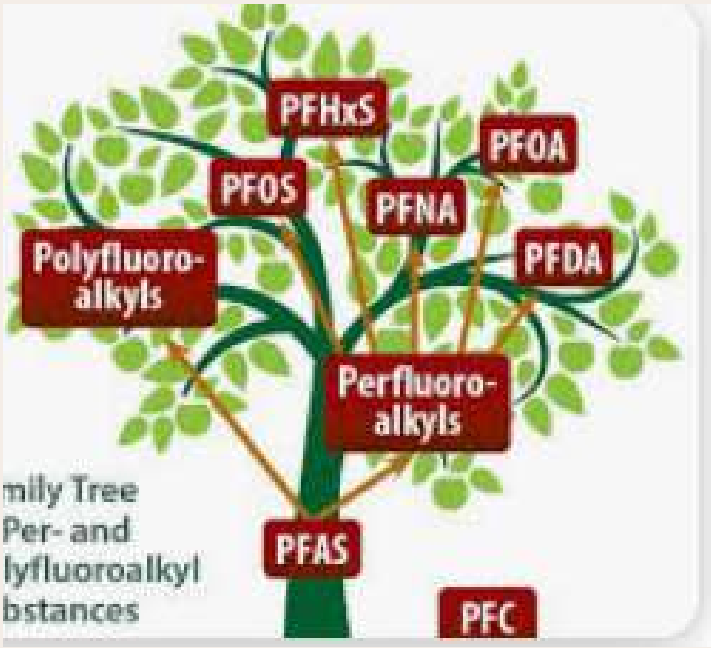
The full extent of PFAS-related health risks is still being studied, but the existing evidence has prompted significant concern among scientists and public health officials.

PFAS contamination is commonly found in drinking water, especially near industrial sites or areas where firefighting foams have been used. Contamination can also occur in food and soil.

The persistence and widespread contamination of PFAS have led to increased regulatory scrutiny. In the United States, the Environmental Protection Agency (EPA) has established health advisories for PFOA and PFOS in drinking water, though these advisories are not legally enforceable limits. Some states have taken further action by setting their own limits and banning certain PFAS in products.

Globally, countries are beginning to regulate PFAS more stringently. The European Union has classified some PFAS as substances of very high concern (SVHC) and is considering a comprehensive ban on all non-essential uses of PFAS.

Remediation of PFAS-contaminated sites is challenging due to the chemicals and its resistance to degradation. Current methods include activated carbon filtration, ion exchange, and high- temperature incineration, but these approaches are often expensive and energy-intensive. Research into more effective and sustainable remediation technologies is ongoing.



PFAS are a significant environmental and public health challenge due to their widespread use, persistence, and potential health risks. While regulatory efforts are increasing, the legacy of PFAS contamination will require continued attention and innovative solutions to protect human health and the environment. As research progresses, it is crucial to balance the benefits of PFAS in industrial applications with the

Insights into Artificial Intelligence

ELEVATING YOUR STYLE WITH VERSATILE ACCESSORIES

Artificial Intelligence (AI) is a transformative force in today's world, reshaping industries, improving efficiencies, and influencing daily life. Its rapid evolution has made AI a focal point of discussions concerning the future of humanity. While AI offers significant advantages, it also presents considerable challenges that must be carefully navigated.

Automation and Efficiency: AI excels at automating repetitive tasks, increasing productivity across various sectors. In manufacturing, AI-powered robots work tirelessly, reducing human error and production costs. This efficiency allows human workers to focus on more complex, creative tasks.

"AI: Innovation meets potential"

Enhanced Decision-Making: AI can analyze vast amounts of data quickly and accurately, leading to better decision-making. In healthcare, AI aids in early diagnosis and personalized treatment plans, improving patient outcomes. In finance, AI predicts market trends, helping investors make informed decisions.

Personalization and Customer Experience: Businesses use AI to analyze customer preferences and behavior, offering personalized recommendations that enhance the user experience. This personalization drives customer satisfaction and loyalty, as seen with platforms like Netflix and Amazon.

AI is revolutionizing healthcare by improving diagnostic accuracy, speeding up drug discovery, and creating tailored treatment plans. AI's ability to analyze medical data leads to early detection of diseases and better management of chronic conditions.

Job Displacement: As AI systems become more capable, many jobs, particularly those involving routine tasks, are at risk of automation. This raises concerns about unemployment and the need for workers to adapt to new roles that require different skills.

Loss of Human Touch: The widespread adoption of AI in areas like customer service and healthcare could lead to a loss of empathy and personal interaction. While AI can efficiently handle routine inquiries, it cannot replicate the emotional support provided by human interaction, which is crucial in many scenarios.

Ethical and Bias Issues:* AI systems can perpetuate and even amplify existing biases present in the data they are trained on. This can lead to unfair outcomes in areas like hiring, lending, and law enforcement, where biased AI decisions can have serious consequences.

Security Risks: AI systems are vulnerable to cyberattacks, which can lead to significant disruptions, especially in critical infrastructure. The misuse of AI in areas like autonomous vehicles or cybersecurity could result in severe consequences, highlighting the need for robust safeguards.

Artificial Intelligence is a powerful tool with the potential to revolutionize society. Its advantages, such as increased efficiency and improved decision-making, are clear. However, the challenges it presents, including job displacement, ethical concerns, and security risks, must be addressed to ensure that AI benefits humanity as a whole. As we continue to integrate AI into our lives, careful consideration and regulation are essential to maximize its benefits while minimizing its drawbacks.

Nikita Saara Renji
Batch of 2022-26

Bottle Art work

Amritha Saji
Batch of 2023-27

Greenery

In emerald hues the forests sway, A dance of leaves in gentle play, Where sunlight filters, soft and bright, Through canopies of endless light.

The moss-clad stones and ferns below, In shades of green, they ebb and flow, As whispers of the wind do tease, Through ancient, towering, graceful trees.

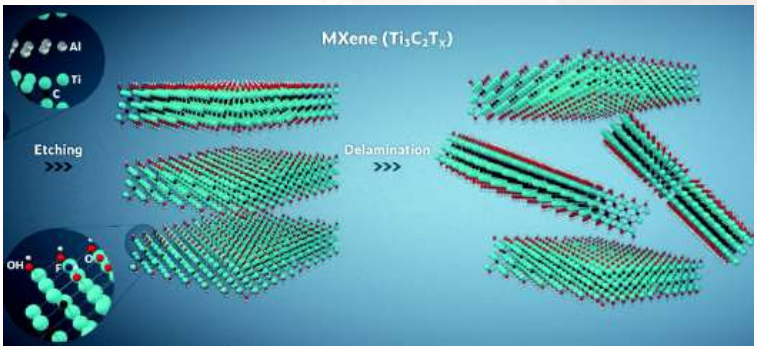
In meadows wide, where grasses dream, And rivers form their silver gleam, Each blade and bough, a tale they share, Of earth's own breath and fragrant air.

O verdant realms, where life is sewn, In every leaf, a world is grown.

Jinsha Sherin
Batch of 2023-2027

MXenes: The Next-Generation Wonder Material

In the ever-evolving world of materials science, MXenes have emerged as a revolutionary class of two-dimensional materials, captivating researchers and industry experts alike. Discovered in 2011 by a team at Drexel University, MXenes are derived from MAX phases—ceramic materials composed of transition metals, carbon, and nitrogen. Their unique properties have positioned them as a cutting-edge wonder material with vast potential. MXenes are characterized by their layered structure, similar to graphene, but with additional versatility. The formula for MXenes is $M_{n+1}X_nT_x$, where M represents a transition metal, X is carbon or nitrogen, and T denotes surface-terminating groups such as -OH, -O, or -F. These layers can be exfoliated into single or few-layer sheets, unlocking a suite of extraordinary properties.



Remarkable Properties

1. Exceptional Electrical Conductivity: MXenes exhibit outstanding electrical conductivity, making them ideal for advanced electronics and energy storage applications. Their ability to conduct electricity efficiently is a game-changer for high-performance batteries and supercapacitors.
2. High Surface Area: The high surface area of MXenes enhances their effectiveness in applications like energy storage and environmental sensing. This property is crucial for developing next-generation batteries and supercapacitors with higher energy densities.
3. Chemical Versatility: The surface chemistry of MXenes is highly tunable, thanks to the variety of functional groups that can be attached. This flexibility allows for the customization of MXenes for specific applications, including catalysis and environmental remediation.
4. Thermal and Mechanical Resilience: MXenes boast impressive thermal stability and mechanical strength. They can withstand high temperatures and are flexible enough to be used in composite materials, offering durability and performance in demanding conditions.

Applications on the Horizon

The potential applications of MXenes are diverse and groundbreaking. In energy storage, their superior conductivity and high surface area make them ideal candidates for high-capacity batteries and supercapacitors. In environmental science, MXenes show promise in water purification and air filtration, offering new solutions for tackling pollution. Additionally, their unique properties are being explored for use in electromagnetic interference shielding, advanced sensors, and as catalysts in chemical reactions.

The Future of MXenes

As research into MXenes continues to advance, their full range of applications and benefits is still being explored. The ongoing studies and innovations hold the promise of integrating MXenes into various industries, from electronics and energy to environmental and materials science. With their combination of high performance and versatility, MXenes are poised to play a pivotal role in shaping the future of technology and sustainability.

In conclusion, MXenes represent a frontier in materials science—a material with the potential to revolutionize several fields through its remarkable properties and diverse applications. As the world of science and technology progresses, MXenes will undoubtedly be at the forefront of innovation, driving advancements and creating new possibilities.
This write-up is designed to be engaging and informative, highlighting the significance of MXenes and their potential impact across various fields.

Dr. Neetha John
Professor

Under the Stars

The campsite was quiet except for the occasional crackle of the campfire and the soft rustling of leaves. Mia and Jake, two lifelong friends, had set up their tent in the heart of the forest, surrounded by towering pines and the distant hum of nocturnal creatures. It was their annual camping trip, a tradition since childhood, and they cherished the simple joys it brought.

Tonight was special. The sky was clear, and the stars shimmered like scattered diamonds. Jake, always the storyteller, had promised Mia a story before bed, and she eagerly awaited his tale.

As they huddled around the fire, Jake began, "Once upon a time, in a forest much like this one, there was a hidden grove where magical creatures lived. But these creatures weren't just any magical beings—they were guardians of the forest, ensuring it remained a place of wonder."

Mia's eyes widened as she imagined the scene. "What kind of creatures?" she asked.

"Imagine tiny, glowing fairies," Jake said, his eyes twinkling. "And wise old owls with knowledge of ancient spells. They lived in harmony, protecting their home from any harm."

Mia leaned in closer, captivated. "And what happened next?"

"One night," Jake continued, "a terrible storm rolled in. The wind howled, and the rain fell in torrents. The magical creatures were frightened, for they knew the storm could bring danger."

Mia shivered slightly, the wind outside adding to the eerie atmosphere. "Did they find a way to save the forest?"

Jake nodded. "The fairies used their light to guide the creatures to safety, while the owls chanted ancient incantations to calm the storm. Their bravery and unity saved the forest, and from that day on, the grove was known as a place of both magic and resilience."

As Jake finished his story, the fire flickered and the forest seemed to come alive with the magic of his tale. Mia gazed up at the stars, feeling a profound connection to the world around her. The night was peaceful, and the story had woven a thread of wonder into the fabric of their adventure.

They drifted off to sleep, the soft glow of the embers casting a warm light in the tent. Outside, the forest stood silent and watchful, as if it, too, was enchanted by the story shared under the stars.

Sarangi Subhash
Batch of 2022-26

Chem -Puzzle

Puzzle 1: Elemental Mystery

Puzzle: I am a non-metal, essential for life, and found in DNA. I am in the same group as oxygen but one period below. What element am I?

Answer: Nitrogen (N). Nitrogen is essential for life and is found in DNA. It is in the same group as oxygen (Group 15) but one period below it.

Puzzle 2: Atomic Number Riddle

Puzzle: I am an element with the atomic number 19. I am essential for nerve function and can be found in bananas. What element am I?

Answer: Potassium (K). Potassium has the atomic number 19 and is known to be found in bananas.

Puzzle 3: Element Symbol Scramble

Puzzle: Unscramble the following letters to find the symbols of two elements whose combined symbols spell out a common English word related to chemistry: N, S, O, T, R, M, E, P, A, D.

Answer: The elements are Neon (Ne) and Sodium (Na). When combined, their symbols form the word "Neon".

Aaron M Mathew
Batch of 2022-26

Fun Facts About Helium

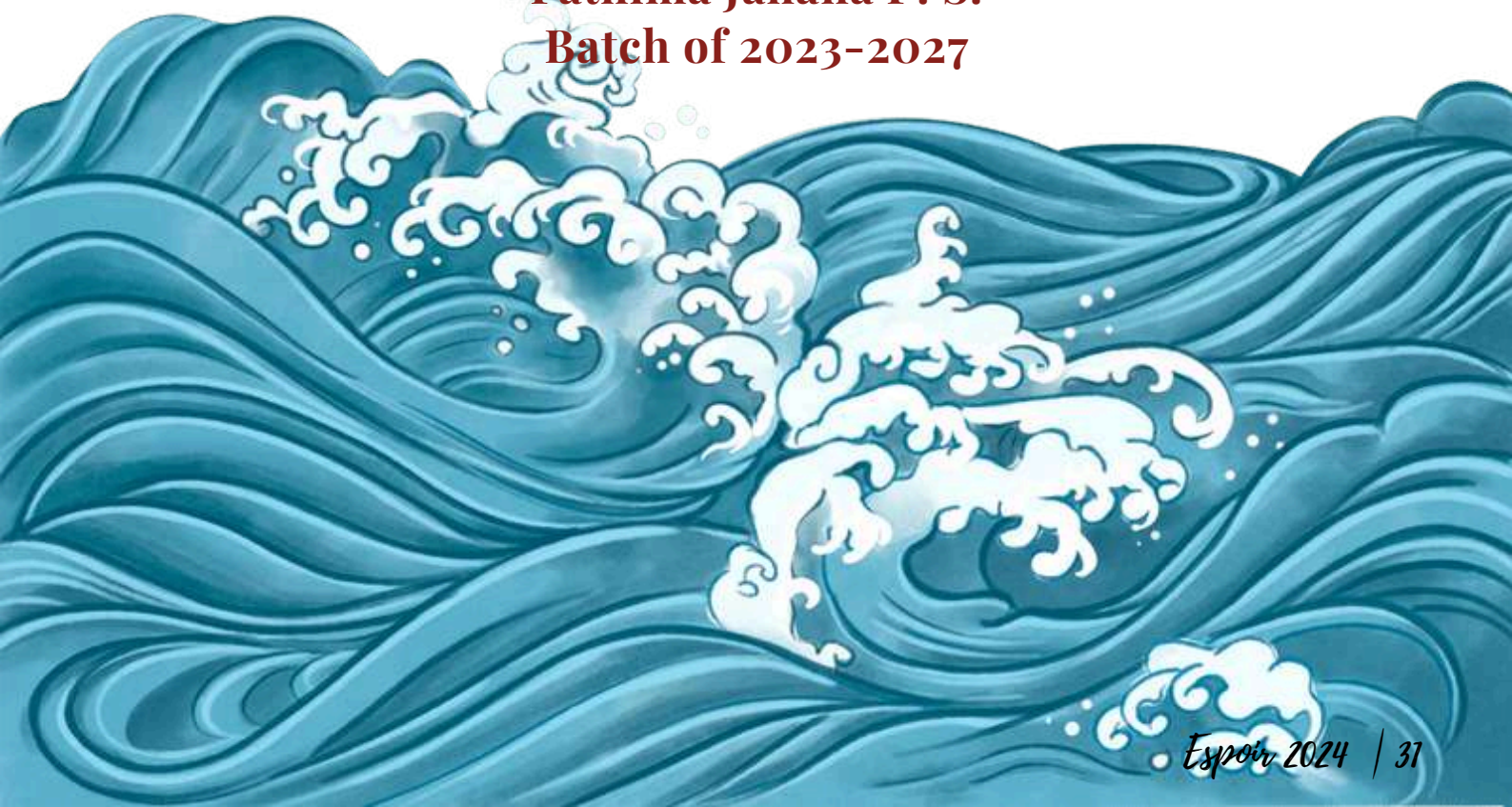
1. **Second Most Abundant Element: Helium is the second most abundant element in the universe after hydrogen. It makes up about 24% of the universe's mass.**
2. **Light as Air: Helium is lighter than air, which is why it's used in balloons to make them float. Unlike hydrogen, helium is non-flammable, making it a safer choice for inflating balloons.**
3. **Superfluid State: At extremely low temperatures (below -269°C or 4 Kelvin), helium becomes a superfluid, meaning it can flow without friction. This makes it an excellent coolant for superconducting magnets, like those used in MRI machines.**
4. **No Solid State: Helium doesn't have a solid form at normal pressure. It remains a liquid even at temperatures close to absolute zero, which is why it's so useful for low-temperature experiments.**
5. **Named After the Sun: Helium was discovered in the solar spectrum before it was found on Earth. Its name comes from the Greek word "Helios," which means "sun."**
6. **Inert and Unreactive: Helium is a noble gas, which means it is chemically inert. It doesn't readily form compounds with other elements, making it very stable and useful in various applications where reactivity needs to be avoided.**
7. **Historical Discovery: Helium was first detected in 1868 by French astronomer Jules Janssen and British astronomer Norman Lockyer during a solar eclipse. They identified it by its unique spectral lines.**
8. **Used in Deep-Sea Diving: Helium is used in breathing mixtures for deep-sea divers. It helps prevent nitrogen narcosis, a condition that affects divers at great depths.**
9. **Voice Change: Inhaling helium temporarily changes the pitch of your voice due to its lower density compared to air. However, this effect is short-lived and not harmful in small amounts.**
10. **Helium Shortage: Despite its abundance in the universe, helium is relatively rare on Earth and is a non-renewable resource. The U.S. used to have a large helium reserve but is now running low, leading to concerns about future availability.**

Anjana E. S.
Batch of 2023-27

The River's Lament

Beneath the sky's unyielding gaze,
A river weeps through endless maze,
Its waters mourn the silent years,
Carrying dreams and unspilled tears.
It once did dance with joy and grace,
A mirrored moon on silver face,
But now it trudges, dark and cold,
Through tangled paths, both worn and old.
The banks are lined with tales untold,
Of fleeting hopes and hearts grown cold,
Its currents whisper of the past,
Of fleeting joy that couldn't last.
Yet still it flows, though heavy-laden,
Its sorrowed song, both sweet and laden,
For even rivers, deep and wise,
Hold echoes of their silent cries.

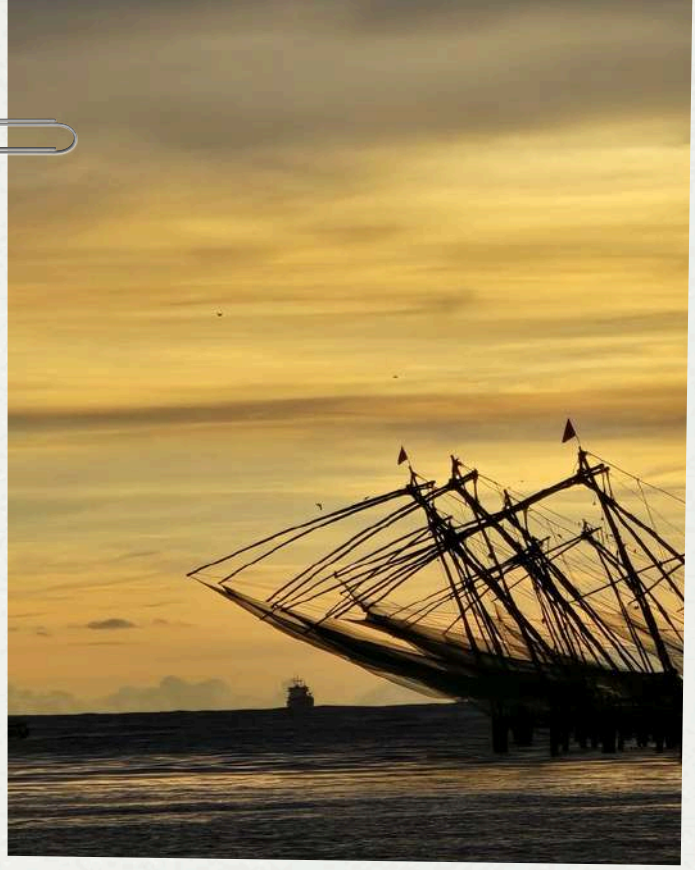
Fathima Jahana P. S.
Batch of 2023-2027

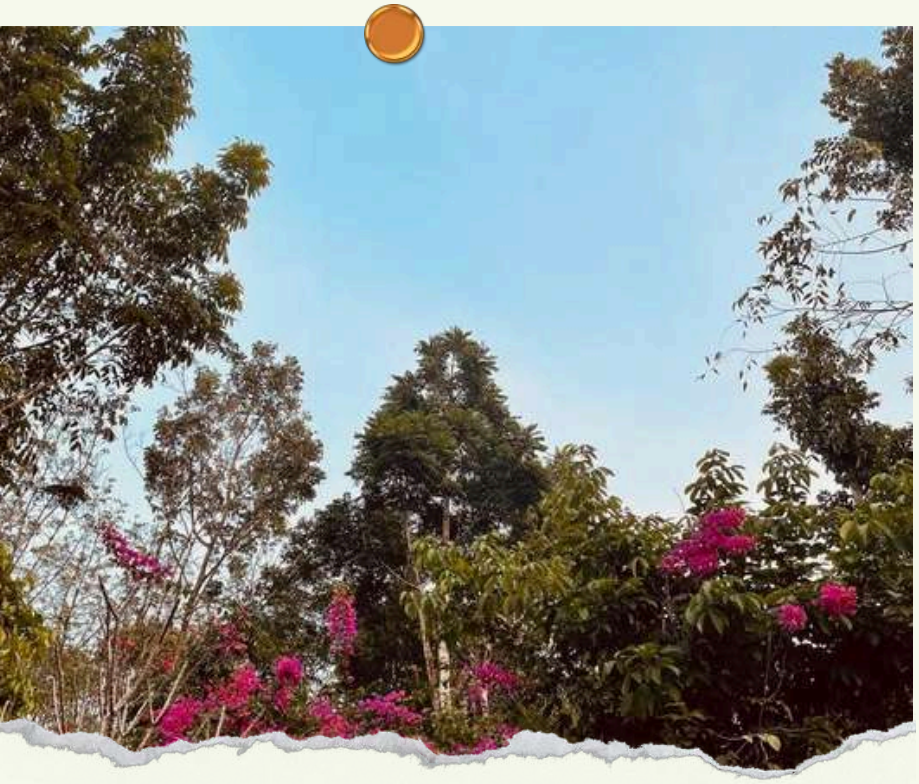


THE OCEAN'S CRY

The Ocean's Cry
Beneath the waves where silence reigned,
The ocean's heart is now constrained,
Once crystal blue, now murky gray,
Where life and beauty fade away.
A dolphin's dance, a turtle's glide,
In waters where the poisons hide,
Where plastic chokes the once-clear sea,
And oil stains mark a somber plea.
Coral reefs, once vibrant, bright,
Now ghostly hues in fading light,
Their colors drained by human carelessness,
Their beauty lost in deep distress.
The seabirds soar o'er drifting waste,
Their cries of anguish, bittersweet taste,
As nets ensnare and toxins spread,
The ocean mourns for those who've fled.
Yet in this sea of tears and grime,
There's hope to mend the sands of time,
For hearts and hands can heal the blue,
And dreams of cleaner seas renew.
With every tide, a chance to mend,
To clean the shores and to transcend,
To hear the ocean's tender sigh,
And answer to its anguished cry.
In waves that whisper soft and clear,
A call to save what we hold dear,
To mend the wounds and calm the storm,
And keep our ocean's heart reborn

Meenu M.
Batch of 2022-26





Look deep into nature, and then you will understand everything better." — Albert Einstein

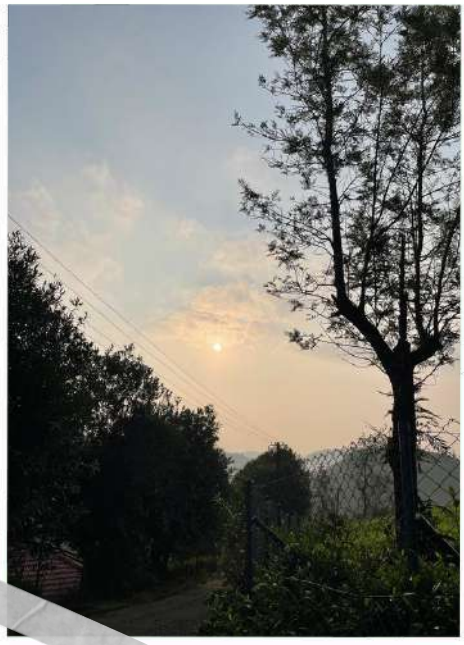
Life is a Circle

In the cradle of dawn where dreams begin,
Life spins a circle, weaving thick and thin.
From first breath to the twilight's gentle fold,
The wheel turns slowly, stories yet untold.
Childhood's laughter, a never-ending song,
Time marches forward, days moving along.
Love's tender circle, a warm embrace,
Life's fleeting moments in a tender space.
Challenges rise as shadows blend and fade,
Through trials and triumphs, paths are laid.
The circle completes where we all start anew,
In the dance of existence, forever true.

Dr. Vishnuprasad S
Assistant Professor

NATURE

VISION Board



Reflections on Chemical Engineering at Saintgits

Reflecting on my journey through the Chemical Engineering program at Saintgits College of Engineering, I am filled with gratitude for the profound impact it has had on my professional and personal development. From the moment I entered Saintgits, I was immersed in a rigorous curriculum designed to blend theoretical knowledge with practical application. The faculty's dedication to both teaching and mentoring played a crucial role in shaping my understanding of complex chemical processes and fostering a spirit of innovation.

The hands-on laboratory experiences and industry visits bridged the gap between classroom learning and real-world challenges, equipping me with the skills needed to tackle complex engineering problems. Collaborating on group projects not only enhanced my technical abilities but also instilled a collaborative mindset that has been invaluable in my career.

One of the standout aspects of my time at Saintgits was the emphasis on sustainability and ethical engineering. This focus has guided my professional choices and inspired me to pursue projects that address environmental challenges. The supportive community at Saintgits, coupled with its commitment to ethical practices, has shaped my approach to problem-solving and decision-making.

To current and future students, I encourage you to embrace every challenge as an opportunity for growth. The education and experiences you gain at Saintgits will serve as a strong foundation for a rewarding career. Remember to leverage your skills not only for personal advancement but to contribute positively to society. My time at Saintgits has been a cornerstone of my journey, and I am proud to be part of its legacy of excellence.

Midhun
Batch of 2020-24

The Lost Temple of Athena: Alexios' Quest for History"?

Once upon a time, in a small village nestled in the rolling hills of ancient Greece, lived a young boy named Alexios. He was known for his curious nature and relentless questions about the past. His village, though modest, was a living history lesson, filled with ruins and relics from the days of great philosophers, mighty warriors, and legendary gods.

One day, Alexios found an old, dusty scroll hidden in a forgotten corner of his grandfather's attic. The scroll was adorned with intricate designs and faded writing. He carefully unrolled it, revealing a map of ancient Greece with strange symbols and landmarks that he didn't recognize.

Intrigued, Alexios took the scroll to his wise grandmother, who was well-versed in the tales of their ancestors. She studied the map and explained that it was a guide to the lost Temple of Athena, a place spoken of in myths but long forgotten by modern generations.

Determined to uncover the temple's secrets, Alexios embarked on a journey. Guided by the map, he ventured through rugged terrain, crossed flowing rivers, and climbed steep hills. Along the way, he encountered remnants of ancient battles, inscriptions on rocks, and artifacts that hinted at the temple's grandeur.

After days of travel, Alexios reached a hidden valley covered in thick vines and overgrown vegetation. With a mixture of excitement and exhaustion, he cleared the area and discovered the ruins of the Temple of Athena. Though much of it had crumbled, the grandeur of the past was still palpable. Statues of gods, faded murals, and columns partially intact whispered tales of ancient glory.

Alexios spent hours exploring and documenting his findings. He realized that the true treasure of the temple was not gold or jewels, but the stories and history embedded in its walls. He carefully copied down inscriptions and took notes on the artifacts he found.

Returning to his village, Alexios shared his discovery with his fellow villagers. The temple's history, once a distant legend, became a living part of their heritage once more. The village celebrated the revival of their ancient roots, and Alexios's passion for history inspired others to cherish and explore their past.

Years later, Alexios became a renowned historian, known for his dedication to preserving and sharing the stories of ancient Greece. His journey not only uncovered the secrets of a lost temple but also rekindled a love for history in his community, proving that even the smallest spark of curiosity can illuminate the grandest of histories.

Joshiya Mary Jacob
Batch of 2022-26

Chemistry Crossword Puzzle

Across:
The basic unit of matter, consisting of a nucleus and electrons (4 letters)
The liquid metal with the chemical symbol Hg (7 letters)
The gas used in balloons that's lighter than air (6 letters)
The type of bond formed by sharing electrons (7 letters)
This element is essential for breathing and has the symbol O (6 letters)

Down:
A common solvent with the formula H_2O (5 letters)
The process by which a solid turns directly into a gas (10 letters)
A substance that speeds up chemical reactions without being consumed (9 letters)
The type of reaction that releases heat (10 letters)

Clues and Answers:
Across:
ATOM
MERCURY
HELIO
COVALENT
OXYGEN
Down:
WATER
SUBLIMATION
CATALYST
EXOTHERMIC

RAEES
Batch of 2022-26

Sustainable Energy at Kochi Airport: A Model for Kerala

Kochi International Airport, nestled in the vibrant city of Kochi in Kerala, stands as a pioneering example of sustainability and innovation in the realm of energy. Known for its forward-thinking approach, the airport has made remarkable strides in integrating sustainable energy practices, setting a benchmark for green initiatives across the region and beyond.

A Green Vision: In 2015, Kochi International Airport made headlines by becoming the first airport in the world to operate entirely on solar power. This landmark achievement was the result of a visionary project aimed at reducing the airport's carbon footprint and promoting renewable energy. The airport's commitment to sustainability reflects Kerala's broader environmental goals and showcases how large-scale infrastructure can lead the charge in clean energy adoption.

The Solar Revolution project at Kochi International Airport is both ambitious and impressive. With an extensive network of solar panels installed across rooftops, parking areas, and other surfaces, the airport generates approximately 50 megawatts (MW) of electricity. This initiative not only supplies all the airport's energy needs but also contributes surplus power to the local grid, supporting the community's energy requirements and further promoting the use of renewable energy.

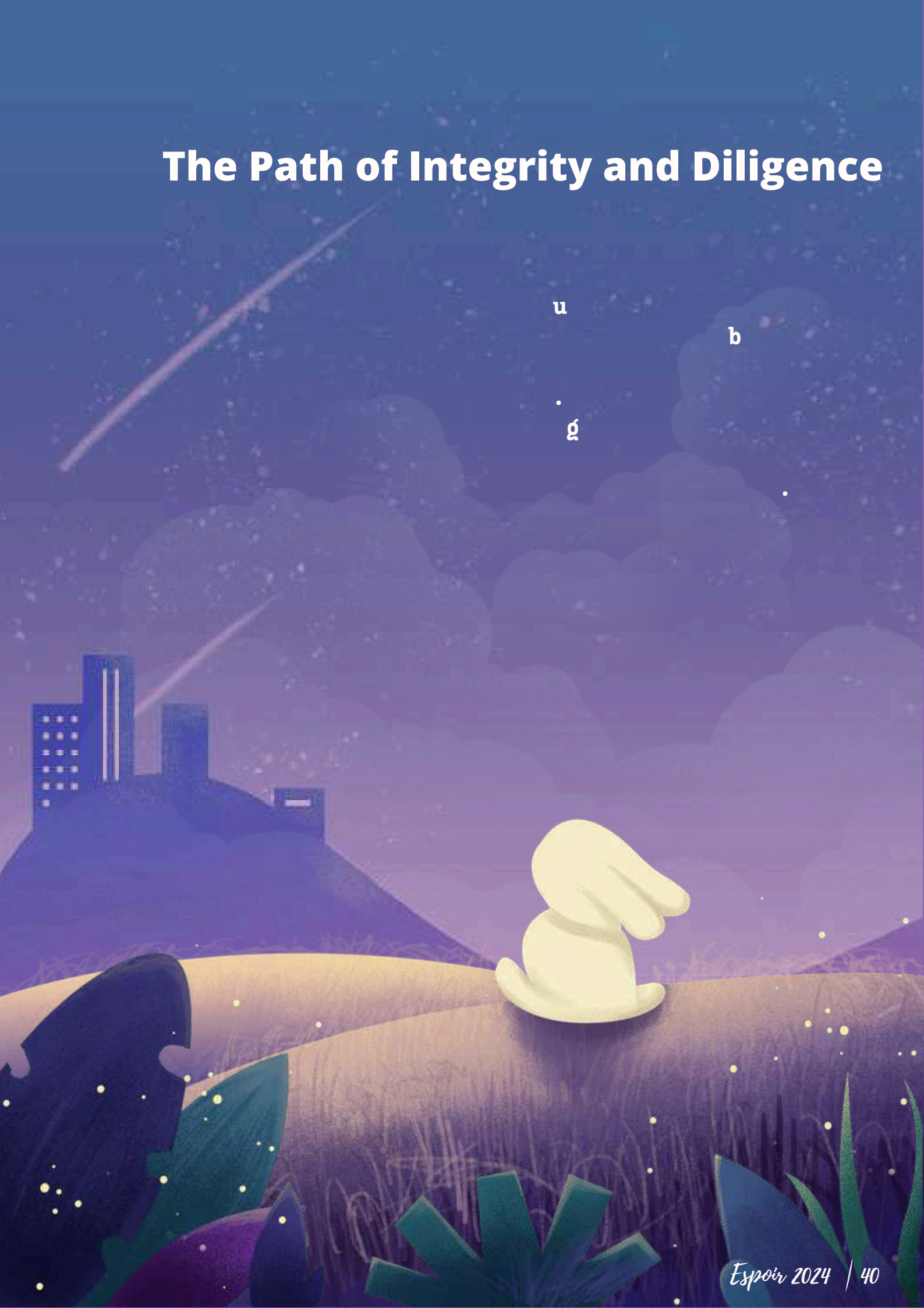
Economic and Environmental Impact: The transition to solar power has brought substantial economic benefits to Kochi International Airport. The reduction in electricity costs is a significant advantage, allowing funds to be redirected towards further improvements and innovations. Moreover, the airport's investment in solar energy has created jobs and stimulated local economic activity, demonstrating that sustainable practices can drive economic growth. From an environmental perspective, the airport's reliance on solar energy has considerably lowered its carbon emissions. By decreasing its carbon footprint, Kochi International Airport contributes to mitigating climate change and fostering a healthier environment. The project serves as a compelling case study for other airports and industries looking to adopt similar green initiatives.

Community and Global Influence: Kochi International Airport's success in implementing sustainable energy solutions has garnered global recognition and inspired other organizations to follow suit. Its achievement demonstrates that large-scale infrastructure projects can embrace and benefit from renewable energy technologies. The airport's model of integrating sustainability into its operations resonates with Kerala's broader environmental ethos and reflects the state's commitment to leading by example in the fight against climate change. In addition to its solar power initiative, the airport is exploring other sustainable practices, including energy-efficient lighting, waste management systems, and water conservation measures. These efforts further cement Kochi International Airport's role as a trailblazer in sustainability and a model for future development.

Kochi International Airport stands as a testament to the power of sustainable energy and its potential to transform industries and communities. By becoming the world's first airport to operate entirely on solar power, it has set a high standard for environmental stewardship and innovation. The airport's success is not just a win for Kerala but a global beacon of how embracing renewable energy can drive positive change. As the world continues to grapple with environmental challenges, Kochi International Airport's achievements offer hope and inspiration for a greener, more sustainable

ANN MARIAM MANOJ
Batch of 2023-27

The Path of Integrity and Diligence



Green energy:A Sustainable future

The world is grappling with pressing issues such as climate change, environmental insecurity, and energy insecurity. Burning of fossil fuels such as coal, oil, and natural gas is estimated to cause 75 percent of global greenhouse gas emissions, and is the largest contributor to global climate change that affects energy security and environmental security. Green energy, also known as renewable energy, is the energy that comes from natural resources that can be replenished over time such as Solar energy, Wind energy, Hydro energy, Geothermal energy, and Biomass energy. Green hydrogen produced by green energy is considered the fuel of the future and is emerging as a promising solution in the automotive sector, offering a clean and efficient alternative to traditional fossil fuels.

Green energy is cleaner, renewable, and sustainable, and reduces dependence on fossil fuels, thereby enhancing energy security and environmental security Despite these advantages of geen energy, there are challenges like intermittency, initial costs, and geographical limitations that need to be managed to transition to a sustainable energy future. As the world's most populous country and a rapidly growing economy, India recognizes its responsibility on the global stage and set ambitious targets including 500 GW of green energy by 2030, and net-zero carbon emission by 2070 to transition to a low-carbon economy and mitigating climate change, The nation has made significant progress in green energy and is committed to working with the international community to build a sustainable green future.

Dr. Rajasree Retnamma
Associate Professor

"Empowering women isn't just the right thing to do; it's the smart thing to do. When women are given equal opportunities, we all benefit from their strength, creativity, and leadership."

Joy's Embrace

In morning's light, where shadows play,
Joy dances in the golden ray.
It whispers soft in breezes light,
And paints the world in colors bright.
In laughter's echo, pure and clear,
Joy finds its voice, and hearts draw near.
It blooms in every heartfelt smile,
And makes the ordinary worthwhile.
In moments shared, in love's warm glow,
Joy's gentle touch begins to show.
It lifts us high on wings so free,
A boundless gift for you and me.
Embrace the joy that life can bring,
In every dawn, let your heart sing.

Krishnapriya R.
Batch of 2022-26

കാലമേസാക്ഷി

നിരയൊത്ത് നീങ്ങുന്ന കാലത്തിൻ ചലനത്തെ
വിരഹത്തിൻ നെടുവീർപ്പാൽ മിഴിചേർക്കവേ
തളരിത മൃദുമന്ദ സുസ്മേര വദനനായി
ചാരത്തു ചേർന്നീ, ശീലങ്ങൾ ഉടായാതെ

വഴിതെറ്റി പോകുന്നോർ വഴിപിരിയുന്നോർ
പാഴ് വാക്കും പ്രണയവും കേവല സത്യങ്ങൾ
പൊഴിയുന്നൊരിലപോലെ മായുന്നകാലത്തെ
ഇഴചേർത്തു നിർത്തുന്ന കാലമേ സാക്ഷി...

അരികുച്ചേർക്കപ്പെട്ടവർവരരികത്തു ചേരവേ
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സത്യവും സമത്വവും സ്വാതന്ത്ര്യ ചിന്തയും
നിത്യവും അന്യമുകുന്നോരീവേള ഭീകരം

മാറ്റണം, മാറണം ചേരാത്ത ശീലുകൾ
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മനമൊന്നുണുരുവാൻ ചിന്തിച്ചിടുമ്പോൾ

കൂട്ടി മുട്ടിക്കുവാൻ കഴിയാത്ത മറുപർ
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ജീവിതപന്ഥവിൽ മിച്ചമായി
നെടുവീർപ്പിൻ ഇടിപ്പെടും കാലമേസാക്ഷി

-അശ്വിൻ ആർ ഒബ്റോയി

CHEMICAL ENGINEERING WONDERS

The World's Smallest Engine: Chemical engineers played a key role in developing the world's smallest engine, which is about the size of a few atoms. This microscopic engine has potential applications in nanotechnology and medicine.

Plastic Invention: The first synthetic plastic, Bakelite, was developed by a chemical engineer named Leo Baekeland in 1907. It revolutionized manufacturing and is still used in many products today.

The Smell of Rain: Chemical engineers help understand why rain smells so pleasant. The scent, called petrichor, is caused by oils released from plants and compounds in the soil that are carried through the air by rain.

The Science of Ice Cream: Chemical engineers are involved in optimizing the texture and taste of ice cream. They use principles of heat transfer and fluid dynamics to create the perfect creamy consistency.

Clean Water Innovations: Chemical engineers are essential in developing new methods for purifying water. Techniques like advanced oxidation processes and membrane filtration ensure that clean water is available, even in areas with limited resources.

Artificial Blood: Chemical engineers are involved in creating synthetic blood substitutes. These substitutes are crucial for medical emergencies and can be stored for long periods without refrigeration.

Living on the Moon: A Vision for the Future

As humanity reaches for the stars, the Moon stands as our closest and most tangible extraterrestrial neighbor. The concept of living on the Moon has transitioned from the realm of science fiction to a tangible goal in the space exploration community. With ongoing advancements in technology and increasing interest from various space agencies and private companies, establishing a permanent presence on the Moon is no longer a distant dream but an evolving reality.

The Lunar Landscape: Challenges and Opportunities

The Moon's surface presents both remarkable opportunities and formidable challenges for human habitation. Its lack of atmosphere means no protection from harmful solar radiation, extreme temperatures, and micrometeorite impacts. However, the Moon's proximity to Earth makes it an ideal candidate for developing and testing the technologies needed for deeper space exploration.

1. Life Support Systems: One of the primary challenges of living on the Moon is creating reliable life support systems. This includes providing breathable air, clean water, and food. Advanced recycling systems, such as those being developed for Mars missions, will be essential. These systems must efficiently recycle air, water, and waste to ensure sustainability.
2. Habitat Construction: Building habitats on the Moon requires innovative solutions. The lunar regolith, or soil, may be used to create building materials through techniques like 3D printing. These structures must be shielded from radiation and temperature extremes, possibly utilizing the Moon's natural caves or constructing underground habitats for additional protection.
3. Energy Resources: Powering a lunar colony poses its own set of challenges. Solar energy is a promising solution, given the Moon's abundant sunlight. Solar panels could be used to generate electricity, although storing energy for the lunar night, which lasts about 14 Earth days, will require advanced battery technologies or alternative energy sources.

Scientific and Strategic Benefits

Establishing a lunar base offers numerous scientific and strategic benefits:

1. Scientific Research: The Moon serves as an ideal location for astronomical observatories, free from Earth's atmospheric interference. Studying the Moon's geology and its resources can also provide insights into the early solar system and the history of our own planet.
2. Testing Ground: A lunar base will act as a testing ground for technologies and systems needed for Mars and beyond. Lessons learned from living on the Moon will be invaluable for future deep-space missions.
3. Resource Utilization: The Moon contains resources that could be valuable for future space exploration, such as water ice, which can be split into hydrogen and oxygen for rocket fuel. Mining lunar regolith for materials like helium-3 could also become economically significant.

International Collaboration and Private Sector Involvement

The goal of living on the Moon is a collaborative effort involving international space agencies and private companies. NASA's Artemis program, in partnership with the European Space Agency (ESA) and other international partners, aims to return humans to the Moon and establish a sustainable presence. Private companies like SpaceX, Blue Origin, and others are also contributing innovative technologies and resources.

The Vision Ahead

Living on the Moon represents the next frontier in human exploration and habitation. It offers the potential for scientific discovery, technological advancement, and the development of new industries. While there are significant challenges to overcome, the progress being made in space exploration technologies brings us closer to making a lunar colony a reality.

As we look to the future, the Moon could become a stepping stone to even greater achievements in space. Establishing a permanent presence on the Moon will not only pave the way for exploring Mars and beyond but also inspire future generations to reach for the stars

GOURI BIJU RAJ
Batch of 2021-25

Math Puzzle: The Missing Number

In the following sequence of numbers, one number is missing. Can you find it?

2, 6, 12, 20, 30, ?, 56

Clues:

The sequence is generated by adding consecutive even numbers.

Each number in the sequence is the sum of the previous number and an incrementally increasing even number.

Solve it:

Start with the first number, which is 2.

The next number is 2 + 4 = 6.

The number after that is 6 + 6 = 12.

Continue this pattern to find the missing number.

Solution:

2 (starting number)

2 + 4 = 6

6 + 6 = 12

12 + 8 = 20

20 + 10 = 30

To find the missing number, continue: 6. 30 + 12 = 42

So the complete sequence is:

2, 6, 12, 20, 30, 42, 56

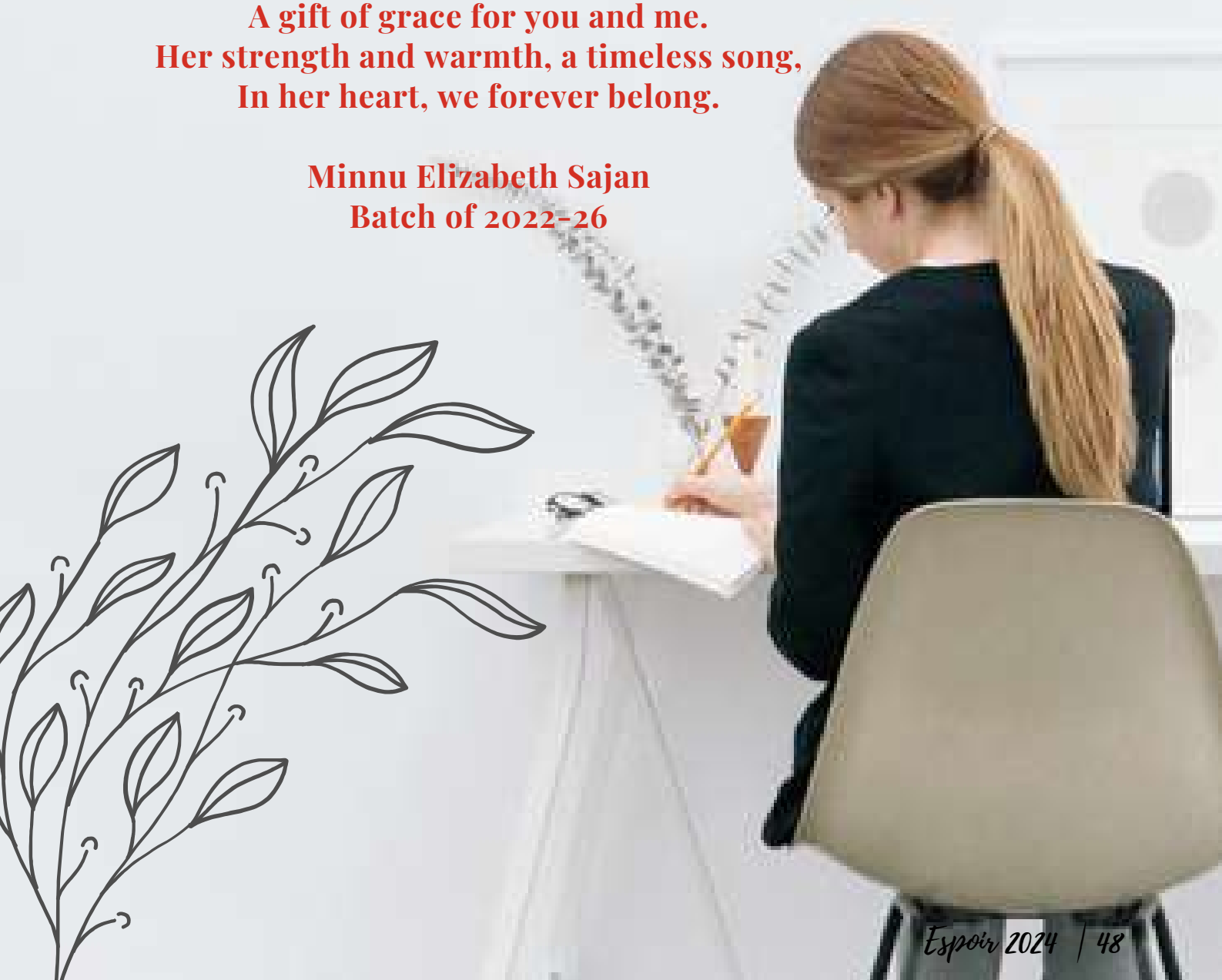
The missing number is 42.

Sandra Satheesh
Batch of 2023-27

A Mother's Love

In every whisper of the dawn's first light,
A mother's love shines pure and bright.
Her tender care, a gentle, guiding hand,
A steadfast anchor in life's shifting sand.
Through sleepless nights and days of cheer,
She holds our dreams both far and near.
Her laughter heals, her wisdom guides,
In her embrace, the world abides.
A mother's love, a boundless sea,
A gift of grace for you and me.
Her strength and warmth, a timeless song,
In her heart, we forever belong.

Minnu Elizabeth Sajan
Batch of 2022-26



Celebrating a Pioneer: Levenspiel, A Marvelous Chemical Engineer

In the annals of chemical engineering, few names resonate with the same brilliance and impact as that of Octave Levenspiel. His groundbreaking contributions to the field have left an indelible mark, revolutionizing the way we understand and apply chemical processes. As we delve into the legacy of this remarkable chemical engineer, it becomes evident why Levenspiel remains a beacon of innovation and excellence in chemical engineering.

A Legacy of Innovation

Octave Levenspiel is best known for his pioneering work in chemical reaction engineering. His seminal book, "Chemical Reaction Engineering," has become a cornerstone in the education of chemical engineers worldwide. First published in 1972, this book has guided countless students and professionals through the complexities of reactor design and reaction kinetics. Levenspiel's work provided a structured approach to understanding chemical reactions, which has been instrumental in advancing both academic research and industrial applications.

Revolutionizing Reactor Design

Levenspiel's innovative approach to reactor design and his development of the "levenspiel plot" have transformed how engineers design and optimize chemical reactors. His insights into reaction mechanisms and kinetics have helped engineers develop more efficient processes, leading to significant advancements in industries ranging from pharmaceuticals to petrochemicals.

A Mentor and Educator

Beyond his technical achievements, Levenspiel's impact is deeply felt in the realm of education. As a professor at Oregon State University, he inspired and mentored a generation of chemical engineers. His dedication to teaching and his ability to simplify complex concepts made him a beloved figure among his students. Levenspiel's passion for education and his commitment to nurturing the next generation of engineers have ensured that his influence extends far beyond his own groundbreaking research.

A Lasting Impact

Octave Levenspiel's contributions to chemical engineering are not merely confined to textbooks and academic papers. His work has had a tangible impact on industrial practices and technological advancements. By laying the groundwork for modern chemical reaction engineering, Levenspiel has played a crucial role in improving process efficiency, safety, and sustainability in various industries.

As we celebrate the life and legacy of Octave Levenspiel, we honor a pioneer whose innovative spirit and dedication to the field have shaped the landscape of chemical engineering. His work continues to inspire and guide engineers around the world, and his contributions remain a testament to the power of scientific inquiry and education. In recognizing Levenspiel's achievements, we acknowledge the profound influence of a truly marvelous chemical engineer.

A. S. Nimisha
Batch of 2021-25

Whispers of Loneliness

In the quiet of the evening's glow,
Where memories of youth gently flow,
Grandparents sit with hearts forlorn,
In rooms where laughter once was born.
The clock ticks on with rhythmic chime,
Echoing moments lost in time.
Their stories weave through days gone by,
Yet shadows linger in their eye.
Their chairs are worn, their voices mild,
Once strong, now soft, like a child.
They yearn for warmth, a touch, a smile,
In solitude, they sit awhile.
Yet in their gaze, a world unfolds,
A lifetime's worth of tales untold.
Though loneliness may softly creep,
Their love endures, their memories keep.

Akash Balakrishnan
Assistant Professor

Shades of life

Life unfolds in hues so bright,
A canvas painted day and night.
In morning's gold and twilight's blue,
Each shade reveals a story true.
The vibrant reds of passion's flare,
The calming greens of tranquil air.
Soft pastels of a tender dawn,
In each, a piece of life is drawn.
The darkened grays of sorrow's shade,
Where shadows fall and hopes may fade.
Yet in the black, a starry gleam,
Reflects the light of every dream.
From dawn's first blush to twilight's gleam,
Life's a tapestry, a living dream.
Embrace each shade with heart and soul,
For in each color, we find our whole.

FRENCY P. MATHEW
ASSISTANT PROFESSOR

VIBGYOR

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The Clarity of Realism

Understanding reality begins with embracing the truth of your current situation, free from illusions or wishful thinking. It means recognizing both your strengths and limitations while facing challenges with a clear perspective. Accepting reality helps you make informed decisions and adapt effectively to change. It's about seeing the world as it is, not as you wish it to be, and using that clarity to shape your path forward. By grounding yourself in reality, you build resilience, make better choices, and create a more authentic and fulfilling journey through life.

Mariya Binoy
Assistant Professor

Songs of Little Hearts

In fields where dandelions dance and play,
Children's laughter lights the day.
With tiny hands and hearts so bright,
They chase their dreams in pure delight.
In every game and every song,
Their boundless joy, where they belong.
Imagination takes its flight,
In castles built with daydream's might.
Eyes that sparkle with a quest,
Unburdened by the world's unrest.
Each moment filled with wonder's grace,
A treasure trove of endless space.
Through every giggle, every cheer,
Their innocence brings love so near.
In their embrace, the world is new,
A canvas painted in every hue.

Dr. Ramya Sankar M.S.
Assistant Professor

Light in Every Heart

In the bustling town of Rangpur, known for its vibrant colors and lively markets, lived a kind-hearted boy named Arjun. Each year, the town celebrated Diwali, the Festival of Lights, with great enthusiasm. The streets were adorned with twinkling lamps, colorful rangoli designs, and the sweet scent of festive treats filled the air.

This year, Arjun's family faced a challenge. His father's business had struggled, and they had little money to spare for the Diwali celebrations. While many of the town's homes sparkled with lights and joy, Arjun's house remained dim.

One evening, as Arjun wandered through the town, he noticed the bright, cheerful faces of his neighbors. Inspired by their happiness, Arjun decided to do something special. He gathered old materials, leftover diyas (oil lamps), and colorful scraps from his home.

With great care, he began crafting beautiful decorations and arranging the diyas along his home's entrance. As the sun set, Arjun lit each diya with a hopeful heart. The soft glow of the lamps cast a warm, inviting light that drew the attention of their neighbors.

Seeing Arjun's creativity and determination, the townspeople were touched. They came together, bringing food, gifts, and even more diyas to decorate Arjun's home. By the end of the night, Arjun's house was illuminated with the same brilliance as the rest of Rangpur.

That Diwali, Arjun learned that true light comes from within. It's the warmth of community and the spirit of giving that makes the festival truly bright.

Arunima Vinod
Batch of 2023-27

In bloom

In gardens where the sunlight streams,
Flowers awaken from their dreams.
Petals unfurl in vibrant hues,
Painting skies in reds and blues.
Tulips dance in gentle breeze,
Sunflowers sway with grace and ease.
Lilies whisper in soft repose,
Their fragrant beauty gently grows.
Daisies dot the fields with cheer,
Each one a smile, a joy sincere.
Roses blush with love's sweet grace,
Their tender blush a warm embrace.
In every bloom, a story told,
Of nature's art and wonders bold.
Through every color, every scent,
Life's simple joys are ever sent.

Nevin Monson Mathew
Batch of 2022-2026

The River's Gift

In the verdant hills of Kerala, nestled between lush tea plantations and tranquil backwaters, lay the serene village of Muthuvannam. The village thrived on the bounty of the Periyar River, which flowed gently through their land, providing water for crops, fish for sustenance, and a serene beauty that bound the community together.

One year, the rains were scant, and the river's flow diminished. Crops withered, and the villagers grew anxious. Among them was Anaya, a young woman known for her deep love for the river and its significance to the village. Determined to save her home, Anaya sought the wisdom of the village elder, Appu.

Appu shared an ancient story: long ago, when the river faced a similar plight, the villagers had come together to restore its health. They had planted trees along the banks to prevent erosion, cleaned the river, and respected its natural rhythms. Inspired, Anaya rallied the villagers to revive these traditions.

The community worked tirelessly, planting trees, conserving water, and cleaning the river's banks. Slowly, the Periyar began to swell with life once more. The crops flourished, and the fish returned. Anaya's dedication and the village's collective effort rekindled their bond with the river.

The river, in its renewed glory, flowed more generously than ever, a testament to the power of unity and respect for nature. The villagers of Muthuvannam learned that the health of their environment was intertwined with their own well-being and prosperity.

Meenakshi M Nair
Batch of 2023-27

Memories

DESERTIFICATION: CAUSES, EFFECTS, AND SOLUTIONS

DR. MONA MARY VARGHESE

Desertification is a global environmental challenge that transforms fertile land into arid desert. It is a critical issue that affects ecosystems, agriculture, and human societies. The process, driven by both natural and anthropogenic factors, compromises the land's productivity and poses significant risks to food security and biodiversity. Addressing desertification requires a comprehensive understanding of its causes, effects, and potential solutions.

Desertification results from a combination of natural processes and human activities. Natural causes include climatic variations such as prolonged droughts and extreme temperatures. These factors can exacerbate soil degradation, especially in already vulnerable regions.issue as it depletes vegetation cover and compacts the soil, reducing its ability to retain water.

Human activities significantly contribute to desertification through deforestation, overgrazing, and unsustainable agricultural practices. Deforestation removes vegetation that protects the soil from erosion and maintains moisture levels. Without trees and plants, soil becomes more susceptible to wind and water erosion. Overgrazing by livestock further exacerbates this.

Agricultural practices, particularly those involving monoculture and excessive irrigation, also play a crucial role. Monoculture, the cultivation of a single crop over extensive areas, depletes soil nutrients and reduces biodiversity. Excessive irrigation can lead to salinization, where salt accumulates in the soil, making it less fertile. This mismanagement of land and water resources accelerates desertification and reduces land productivi

he impacts of desertification are profound and multifaceted. Environmentally, it leads to the loss of arable land, which diminishes the land's ability to support crops and sustain biodiversity. As fertile land becomes barren, the natural habitat for various species disappears, leading to reduced biodiversity and ecosystem services.

Economically, desertification affects agriculture, which is a primary livelihood for many communities worldwide. The loss of productive land results in decreased crop yields, food insecurity, and reduced income for farmers. This economic strain can drive rural-to-urban migration, exacerbating social and economic issues in cities.

Socially, desertification can lead to conflict over increasingly scarce resources. Water and arable land become precious commodities, leading to competition and potential conflicts among communities. In extreme cases, desertification can contribute to the displacement of populations, creating environmental refugees who seek more hospitable conditions.

Addressing desertification requires a multifaceted approach that includes prevention, mitigation, and restoration strategies. Key solutions involve sustainable land management practices, reforestation, and international cooperation.

1. Sustainable Land Management: Implementing sustainable land management practices is crucial in preventing and mitigating desertification. Techniques such as agroforestry, which integrates trees and shrubs into agricultural systems, help improve soil health and reduce erosion. Conservation tillage, which minimizes soil disturbance, can also help maintain soil structure and fertility.
2. Reforestation and Afforestation: Reforestation, the process of restoring forests in deforested areas, and afforestation, planting forests in areas where they did not previously exist, are effective in combating desertification. Trees help anchor the soil, reduce erosion, and improve moisture retention. These efforts can also enhance biodiversity and contribute to climate change mitigation by sequestering carbon dioxide.
3. Water Management: Efficient water management is critical in arid and semi-arid regions. Techniques such as rainwater harvesting, drip irrigation, and the construction of check dams can help conserve water and reduce soil salinization. These methods ensure that water resources are used more effectively, reducing the pressure on land and improving agricultural productivity.
4. Public Awareness and Education: Raising awareness about desertification and its impacts is essential for fostering community involvement and support for sustainable practices. Educational programs that inform farmers, policymakers, and the general public about the causes and solutions to desertification can drive behavioral changes and promote more sustainable land use practices.

Desertification is a pressing environmental issue with far-reaching consequences for ecosystems, economies, and societies. While the challenge is significant, there are effective solutions that can mitigate its impact and restore degraded lands. By implementing sustainable land management practices, supporting reforestation efforts, managing water resources wisely, fostering international cooperation, and promoting public awareness, we can combat desertification and work towards a more sustainable future. Addressing this issue not only helps preserve the environment but also ensures the well-being of communities dependent on the land.

CLIMATE CHANGE

TEMPERATURES AND WEATHER PATTERNS

Fathima Jahana
Batch of 2023-27

The Rising water

Climate change has significantly impacted global water levels, leading to a notable rise in sea levels. As global temperatures increase, polar ice caps and glaciers are melting at an accelerated rate, contributing to higher ocean levels. Additionally, the thermal expansion of seawater due to rising temperatures exacerbates this effect, further swelling the seas. This rise in water levels poses a serious threat to coastal communities, causing more frequent and severe flooding, erosion, and habitat loss. The encroachment of seawater into freshwater systems and agricultural lands disrupts ecosystems and human livelihoods alike, underscoring the urgent need for comprehensive climate action to mitigate these effects and adapt to the changing environment.

An overflow of water

The overflow of water, often resulting from excessive rainfall or the breaching of riverbanks, poses significant challenges to communities and infrastructure. When rivers, lakes, or reservoirs exceed their capacity due to heavy precipitation or rapid snowmelt, the excess water spills over, flooding surrounding areas. This can lead to widespread property damage, disrupt transportation networks, and endanger lives as water inundates homes, fields, and critical infrastructure.

Furthermore, the overflow of water can have lasting environmental impacts. Floodwaters can carry pollutants, sediments, and debris into previously unaffected , contaminating soil and water supplies. The resultant erosion can alter landscapes and damage natural habitats, affecting wildlife and plant life. Effective flood management strategies and infrastructure improvements are crucial to mitigating these risks and enhancing community resilience against the increasing frequency due to climate change.

A Kaleidoscope of Campus Life

In vibrant halls where laughter rings,
A tapestry of youth's bright strings,
The campus hums with colors bold,
A lively story, new and old.
Sunlit mornings, where dreams ignite,
Classrooms buzz with knowledge bright.
Friends gather round in joyful cheer,
Every moment, far and near.
Underneath the autumn's gold,
Stories of young hearts unfold.
Festive days with banners high,
Underneath the wide, blue sky.
From late-night talks to lectures keen,
Every day, a vibrant scene.
In this mosaic, we all play,
A kaleidoscope of youth's array.

Dr. Nivedita S
Assistant Professor

Achievements

"1. Akhil Mohan, Annie Maria Stany, Sona Marya Joseph, and Rajasree Retnamma presented their research on a platinum group metal-free electrocatalyst for PEMWE at the IICHE – CHEMCON conference from December 27-30, 2023."

2. "Dhanyasree M and Punnya Brahmanand analyzed daylight dissemination in high-rise interiors at the 14th International Conference on Sustainable Built Environment (ICSBE) held from December 15-17, 2023."

3. "K V Vyshnavi Pal, Laxy Poly, M Dhanyasree, T M Jayakrishnan, and J N Ullas Krishnan reviewed the utilization of phase change materials for electric vehicle battery thermal management at the IC-SGMat conference from November 30 to December 2, 2023."

4. "Sreelekshmi S, Aiswarya Raj, and Vishnuprasad investigated the enhanced thermal properties of hybrid nanofluids at the Students Chemical Engineering Congress (SCHEMCON 2023) on September 22-23, 2023."

5. "Liya Joseph, Bhanupriya J, and Nabeel presented their work on textile dye removal using bioadsorbents at the International Conference on Advancements in Science from April 25-26, 2024."

6. "Navas, Vishakh V, and Nivedita S participated in the Technology and Management Conference (ICASTM) 2024, focusing on innovative solutions in technology and management."

6. Ms Sreelakshmi S was selected under Mentoring of Engineering Students by INAE Fellows/INAE Young Associates during the academic year 2023-2024 under the guidance of Dr. Noel Jacob Kaleekal, Assistant Professor, NIT Calicut with a project support of Rs 5000.

7. Dr. Ullas Krishnan J N, Assistant Professor [Sr], received the Best Paper Award in Oral Presentation at the International Conference IICHE–CHEMCON 2023 for his work on 'Alumina-based Multi-metal Catalyst for E-waste Management for Reclamation of Valuable Products,' held from December 27-30, 2023."

MoU's

On December 6, 2024, an MoU was signed with Sanson Chemical Industries, located at Industrial Development Plot No. 21, Poovanthuruthu, Kottayam, Kerala, India. The memorandum of understanding is set to last for five years. Under this agreement, both parties will engage in a variety of collaborative activities including research and consultancy services, as well as the exchange of facilities. The MoU also outlines provisions for student internships and industrial visits, providing valuable practical experience and exposure. Additionally, it encompasses collaborative projects and recruitment opportunities, fostering a strong partnership aimed at advancing both academic and industrial goals.

1. "Vishnuprasad Selvaraj, Sreelekshmi, Mariya Binoy, and Sony George investigated the synergistic effect and thermal properties of poly-hydroxyethyl methacrylate encapsulated graphene quantum dot-paraffin hybrid nanofluid, published in Diamond and Related Materials, 147 (2024), 111295."

2. "P. Abirami, V. Selvaraj, S. Mitran, M. Narayanan, and P. Ramaswamy conducted experimental studies on tannery wastewater treatment using combined electrocoagulation and ultrasonication processes, with response surface methodology optimization, published in International Journal of Environmental Science and Technology (2024)."

3. Binu K Mathews, Dr. Mathew Jacob, Mr. Anish B, Bhaskaran, Mrs. Anu Mary John, Mr. Abel Abraham Jacob, Dr. Vishnuprasad S published a patent on "'Production of methane from plastic waste by combined autogenic pyrolysis and fluidized bed gasification on 01 December 2023.

"1. Dr. Panneerselvam Renganathan, Associate Professor in the Department of Chemical Engineering at the National Institute of Technology Calicut, delivered an expert talk on 'India's Energy Transition Towards Green Shift: Opportunities in Chemical Engineering' on November 2, 2023."

2. "Mr. Krishnan M. N., Senior Environmental Engineer and Head Office at the Kerala State Pollution Control Board, conducted an online expert talk on 'Treatment of Industrial Wastewater' on December 2, 2023."

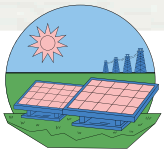
3. "Fr. Johnson Joseph, Assistant Professor and HOD of the Department of Psychology at Kuriakose Elias College, Mannannam, Kottayam, gave an expert talk on 'Developing Intellectual and Spiritual Knowledge in Students' on December 14, 2023."

4. "The Station Officer of the Fire and Rescue Station Changanassery led a field visit on 'Safety and Disaster Management' on December 8, 2023."

International Day of Clean Air and blue Skies

On September 8, 2024, our department, in collaboration with the Student Association of Chemical Engineering (SaCh), celebrated the International Day of Clean Air for Blue Skies with the theme "Green Solutions for Blue Skies: Addressing Air Pollution." The event included a special lecture by Dr. Vishnuprasad S. on pollution control methods, and various competitions such as poster making, seminars, drawing, and photography. Highlights included Cerin Sunny's winning poster on air pollution's impact on ecosystems, Beema Noushad's top seminar presentation on CO_2 conversion technologies, Harikrishnan's thought-provoking drawing, and Naveen S Lal's striking photograph capturing the essence of the sky. The celebration successfully increased awareness about air pollution and inspired students to explore and contribute to cleaner air solutions through creative and research-based activities.

World Energy Day

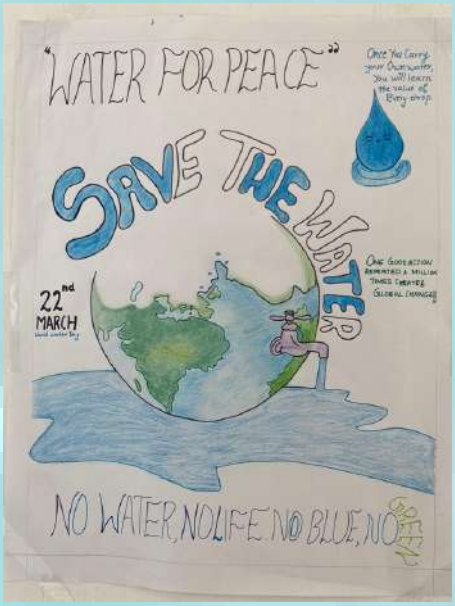


In celebration of World Clean Energy Day 2024 on February 5th, our department, in collaboration with the Student Association of Chemical Engineering, hosted a series of engaging events themed "Powering the Future: Sustainable Energy Solutions." The day commenced with a compelling address by Dr. Anshy Oonnittan, highlighting the pivotal role of clean energy in combating climate change and the crucial involvement of young engineers. Dr. Nivedita S. delivered an insightful lecture on "Bioenergy - Fair and Sustainable," while competitions in essay writing and poster making allowed students to creatively explore and express their ideas on clean energy. The essay competition, featuring 48 participants, saw Meenu M. (Second Year, CH) win for her exceptional work on innovative clean energy solutions. Jinsha Sherin (First Year, CH) was awarded for her outstanding poster on clean energy technologies. The event successfully fostered awareness, encouraged critical thinking, and inspired a commitment to sustainability within our academic community.

International water Day

On March 18, 2024, the Department of Chemical Engineering at Saintgits College of Engineering, in collaboration with the Student Association of Chemical Engineering, celebrated International Water Day with the theme "Microplastics: Tiny Culprits in the Aquatic Environment." The event featured a compelling introductory address by Dr. S. Vishnuprasad, a special lecture by Dr. Anshy Oonnittan on microplastic pollution, and various competitions including essay writing, poster making, photography, and a project exhibition. Highlights included Mohamed Aslam K. A.'s winning essay on microplastics, Kareena A. J. and Gouri Biju Raj's impactful poster, and Naveen S Lal and Nevin Monson Mathew's award-winning photograph. The project expo showcased innovative solutions for water conservation and microplastic mitigation. The event successfully raised awareness, fostered student engagement, and emphasized the importance of addressing water sustainability and pollution, making a significant impact on the academic community and beyond.

Posters



Social Outreach programs

The outreach program on "Environmental Sustainability and Chemical Engineering," held for higher secondary students at Kendriya Vidyalaya Kaduthuruthy, successfully bridged the gap between academic knowledge and practical application in addressing environmental challenges. Featuring lectures by Dr. Ullas Krishnan and Ms. Priwiya Peter on green chemistry, waste management, and renewable energy, the program engaged participants through workshops, interactive sessions, and networking opportunities. Key outcomes included a significant increase in participants' awareness of sustainable practices, heightened interest in careers related to sustainable chemical engineering, and the initiation of collaborative projects. Despite challenges such as balancing diverse knowledge levels and limited hands-on resources, the program effectively inspired action and fostered collaboration, with recommendations for future improvements including tailored sessions, extended interactive time, and additional resources to enhance learning and engagement.

On 27th March 2024, in honor of International Water Day, a social outreach activity focused on microplastics pollution was held at Pathamattom. The event aimed to raise awareness about the detrimental effects of microplastics on aquatic ecosystems and human health. Educational sessions were conducted to inform the public about reducing plastic use and adopting sustainable alternatives. The initiative not only highlighted the global issue of water pollution but also encouraged active participation in preserving local water resources.

Social Outreach

Social outreach is not just about giving; it's about connecting, understanding, and empowering communities to create lasting change.

Class photos

Class photos

“As you leave your college days behind, remember that the friendships and experiences you gathered are the treasures you’ll cherish forever.”

Editorial Team

On behalf of the entire editorial team, it has been a joy to bring you this special edition of Espoir. We aimed to curate stories, essays, and art that capture the essence of hope—its power to uplift, inspire, and ignite change. We extend our heartfelt thanks to our talented contributors for sharing their creativity and passion, and to you, our readers, for your ongoing support.

As we conclude this edition, we hope the spirit of Espoir remains with you, inspiring hope in your own life and within your communities. Thank you for being a part of this journey with us.

Team Espoir

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LEARN GROW EXCEL

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SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS), KOTTAYAM

CERTIFICATE

OF ACHIEVEMENT

THIS CERTIFICATE IS AWARDED TO

Meenu M.

Of 2022-26 batch of Chemical Engineering Department for his exceptional service and outstanding contributions as the Opinion Editor of the Department Magazine Espoir (2024 Edition). His dedication, creativity, and leadership have been integral to the success of the publication.

Mr. Akash Balakrishnan
Staff Editor

Dr. Anshy Oonnittan
HOD