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Issue No 72 ■ August - September 2024

INSIGHTS

Plastic Industry in Focus



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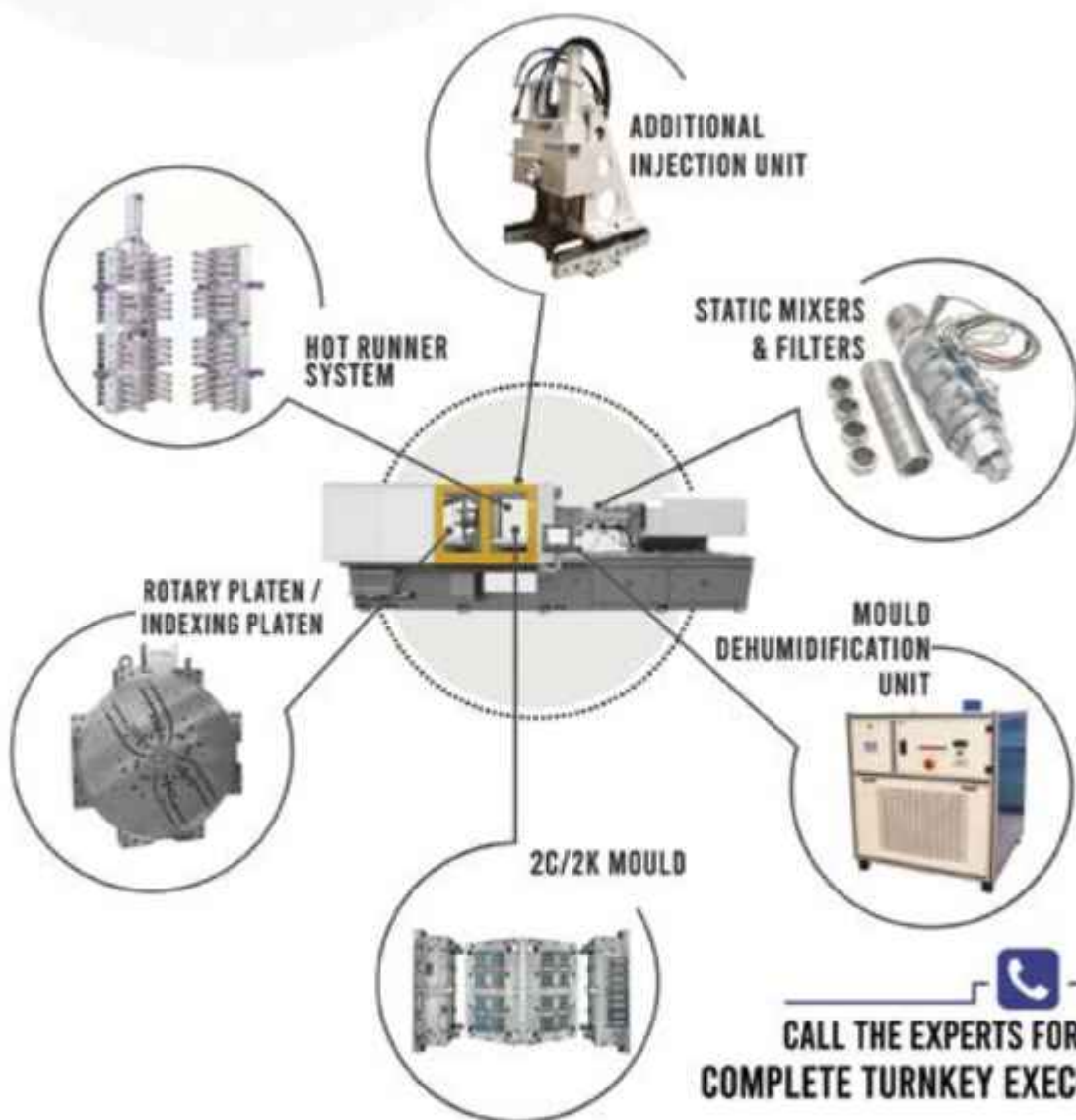
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PRESIDENT DESK

Dear Industry Colleagues & Friends,

With 'INSIGHTS' refreshed look and expanded coverage, this platform continues to be a crucial resource for showcasing the key developments in our dynamic industry. While the previous issue focused on environment, plastic waste management, sustainability, and recycling, this edition turns its attention to critical areas such as infrastructure development, the role of plastics in construction, and their significance to India's modernization efforts.

The plastics industry holds a pivotal place in India's economy. Beyond driving manufacturing growth, it also generates diverse employment opportunities, fosters skill development, and nurtures entrepreneurship. Our sector's contribution to national infrastructure is undeniable, as plastics have become indispensable in modern construction, fuelling innovations in lightweight, durable, and cost-effective materials.

Infrastructure development is a cornerstone of India's progress. As the country undertakes transformative projects in roads, bridges, housing, and transportation, plastics offer essential solutions. Their strength, durability, and versatility help to reduce construction time and costs while enhancing the resilience of the structures they support. These unique properties of plastics are crucial in enabling the construction of sustainable, energy-efficient buildings and infrastructure that cater to India's rapidly urbanizing population.

At Plastindia Foundation, we remain committed to ensuring that our industry leads in delivering cutting-edge materials for infrastructure projects aligned with the nation's developmental priorities. By advancing research and innovation in plastics for construction, we are enhancing the sector's contribution to India's infrastructure in terms of sustainability, durability, and safety.

Our commitment has also garnered global recognition. As a permanent member of the Asia Plastic Forum, Plastindia Foundation has recently joined the Global Plastic Alliance, where our contributions toward infrastructure development alongside the responsible use

of plastics continue to shape the future of global manufacturing and construction.

Furthermore, we actively collaborate with the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, offering expertise on integrating plastics into infrastructure projects to drive efficiency, modernization, and adherence to green building standards.

Plastics, often misunderstood, extend far beyond consumer goods. Their growing role in infrastructure development cannot be overstated. From high-strength pipes for water and sanitation systems to innovative materials for roads, bridges and buildings, plastics are revolutionizing how we build and live.

With the active participation of all industry stakeholders, I am confident that we will continue to shift perceptions and demonstrate that plastics, as a versatile and essential material, are driving the infrastructure advancements critical to India's future growth.

Together, let's continue promoting the responsible use of plastics in infrastructure for a stronger, more resilient nation. 



Ravish Kamath

President, Plastindia Foundation

EVENT SCHEDULE

OCT 2024 TO JAN 2025

	Date	Company
October	10-12	PackPrintPlas Philippines 2024 Venue : SMX Convention Center, Manila, Philippines
	15-17	Oman Plast 2024 Venue : Oman Convention & Exhibition Center, Muscat Sultanate of Oman
	15-19	Fakuma 2024 Venue : Messe Friedrichshafen, Germany
	16-19	VietnamPlas 2024 Venue : Saigoan Exhibition & Convention Center (SECC), Ho Chi Minh, Vietnam
	29-31	Plastic Japan 2024 Venue : Makuhari Messe, Japan
November	13-14	PRS ASIA 2024 Venue : Marina Bay Sands, Singapore
	20-23	Plastics & Rubber Indonesia 2024 Venue : Jakarta International Expo, Kemayoran, Indonesia
	27-28	PAM2024 Venue : JW Marriott Sahar Mumbai, India
	28-30	Complast Nepal 2024 Venue : Bhrikuti Mandap, Kathmandu, Nepal
December	04-06	PRS INDIA 2024 Venue : Bombay Exhibition Center, Mumbai, India
	04-07	Plast Eurasia Istanbul 2024 Venue : Tuyap Fair Convention and Congress Center, Istanbul
	06-09	Plexpo India 2024 Venue : Gandhinagar, Gujarat, India
	13-16	Machma Plast 2024 Venue : Parade Ground, Sector 17, Chandigarh, India
2025	January	
	07-09	Arabplast 2025 Venue : Dubai World Trade Center, Dubai



Ramesh Parasuraman,

Editor

PLASTICS:

A Transformative Material for Modern Infrastructure

Plastics have become an integral component in the development of modern infrastructure, significantly driving innovation, enhancing durability, and contributing to sustainability in construction. As the global construction industry continues to evolve, the role of plastics in shaping infrastructure projects is expected to expand substantially. In India, for example, the infrastructure sector is set to be a key economic driver, with an ambitious investment plan of ₹143 trillion between 2024 and 2030.

The unique properties of plastics—strength, durability, waterproofing, lightweight nature, versatility in moulding, and recyclability make them ideal for a wide range of construction applications. Recycled plastics are being increasingly utilized in manufacturing bricks, tiles, concrete, and roadways, where they function as binders, aggregates, and even as replacements for traditional materials like cement and sand.

Amid growing concerns over fire safety in modern construction, plastics are gaining recognition for their fire-resistant properties. Plastics are now integral to many fire safety systems, including smoke detectors, alarms, and firefighting equipment. Polyvinyl chloride (PVC) in particular, has become a leading material in the construction sector due to its inherent fire safety features.

Incorporating plastic waste into construction offers an environmentally sustainable solution by reducing landfill waste and lowering the demand for waste incineration.

Plastics also play a crucial role in road construction through polymer-modified asphalt, which enhances road surface durability and performance. Additionally, plastics are widely

used in road markings and signage, contributing to improved road safety. A recent initiative by India's Central Government encourages States and Union Territories (UTs) to use plastic waste in road construction projects, with formal directives issued by the Ministry of Housing and Urban Affairs to promote this approach.

One of the most significant applications of plastics in infrastructure is in piping and plumbing systems. Plastic pipes, particularly those made from PVC and PE, offer numerous advantages over traditional materials such as concrete and iron. PVC pipes are extensively used for transporting water, waste, and other fluids in residential, commercial, and industrial settings, owing to their resistance to corrosion, rust, and microbial growth, resulting in long-lasting low-maintenance solutions.

In conclusion, the plastics industry continues to innovate, delivering new features, designs and solutions that meet the demands of contemporary construction. This adaptability and versatility make plastics a vital material in the future of infrastructure development, favoured by architects and engineers alike for their transformative potential. ■

PLASTINDIA 2026 has emerged as a landmark event in the plastics industry, thanks to the support from our industry partners. This event is not just about showcasing products; it's a vital platform for creating new business opportunities and driving innovation.

Scheduled to take place at the world-class Bharat Mandapam (Pragati Maidan) in Delhi, PLASTINDIA 2026 will utilize over 500,000 square meters for a grand exhibition. Our commitment to sustainability is evident, as we aim to make this a zero-waste exhibition. Attendees will witness live demonstrations of advanced waste collection and recycling systems, highlighting our dedication to responsible business practices.



PLASTINDIA 2026 is About Leveraging Global Opportunities, Sustainably

The event will host over 250 theme-based conferences over four days, featuring expert discussions on technology advancements and the government's vision for sectors like space exploration, defense, and infrastructure. This is particularly timely, given India's growth in railways, aerospace, semiconductor manufacturing and electronics presenting unprecedented opportunities for the plastics sector.

The conferences will host some serious discussions with sustainability at the core. We will invite experts and officials from various government departments to discuss technology advancements, vendor development, and the government's vision and mission in sectors like space exploration, defense and infrastructure projects such as AMRIT (Atal Mission for Rejuvenation and Urban Transformation), Jal Jeevan Mission (JJM) and unravel the unprecedented opportunities that massive rural and urban development are also presenting to the world.

A key highlight will be the CEO Conclave, where the top 100 industry leaders including CEOs from international companies, retailers, and technology providers will gather to explore investment opportunities in India and what the world can offer in return.

We are dedicated to fostering an environment where businesses can thrive. By bringing together key players from various sectors, PLASTINDIA 2026 aims to act as a catalyst for growth and innovation in the industry.

I invite everyone to participate in this transformative event. Together, we can advance our industry, create new business avenues and contribute to a prosperous 'Viksit Bharat.' Be part of this remarkable journey and witness a model that the world will aspire to follow!

Alok Tibrewal

Chairman, National Executive Council (NEC)

PLASTINDIA 2026 Launched

Propelling India's Plastics Industry Towards Sustainability, Innovation and Global Leadership

WELCOME TO THE LAUNCH OF

PLASTINDIA 2026



“

The Plastindia Foundation unveiled PLASTINDIA 2026, spotlighting the plastics industry's vital role in India's economic growth and sustainability.

Hon'ble Commerce Minister Shri Piyush Goyal called for innovation and a target of 20% annual growth rate.

The event highlighted ambitious plans for a zero-waste exhibition and the industry's commitment to education, innovation, environmental responsibility and global collaboration for future success. A Report

”

The Plastindia Foundation officially launched PLASTINDIA 2026, the 12th edition of the prestigious international plastics exhibition, conference and convention, at a grand ceremony held at the Grand Hyatt in Mumbai on 23rd August, 2024. Graced by the Hon'ble Minister of Commerce and Industry, Government of India, Shri Piyush Goyal, who inaugurated the launch, underscoring the pivotal role of the plastics industry in India's economic growth, sustainability goals and its journey towards becoming a developed nation.



The packed house during the launch witnessed unprecedented enthusiasm along with convergence of industry leaders and stakeholders from around the globe. Along with Shri Piyush Goyal and Shri Sunil Singhi, Hon'ble Chairman of the National Traders' Welfare Board, Ministry of Commerce & Industry, Government of India; Alok Tibrewala, Chairman of the National Executive Council for PLASTINDIA 2026; Ravish Kamath, President of the Plastindia Foundation; Raju Desai, Vice President of the Plastindia Foundation; Dharmendra Gandhi, Hon. Treasurer of the Plastindia Foundation; Pradeep Rathod, Chairman of the National Advisory Board of the Plastindia Foundation; Thomas Franken, Director K, Portfolio: Plastics & Rubber at Messe Düsseldorf GmbH; and Jigish Doshi, Immediate Past President of the Plastindia Foundation, set the tone for the event.

A highlight of the evening was the symbolic lighting of the lamp ceremony. Utilising an innovative LED diya whose circuit completed with water, the attendees, seated at their individual tables, collectively poured water into the diya, illuminating it and signifying unity and collective effort.

A Catalyst for Growth and Innovation

In his keynote address, Shri Piyush Goyal commended the plastic industry's positivity, enthusiasm and commitment. He acknowledged the substantial contributions of the Plastindia Foundation and the plastics sector to India's economic growth. Particularly impressed by the industry's modest request for collaboration, he emphasised the immense potential the plastics industry holds for India.

Shri Piyush Goyal urged industry leaders to harness India's talent and skills, stressing the importance of economies of scale, innovation and technology adoption to enhance competitiveness. "It's time we start capturing world markets, taking confident strides towards self-reliance and engaging with the rest of the world from a position of strength", he remarked.

He revealed that both the Hon'ble Prime Minister Shri Narendra Modi and the Hon'ble Home Minister Shri Amit Shah have expressed strong support for the plastics industry, recognising its significant contribution to employment and its bright future. Shri Piyush Goyal highlighted the Prime Minister's particular closeness to the plastics sector.

Announcing plans to host the CEO's conclave alongside PLASTINDIA 2026 in the prestigious Leader's Summit Room - where the G20 Summit was held - Shri Piyush Goyal invited industry leaders to be his guests for an evening of interaction and dinner. He encouraged the Plastindia Foundation to consider hosting the exhibition more frequently, given the rapid advancements in the plastics industry.

Setting the tone for future endeavours, he proposed the tagline '**Bharat Forever**' for subsequent editions of PLASTINDIA, emphasising the lasting impact the industry will have on India's future. Shri Piyush Goyal envisions India hosting not just world-class, but the world's largest exhibitions, aligning with the nation's aspiration to become a developed nation - a '**Viksit Bharat**'.



Lighting the Lamp of Knowledge!

He underscored the need for bold thinking and ambition, stating "If India wants to become the third-largest economy by 2027, grow from a USD 3.5 trillion economy to a USD 35 trillion economy in the next 25 years, and provide prosperity and a better quality of life to every single child born here, then it's time to think big". He added that embracing technology and modern advancements will position India at the forefront of global progress.

Shri Piyush Goyal encouraged the plastics industry to aim for a 20% annual growth rate, surpassing the country's nominal GDP growth of 11%. He highlighted that today, plastics is creating its impact and finding newer applications across industries. Plastics provide all the ingredients that the modern world is looking for, like its versatility, durability,

flexibility and lightweight properties that meet modern demands. "We should aspire to increase our global trade share from the current 1.8% to 20% and eventually reach USD 100 billion in exports," he urged.

Expressing confidence in India's ability to overcome challenges, he stated "There will be a million problems, but we have a billion minds to solve them. He assured that the government is willing to take every possible step to support the plastics industry, emphasising the importance of quality standards to prevent the influx of substandard imports as we have the capability to do better than them.

Addressing environmental concerns, Shri Piyush Goyal advocated for a greater focus on the circular economy.

**Government Support and Collaboration**

Shri Piyush Goyal assured industry stakeholders of the government's unwavering support. He announced the formation of a dedicated team from the Department for Promotion of Industry and Internal Trade (DPIIT) within the Ministry of Commerce and Industry to assist the Plastindia Foundation for any requirements from any State or Central Government so as to address any challenges faced by the sector.

Acknowledging Industry Leaders, Sponsors and Industry Status

Ravish Kamath extended a warm welcome to all dignitaries and participants. He highlighted the significant contributions of key industry players, whose support has been instrumental in the sector's growth, and underscored the indispensable role of plastics in modern life and India's journey towards becoming a developed nation.

He acknowledged the unwavering

support from major sponsors, including Reliance Industries, Lohia Corp, Supreme Industries, Alok Masterbatches, Cosmo Films Ltd., HPCL-Mittal Energy Ltd., IVL Dhunseri Petrochem Industries and Neelgiri Machinery Global Pvt. Ltd.

He detailed the remarkable growth of the Indian plastics industry over the past decade. The industry expanded from a market size of USD 15 billion in 2010 to over USD 37 billion in 2023 and is projected to reach USD 50 billion by 2026. Employment in the sector currently stands at approximately 4 million people, expected to grow to 5.5 million by 2026.

He emphasised the industry's substantial contribution to the Indian economy, accounting for approximately 1.5% of India's GDP in 2023, with expectations to reach nearly 2% by 2026. India's plastic exports have also seen significant growth, with exports worth approximately USD 10 billion in 2023, projected to increase to USD 15 billion by 2026.



PLASTINDIA 2026: Bharat Next

Alok Tibrewala expressed his appreciation for the Minister's presence and support. He unveiled the theme for PLASTINDIA 2026, 'Bharat Next', symbolising the growth of the plastics industry across all sectors and its commitment to innovation.

Ambitious plans for PLASTINDIA 2026 were announced, aiming to make it the world's largest plastics exhibition. Scheduled to be held from 5th to 10th February, 2026 at the Bharat Mandapam (Pragati Maidan) in New Delhi, the event aims to cover the entire 5,00,000 square metres of this mega venue, accommodating over 1,500 domestic exhibitors and 500 international participants. An expected footfall of over 6,00,000 visitors underscores the event's magnitude.

In order to meet the enormous industry demands, in addition to the 20 halls, we are also considering the construction of world-class temporary structures for the event. The focus is on enhancing the visitor experience through technological advancements, including a dedicated mobile app, improved networking facilities and efficient services. In a significant move, the Plastindia Foundation has booked almost the entire Convention Centre for four days to host the biggest conferencing, convention and workshop the industry has ever seen.

An industry first, PLASTINDIA 2026 will be a zero-waste exhibition, ensuring no waste from the

exhibition grounds goes to landfills. To enhance the visitor experience, the concept of a 'Tatkal Gate' is being explored for seamless entry.

A special promotion was announced: exhibitors who book booth space before 31st October, 2024 will receive a special discount of Rs. 800 per square metre. Those who participated in PLASTINDIA 2023, will get an additional Rs. 800 per square metre as a loyalty discount.

Global Perspectives

Addressing the gathering, Thomas Franken emphasised the importance of global collaboration. He expressed confidence in the event's potential to attract participants from around the world.



He highlighted the themes of the upcoming K Show in Germany, focusing on the circular economy, sustainable practices and technological innovations shaping the industry's future. "These themes will also play a significant role in the next edition of PLASTINDIA in 2026," he added.

Thomas Franken underscored emerging trends and the need for the industry to adapt to global shifts, particularly in technology and market demands.



Education and Skill Development

Ravish Kamath highlighted that the cornerstone of the industry's future lies in education and skill enhancement. The PlastIndia International University (PIU), located in Vapi, Gujarat stands as a testament to this commitment. Dedicated to plastics and sustainability, PIU aims to nurture the next generation of industry professionals. Investment in education is seen as crucial for fostering innovation and expertise in the plastics domain.

Industry Opportunities

Pradeep Rathod addressed the evolving landscape of the plastics industry, acknowledging the opportunities and challenges posed by technological advancements, regulatory changes and shifting public perceptions. He emphasised the collective responsibility to navigate these changes with foresight and determination. He underscored the need for the industry to champion sustainable practices, enhance collaboration and embrace technological innovations to remain globally competitive.

A Call to Ambition

In his concluding remarks, Shri Piyush Goyal emphasised that innovation is the way forward. He urged industry captains to have dedicated teams and to be bold in their aspirations. "If we all come together with new ideas and innovate new products, the industry will grow, employment will increase for millions, and our businesses will flourish," he stated.

He highlighted India's journey toward self-reliance (Atmanirbhar Bharat) during the 'Amrit Kaal', as the nation marches toward becoming a developed country. He noted that India has transformed from being a fragile economy to the world's fifth-largest economy, with substantial foreign exchange reserves. "According to every survey, the next few decades belong to India," he affirmed.

Shri Piyush Goyal acknowledged the significant contribution of plastics to every person's life and lifestyle, urging the industry never to underestimate its impact. "Your contribution is nothing less than service to the country," he said. He encouraged the industry to embrace best practices, innovation, technology, economies of scale and high quality, asserting that with these, there is no stopping India's progress.



“



He concluded with confidence, stating, "Let us decide that India's plastics industry will be the best in the world. Remember, the Indian plastics industry is second to none. With quality, innovation and technology, we can achieve greatness." Quoting actor Shah Rukh Khan, he added, "If we desire something earnestly, the universe conspires to make it happen."

”

Looking Ahead

Raju Desai delivered the vote of thanks, expressing gratitude to all the speakers, attendees, sponsors, exhibitors, partners, the organising team and the media. "As we look forward to PLASTINDIA 2026, we are filled with optimism and determination," he said, "This event will not only showcase our industry's strengths, but also pave the way for future advancements."

He invited guests to participate actively in the upcoming exhibition and to join in collaborative efforts to drive the industry forward.

Closing Note

The event concluded with networking opportunities and a dinner, fostering camaraderie among industry participants. The atmosphere was one of enthusiasm and collective resolve to make PLASTINDIA 2026, a resounding success. ■



Plastindia Foundation (PIF) actively participated at IPLAS 2024, one of the leading exhibitions held during 14-17 June, 2024 in Chennai.

The event organized by The Tamilnadu Plastics Manufacturer's Association (TAPMA) provided a fantastic platform for showcasing the latest advancements and innovations in the plastics industry.

Inauguration of Plastindia Foundation's booth was held in the presence of Mr. Madan Surana, TAPMA, Mr. B. Swaminathan, Visitor Promotion (Mass), Mr. Radhakrishnan, IAS & Commissioner of Greater Chennai Corporation, Govt. of Tamil Nadu and Mr. C K Sekar, Chairman Organizing Committee – IPLAS.

Plastindia Foundation Participates at

IPLAS 2024

During the event key industry leaders and stakeholders visited PIF stall, fostering meaningful discussions and collaborations that are set to drive the industry towards greater innovation and sustainability.

The team at Plastindia Foundation remains dedicated towards promoting the growth of sector with the innovation and sustainability within the plastics industry.

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President graced the PLEXPO 2024 launch

Mr. Ravish Kamath,
President, PlastIndia
Foundation, was
invited as the Hon'ble
Chief Guest at the
launch event of
PLEXPO 2024, held on
June 28, 2024 at
Ahmedabad.

Organised by the Gujarat State Plastics Manufacturers Association (GSPMA); one of the founder members of PlastIndia Foundation, this year the 9th edition of PLEXPO 2024 will be held during 06-09 December, 2024, at the Helipad Exhibition Ground Gandhinagar, Gujarat.

Addressing audience at the event, Mr. Kamath emphasized Gujarat's contributions to national and global markets; noting its emergence as a powerhouse in the plastic sector over the past decade.



Also the theme of the event for the year is 'Connect, Collaborate and Explore' a call to action for participants to push the boundaries of innovation and sustainability in the plastic industry.

Highlighting further about strategic location, robust infrastructure and supportive policies of Gujarat government, he appreciated about diverse range of products, used in various industries from packaging and construction to automotive and healthcare.

Notable investments in the petrochemical sector including Naira Energy's \$20 billion petrochemical complex in Nar and the Indian Oil Corporation's facility expansion in Koli with an investment of Rs. 24,000 crores were also discussed. These projects underscore Gujarat's pivotal role in enhancing India's petrochemical production capabilities and export potential.



President The Guest of Honour at GCPRS



Mr. Ravish Kamath, President, Plastindia Foundation graced the inaugural function of the Global Conclave on Plastics Recycling and Sustainability (GCPRS) as the Guest of Honor along with the likes of Smt. Nivedita Shukla Verma, Secretary, Union Ministry of Chemicals and Fertilizers, Smt. Mercy Epao, Joint Secretary of the Union Ministry of Micro, Small and Medium Enterprises.

Among other notable attendees were AIPMA President Shri Manish Dedhia; CPMA President Shri Kamal Nanavati; AIPMA Governing Council Chairman Shri Arvind Mehta; GCPRS 2024 Chairman Shri Hiten Bheda Pranav Kumar (CPMA) to name some.



The conclave held during 4- 7 July , 2024, at Bharat Mandapam (Pragati Maidan), New Delhi, was jointly organized by the All India Plastics Manufacturers' Association (AIPMA) and the Chemicals and Petrochemicals Manufacturers' Association (CPMA), focusing on the rising use of plastic, its impact on the environment and also on the steps needed for solutions. Various businesses and experts from across the country made their presence felt at grace the conclave over the four days.

The GCPRS 2024 provided a crucial platform for discussing advancements in plastics recycling and sustainability. Mr. Kamath's presence underscored Plastindia Foundation's commitment to fostering innovation and promoting responsible recycling practices within the industry. ■



Beginning of a New Chapter in the field of Plastics and Polymer Education in India



A New Chapter began when the successful completion of a puja ceremony held at Plastindia International University (PIU), Vapi on 5th September 2024. The ceremony was organized on the auspicious occasion of Teacher's Day to mark the beginning of the academic session for the first batch of students at PIU. This sacred ritual was conducted to invoke blessings for a prosperous and fruitful journey ahead for our students and the entire university community.



The puja ceremony was attended by founder members, Governing body members, students, and their parents, creating a deeply spiritual and harmonious environment. The presence of our esteemed founder and governing members symbolized their commitment to the university's vision, while the participation of students and parents highlighted the community spirit we are fostering at PIU.



The University aims to provide formal education at Bachelors Degree Level, Masters Degree Level and Doctorate Level. In addition to this, University is keen on providing upskilling and reskilling to the industry professional and keen to impart research and consulting assignment.

The ceremony also marked the start of the students' 10-day induction program. Following the puja, the induction program continued with various sessions aimed at acclimatizing students to university life and familiarizing them with our academic and industry goals. The induction focused on personal development, academic orientation and preparing the students for their journey at PIU.



The University officials added : "The formal inauguration ceremony of Plastindia International University is scheduled to take place around January 2025. We are currently coordinating with our valued industry partner and industry friends, our technical collaborator UMass Lowell, USA and the Senior leadership in the Government to finalize a date that aligns with their availability. We anticipate that this event will further solidify PIU's standing as a premier institution in the field of plastics and polymer engineering".



Plastics Remains Core Material of the Modern-Day Construction Industry

Plastics have revolutionized the construction industry, offering versatile applications that enhance durability, efficiency, and sustainability in building projects worldwide. From foundational elements to finishing touches, their adaptability and resilience have reshaped how structures are designed, built and maintained.

Foundation and Structural Elements:

At the core of construction, plastics play a crucial role in reinforcing concrete and stabilizing soil. High-density polyethylene (HDPE) and polyvinyl chloride (PVC) are commonly used for underground piping systems, providing corrosion resistance and longevity against harsh environmental conditions. These materials ensure the integrity of water and sewage systems, minimizing maintenance costs and extending

infrastructure lifespan.

Beyond traditional materials, advanced composites such as fiberglass-reinforced plastics (FRP) are gaining prominence in structural applications. Lightweight yet robust, FRP rebars and panels offer superior strength-to-weight ratios compared to steel and concrete alternatives. They resist corrosion, making them ideal for marine and coastal structures bridges and earthquake-resistant buildings.



Insulation and Energy Efficiency:

Plastics contribute significantly to energy efficiency in construction through superior insulation materials. Expanded polystyrene (EPS) and extruded polystyrene (XPS) foam boards provide excellent thermal resistance, reducing heating and cooling costs in residential and commercial buildings. These lightweight materials are easy to install and contribute to sustainable construction practices by minimizing energy consumption and greenhouse gas emissions.

Waterproofing and Weatherproofing:

In climates prone to extreme weather, plastics excel in waterproofing and weatherproofing applications. Polyethylene and polypropylene membranes create seamless barriers against moisture intrusion in roofs, foundations, and basements. Their flexibility and durability ensure long-term protection against water damage, mold growth and structural deterioration, maintaining indoor air quality and occupant comfort.

Interior and Exterior Finishes:

Plastics offer aesthetic versatility for interior and exterior finishes, enhancing architectural designs and reducing maintenance requirements. Vinyl siding and polymer-based cladding systems mimic the appearance of traditional materials like wood and stone while offering superior durability and resistance to fading, warping and pests. These low-maintenance solutions reduce lifecycle costs and contribute to sustainable building practices by extending building lifespans and minimizing material waste. 



Environmental Considerations:

In an era of increasing environmental awareness, plastics in construction are evolving towards sustainability. Recycled plastics and bio-based polymers are being integrated into building materials, reducing dependence on virgin resources and mitigating waste. Innovations in modular construction and prefabricated components further optimize material use and construction timelines, minimizing environmental impact and enhancing project efficiency.

Plastics have become indispensable in modern construction, offering unparalleled versatility, durability, and sustainability across diverse applications. As technological advancements continue to drive innovation, their role in shaping the future of building design and construction remains pivotal, paving the way for safer, more resilient, and environmentally responsible built environments.

**Dr. Alexander Krah**

CEO, Krah GmbH

If we talk for infrastructure products, a long or nearly endless lifetime of plastics is one of the biggest advantages and very sustainable to protect the planet and to provide a modern growth of economy. And so, the industry should follow the triage—reduce, reuse and recycle.

Plastic pipe can help sustainable infra development: sewage, drainage, storage, water supply and transporting are all part of this. The main focus of the product in the infrastructure should be; to have the product performing for its original use, with a long lifespan optimum usage of material and keeping its high performance. Depending on the application, the usage of the right material and to be sure of the right dimensions is very important.



There was a time when the new high-stiffness PP was attempted to be introduced to the market as the best new material due to its high stiffness. However, in my opinion, PE specifically HD PE100, is still the best pipe material for us. It is very reliable, has a long lifetime, easy to produce, reasonably priced and has excellent weldability. It is ideal for the entire pipe system to be homogeneous, which can be achieved through the secure welding of joints using PE material. Due to these secure joints, disconnection is impossible, even in the event of ground movement.

PE material also resists root penetration, a common issue with concrete. Another cause of leakage pipe collapse is also not an issue with PE. Additionally, PE has good abrasion resistance, and with a properly sealed manhole system, as well as fittings that are all welded homogeneously using the PE system, the integrity of the pipeline is maintained.

Due to its long lifespan, yields to a very good number of the total cost of ownership where depreciation or the investment divided by the period of use is very low if none. The material is easy and quick to install with very low maintenance as well.

Moreover, it is the saving of natural resources by optimizing the weight for its application, which I would call the creativity in technical solutions is a big advantage of plastic over conventional materials.


Haren Sanghavi

M.D, GMS Plastic Machinery Pvt. Ltd.

Plastics indeed play a significant role in construction and infrastructure development.

Plastics play a crucial role in modern construction, offering versatility, durability and sustainability. Plastics keep more people safe by making buildings and homes stronger, last longer and require less maintenance.

In the construction industry, plastics are most used for seals, pipes, cables, flooring and insulation due to unique characteristics that make them suitable for these applications. They are also used extensively in indoor mechanical fixtures, like child safety locks, smoke alarms, carbon monoxide detectors and electrical cord protectors.



Plastics are versatile materials used in various construction applications. They offer resistance to weathering, flexibility and cost-effectiveness. Common plastics used include polyvinyl chloride (PVC), high-density polyethylene (HDPE) and expanded polystyrene (EPS).

Many plastic components are highly durable and permanently installed, reducing the risk of becoming marine litter. Plastic remains one of the cost-effective materials, plastic is strong yet lightweight, easily formable, and easy to maintain.

Plastic pipes for example, account for most new pipe installations, contributing to energy-efficient infrastructure. Using recycled plastics can help reduce waste. Efforts to segregate, reuse and recycle plastic waste at the end of its life are essential for sustainable practices.

While the financial impact may not be significant, responsible plastic use aligns with corporate social responsibility and environmental reputation.

I am of the view plastics are valuable contributors to construction and infrastructure, but responsible management is crucial for a sustainable future.

In the coming years, various trends and technologies will shape the usage of plastics in building. Smart technologies and sustainable construction practices will push plastics in construction development. ■


Jai Sanghavi

Director, ITIB MACHINERY INDIA PVT. LTD.

Yes, Plastics plays a crucial role in construction and the overall infrastructure development, not only in India but world over.

Infrastructure Development requires many of plastic products, to talk about plastic pipes there are variety of pipes available depending upon application; be it Drainage and Sewerage Pipes, Telecom and Cable Ducting Pipes, Water transportation, to add for that matter, Prestressing Pipes that's gaining momentum especially in the construction of bridges that helps strengthening with post tensioning, retaining walls for highways, grouting applications, etc.



Plastics offer a variety PVC pipes, PVC Foam core pipes, PP pipes, PE Pipes, PE+EVA pipes for swimming pools, PA Pipes for electrical panels and control boxes, Railways signalling and electrification pipes, Automotive harness, EV battery connection pipes and alike. Over and above, India also produces multilayer pipes for several applications like silent SWR pipes made of PP + Barium sulphate layers, PEX pipes for hot and cold-water applications. Multilayer PLB ducts for fibre optic cables.

Generally, light weighing and easiness to handle are the most common advantages that people mention, but there are several other advantages that plastics offer. Plastic Pipes are leak-proof and tamper-proof when produced with the right material and the right thickness that is specified for each particular application.

Metal pipes are corrosive, whereas plastic pipes last more than 50 years if they are produced as per relevant standards. They are also cost-effective with a low maintenance cost. Also, plastic pipes are easy to install as installation requires fewer joints and connections. The major advantage is that all plastic pipes are recyclable.

With pipe producers adhere to manufacturing pipes as per relevant standards, I am sure there is no looking back for the demand of pipes for infrastructure and construction of buildings is definitely to grow. ▲



As the construction industry continues to evolve, plastics are expected to play an increasingly significant role in shaping the future of infrastructure projects worldwide.

What Makes Plastic the Most Sought-After Material in Construction?

Plastics have increasingly become a vital component in infrastructure development, contributing to innovation, durability, and sustainability in construction projects. The growth prospects of plastics in infrastructure development are influenced by several factors that align with the industry's evolving needs.

Plastics are strong, durable, waterproof, lightweight, easy to mold, and recyclable – all

key properties needed for construction materials. Further recycled plastic can be used as a binder, aggregate, fine aggregate, modifier or substitute of cement and sand in the manufacturing of bricks, tiles, concrete, and roads.

As the construction industry continues to evolve, plastics are expected to play an increasingly significant role in shaping the future of infrastructure projects worldwide.

As the construction industry continues to evolve, plastics are expected to play an increasingly significant role in shaping the future of infrastructure projects worldwide.

The construction industry is the second-largest industry in India, with a GDP contribution of about 9%. The construction sector recorded notable growth in 2021 owing to a rise in investments by the end-user group and ascending government initiative for construction industry revival post-COVID-19. It is predicted that India's construction industry is set to emerge as the third-largest market across the world, with a size of almost USD 1 trillion by 2030.

Demand and Growth

Rise in demand for plastic across the construction industry due to low-cost and excellent physical properties is augmenting market growth of the building & construction plastic. The growing use of recycled plastic across the construction industry due to the increasing practice green building is again anticipated to foster the market growth of the building & construction plastic. All these factors are propelling the market growth of plastics in building & construction.

Market Opportunities

The growing use of plastic in emerging applications such as pipes, tubes & fittings, sewers, door frames & windows, and roofing is projected to bring new market opportunities. Increasing use of polystyrene in construction material as it has a low conductor of heat and helps in retaining heat in infrastructure is again propelling market growth. Moreover, the growing use of polyurethane in furniture &

bedding as they are lightweight, easy to install, and durable which makes it ideal for construction materials is further fueling the market growth.

Market Trends

Increasing use of expanded polystyrene (EPS) plastics in the construction industry is a growing trend. Expanded Polystyrene (EPS) Plastics is a lightweight insulation material that offers resistance to humidity, shock absorption, and resistance to chemicals. They are widely used across the construction of roads, railway lines, bridges, and public buildings. EPS is an ideal material for use as lightweight filler in the road to facilitate land drainage.

Key Takeaways

The global building and construction plastics market was valued at US\$ 57,516.4 Mn market in 2019 and is forecast to reach a value of US\$ 99,436.5 Mn by 2027 at a CAGR of 7.1% between 2020 and 2027.

Pipes and Ducts segment dominated the global building and construction plastics market in 2019, accounting for 34.9% share in terms of value, followed by insulation and door fitting segments, respectively.

The growing trend of renovation of old buildings around the globe is expected to fuel the market growth of the building and construction plastic. Also, growing government investment in the construction industry due to the increasing population, which is driving demand for construction plastic, is propelling market growth. Moreover, increasing adoption of advanced construction materials for speeding up the construction process is further expected to bolster the market growth.

**Plastic vis-à-vis Concrete**

Plastic is considered to be a lot more flexible than concrete in terms of its strength.

In order to test the stability of the "plastic concrete", the students at MIT university mixed cement with a fine powder of the irradiated PET bottles and used it to pour concrete blocks. A compression test showed: The PET-concrete blocks were up to 20 percent more stable than normal cement. Used plastic bottles could make foundations, bridges, walkways and barriers more stable in the future in this way. The addition of 1.5 percent PET powder improves the concrete structure.

Two further advantages: By replacing a part of the cement with plastic, fewer emissions result from the concrete production. At the same time, fewer PET bottles land on the garbage dumps. "The technology helps to make buildings more stable, while at the same time reducing the quantity of waste and CO2 emissions", is the conclusion of a study Michael Short from the Department of Nuclear Science and Engineering.

Using Plastic-waste in Construction

Using plastic waste in the construction industry is an environmental solution to minimize the proportion of landfills used in waste incineration. Presently, coming up with an approach to utilize plastic in construction industry will be of great advantage. The major input of construction industry is concrete.

The scarcity of raw materials used in the manufacturing of concrete is observed over last few years due to the high demand. Hence the use of plastic waste in the concrete as a raw material can solve both problems to an extent. Plastic can be grinded to use as a replacement of fine aggregate or ordinary Portland cement in concrete to promote sustainable development.



Polyvinyl chloride (PVC) and unplasticized PVC (uPVC) have become indispensable materials in the manufacturing of modern doors and windows, offering a multitude of advantages in utility value, production efficiency, cost reduction, lightweight construction, sustainability, and aesthetic appeal for residential and commercial buildings.



Plastics Opening Door of Opportunities in Home Decor

Utility Value

PVC and uPVC doors and windows provide exceptional utility value due to their durability, weather resistance, and thermal insulation properties. These materials are engineered to withstand harsh weather conditions, including extreme temperatures, UV exposure, and moisture, ensuring long-term performance without warping, rotting, or corroding. The inherent insulation properties of uPVC frames contribute to energy efficiency by reducing heat loss in winter and heat gain in summer, enhancing indoor comfort and lowering heating and cooling costs.

Utility Value

PVC and uPVC materials with its characteristics offerings have redefined the door and window industry becoming an ideal choice for modern construction projects seeking to achieve energy efficiency, durability, and architectural enhancement while adhering to sustainable building practices.

The production of PVC and uPVC doors and windows is highly efficient, leveraging automated manufacturing processes and advanced technology. PVC profiles can be extruded into various shapes and sizes with precision, minimizing material waste and optimizing production timelines. Standardized components and modular designs streamline assembly and installation processes, reducing labor costs and improving overall project efficiency.



PVC and uPVC materials with its characteristics offerings have redefined the door and window industry becoming an ideal choice for modern construction projects seeking to achieve energy efficiency, durability, and architectural enhancement while adhering to sustainable building practices.

**Cost Reduction**

PVC and uPVC materials offer significant cost advantages over traditional building materials such as wood or aluminum. The raw materials used in PVC production are readily available and cost-effective, contributing to lower manufacturing expenses. Moreover, the durability and low maintenance requirements of PVC doors and windows result in reduced lifecycle costs, eliminating the need for frequent repairs or replacements associated with other materials.

Lightweight Construction

One of the standout features of PVC and uPVC doors and windows is their lightweight construction. Despite their lightweight nature, these materials exhibit excellent structural strength and stability, supporting larger window spans and expansive door designs without compromising performance or safety. The ease of handling and installation further simplifies logistics and reduces labor requirements during construction.



Sustainability

PVC and uPVC contribute to sustainability through various initiatives. These materials are fully recyclable, allowing for the reuse of production waste and end-of-life products in new applications. Recycling programs help minimize environmental impact and conserve natural resources. Additionally, the energy-efficient properties of uPVC frames contribute to sustainable building practices by reducing energy consumption and greenhouse gas emissions associated with heating and cooling homes. As advancements in technology continue to drive innovation, PVC and uPVC profiles are poised to remain at the forefront of the building materials industry, meeting the evolving demands of homeowners and builders worldwide.

Aesthetic Appeal

Modern PVC and uPVC doors and windows offer versatile design options to enhance the aesthetic appeal of residential and commercial properties. Manufacturers produce these profiles in a wide range of colors, finishes, and textures, allowing homeowners and architects to customize their designs to complement architectural styles and interior decor themes. Woodgrain finishes and smooth surfaces are available to replicate the look of traditional materials like wood, while maintaining the durability and low maintenance benefits of PVC.

As advancements in technology continue to drive innovation, PVC and uPVC profiles are poised to remain at the forefront of the building materials industry, meeting the evolving demands of homeowners and builders worldwide.



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Plastics Provides Solutions in Piping and Effective Drainage System

Plastic pipes play a key role in construction and a variety of plastic be it HDPE, PP, PVC Foam Core Pipes, PVC UGD Pipes or HDPE Double Wall Corrugated Pipes are used due to the benefits they provide. Plastic pipes are resistant to corrosion, wear and tear, and chemical exposure. They are also flexible, so they can be bent into place and pulled through existing pipes.

HDPE pipes are used in many construction applications, including water mains, gas mains, sewer mains, drainage pipes, and more. They are also used in mining, for slurry and process water transport, and to protect underground cables. HDPE pipes are often used as a replacement for concrete or steel pipelines.

PP Pipes are used for Sewerage in building Construction especially when high rise buildings need proper pipe with good flow while PVC pipes are used in telecom and cable ducting pipes, water transportation and alike.



Chlorinated polyvinyl chloride (CPVC) and unplasticized polyvinyl chloride (uPVC) have become integral to meeting the demands of modern urban infrastructure, particularly in the construction of efficient piping and drainage systems. Their versatile properties make them ideal choices for applications requiring ease of hot and cold water transmission, heat resistance, cost-effectiveness and operational convenience.



Ease of Hot and Cold Water Transmission

CPVC and uPVC pipes excel in transmitting both hot and cold water efficiently. CPVC, in particular, is engineered to withstand higher temperatures compared to standard PVC, making it suitable for hot water distribution systems in residential, commercial and industrial buildings. These materials maintain consistent flow rates and minimize heat loss, ensuring reliable performance in delivering water at desired temperatures throughout the year.

Heat Resistance

The heat resistance of CPVC and uPVC pipes is a key feature that enhances their durability and reliability in urban infrastructure. CPVC pipes can withstand temperatures up to 200°F (93°C), making them suitable for hot water supply lines, industrial processes, and applications where high temperatures are prevalent. This resilience reduces the risk of deformation or failure under thermal stress, ensuring long-term performance and operational safety.



**Cost Reduction**

One of the primary advantages of CPVC and uPVC materials is their cost-effectiveness throughout their lifecycle. These materials are less expensive than traditional piping materials like copper or steel, both in terms of initial installation costs and ongoing maintenance. Their lightweight nature facilitates easier transportation, handling, and installation, reducing labor expenses and project timelines. Moreover, the corrosion resistance of CPVC and uPVC pipes minimizes the need for costly repairs or replacements, further lowering lifecycle costs and enhancing overall economic

viability.

Simplifies Logistics

CPVC and uPVC pipes are lightweight compared to metal alternatives, which simplifies logistics and reduces the need for heavy lifting equipment during installation. This characteristic not only enhances construction efficiency but also minimizes disruption to existing infrastructure in densely populated urban areas. Lightweight pipes contribute to improved transportation and storage logistics, optimizing project management and reducing environmental impact. 

Convenience

CPVC and uPVC pipes offer operational convenience through their ease of installation, maintenance, and performance reliability. Their smooth interior surfaces resist scaling and corrosion, ensuring minimal friction loss and consistent flow rates. This reliability is crucial for maintaining uninterrupted water supply and efficient drainage in urban environments where infrastructure downtime can have significant economic and social implications.



Recycled Plastic seems to be a ‘Goldmine’ for Future Building Materials

“

If the nearly 400 million tonnes of plastic waste produced annually around the world, most ends up in landfills. This massive amount of plastic waste represents a gold mine for the construction industry.

”

A 2022 report from Strategy&, a consulting division of international services firm PwC, says the global building materials sector contributed about 10 per cent of all greenhouse gas (GHG) emissions in 2019. They say increasing the use of recycled plastic in building materials could have a large environmental benefit.

“

Recycled plastics can help reduce emissions in two ways. First, they can support enhanced recycling and reuse of existing materials — for example, plastic waste can be used as an ingredient to make ‘green’ concrete. Second, recycled plastics can be a substitute for high-emissions materials such as brick or steel.”

”



Plastic has potential beyond being an additive for concrete and a substitute material for bricks.

Experts in the industry say there are researchers who have invented a “structural plastic lumber made from recycled plastics like milk containers and coffee cups.” The material is reportedly “lighter than steel, longer-lasting than lumber, and strong enough to support 120-tonne locomotives.”

The report says acceptance of plastics as a building material has taken time, largely due to a number of misconceptions that include toxicity in the event of fire. However, PwC says such concerns are countered by the fact that fire fatalities in Western Europe have declined substantially over the past 20 years, whereas the use of plastic in construction has doubled.

Europe is a world leader in its use of recycled plastics, says PwC. “Just under half of post-consumer recycled plastic in Europe is now used in building and construction, including bricks, curbstones and fences, whereas about one-fourth is reused in packaging.”

The use of plastic in construction materials has several important advantages, the report continues. “Plastics are easier to transport, handle and install than other materials because of their light weight. They preserve their required mechanical properties for use in construction applications. Building materials made of recycled plastics also have a long shelf life and are easier to recycle than mixed plastics and many other materials.”



In fact, plastic lumber has been used world over in several Army applications, including bridges and docks. According to reports from a Construction management software firm, more than 1.5 million plastic lumber railway ties have been used across the United States, diverting about 300 million pounds of plastic waste otherwise bound for landfills.

If cement production were a country, it would be the world’s third-largest emitter as research has shown that to produce 1 kg of cement, 1 kg of GHG is released into the atmosphere. In addition to cement, construction materials such as steel, bricks, and building fixtures (like windows and doors) are proven to cause detrimental effects on the environment and global climate.



However, there is hope, a slew of Indian startups working on sustainable construction has resolved to make a change in the construction industry.

These startups have created innovative products that recycle many forms of waste to make building materials be it environment-friendly bricks and building materials such as paver blocks, paver tiles, kerbs, manhole covers, roofing and flooring tiles etc. The manufactured products have all the quality and specification as per the Indian standards, that are efficient, affordable, and environment-friendly.

The companies also help to combat plastic pollution, water pollution, land pollution and air pollution and work towards building a vibrant circular economy for the country. ■



Using Plastics waste in Construction of Roads

The effective use of plastic in road construction in India began in 2015 when the Union Government instructed the use of waste plastic with hot mixes. Plastic roads are a prime example of how humans can make treasure from trash.

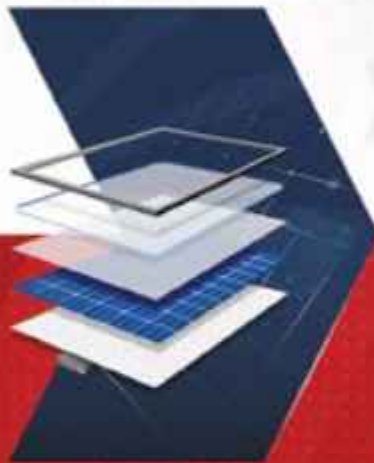
In order to encourage the use of plastic waste, Ministry of Road Transport & Highways decided that bituminous mix with plastic waste shall be the default mode for periodic renewal of highways falling within the 50 km periphery of an urban area, having population of more than 500 thousands.

Rural road programme (PMGSY) has completed more than 13,000 km of plastic roads. The performance of these roads has been rated as excellent.

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Plastics Flooring Blends Modern Design with Durability and Sustainability

Flooring materials play a crucial role in defining spaces in many kinds of spaces. Amidst this diversity, plastics have emerged as a compelling choice, offering an array of advantages that span aesthetics, resilience, and functionality.

Plastics find application in various construction materials, including doors, windows, roofing materials and insulation. UPVC (unplasticized polyvinyl chloride) and other plastic composites offer energy-efficient, durable and cost-effective alternatives in building construction.

With the ever increasing demand for plastic flooring, there are ideally six types of plastics used in flooring. Key plastics include ABS for interlocking tiles, polyethylene for flexibility and moisture resistance, PVC for versatility, PP for stain resistance and modularity, glass-filled PP for strength, and polycarbonate for unique visual effects.

Acrylonitrile Butadiene Styrene

Acrylonitrile Butadiene Styrene (ABS), a thermoplastic polymer, is renowned for its durability and versatility, making it a valuable choice in the flooring industry. This plastic is commonly used for interlocking floor tiles due to its excellent impact resistance and dimensional stability.

ABS tiles, often found in residential and commercial spaces, are designed for easy installation and maintenance. They snap together seamlessly, forming a robust and uniform surface. ABS flooring is highly resistant to moisture, chemicals, and abrasion, ensuring longevity even in high-traffic areas. Additionally, it's available in various colors and finishes, allowing for customizable and aesthetically pleasing flooring solutions that cater to diverse design preferences. Its combination of strength and adaptability makes ABS an attractive option for flooring applications.



Polyethylene

Polyethylene, a widely used plastic, has made its mark in the flooring industry for its strength and adaptability. This thermoplastic polymer comes in various forms, including high-density (HDPE) and low-density (LDPE) variations.

HDPE offers exceptional durability, often employed in heavy-duty applications like industrial settings and sports facilities. LDPE, on the other hand, prioritizes flexibility and comfort, making it suitable for underlayments or areas requiring cushioning. With its resistance to moisture and chemicals, polyethylene flooring is a reliable choice for environments where resilience and versatility are paramount.

Polyvinyl Chloride (PVC)

Polyvinyl Chloride (PVC) stands out as a versatile and durable plastic used extensively in flooring applications. Known for its cost-effectiveness and wide-ranging capabilities, PVC flooring comes in various forms, including vinyl tiles, sheets, and luxury vinyl planks (LVP).

PVC tiles offer easy installation and maintenance, making them suitable for both residential and commercial spaces. PVC sheets provide a seamless look and are commonly used in healthcare and educational settings for

their hygienic properties. LVP, designed to resemble natural materials like wood or stone, delivers a high-end look without the associated maintenance.

The water-resistant and resilient nature of PVC flooring, along with its customization possibilities and design options, make it a preferred choice for a diverse range of environments.

Polypropylene

Polypropylene (PP) is a thermoplastic polymer widely recognized for its resilience and eco-friendly properties, making it a suitable option for flooring solutions. PP carpet tiles are a common application, known for their durability and stain resistance. These tiles are modular, allowing for easy replacement of damaged sections without the need to replace the entire floor.

PP flooring offers excellent colorfastness and resistance to fading, making it ideal for spaces with high foot traffic. Additionally, its low moisture absorption and resistance to mold and mildew contribute to its longevity. The sustainability aspect of PP, stemming from its recyclability and low environmental impact, aligns with modern demands for eco-conscious materials in flooring.

Polypropylene + Glass Filled

Polypropylene, when reinforced with glass fibers, becomes an exceptionally strong and rigid material, ideal for certain flooring applications. Glass-filled polypropylene boasts impressive mechanical properties, including enhanced tensile strength, stiffness, and dimensional stability.



This composite material is well-suited for raised access flooring systems used in data centers, office spaces, and commercial buildings. The combination of polypropylene's chemical resistance and the added strength from glass fibers creates a durable and robust flooring solution that can withstand heavy loads and constant foot traffic. Moreover, its resistance to moisture, chemicals, and corrosion makes it a reliable choice for environments where these factors are prevalent. Glass-filled polypropylene flooring offers longevity and stability, contributing to long-term cost-effectiveness in various industrial and commercial settings.

Polycarbonate

Polycarbonate, renowned for its remarkable impact resistance and optical clarity, is a versatile thermoplastic material employed

across diverse industries. Though not typically chosen as a primary flooring surface, its unique properties find application in specific and innovative flooring-related scenarios.

Due to its exceptional strength and transparency, polycarbonate can be integrated into certain flooring designs to create transparent or translucent floor panels. These panels offer intriguing visual effects, particularly in spaces where light diffusion or an unobstructed view is desired. Transparent floors, for instance, are used in architectural settings to create striking visual connections between different levels or to bring natural light to lower spaces.

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Injection Moulding for Flooring Products

The exploration into the array of plastic options used in flooring underscores their capacity to blend functionality, aesthetics, and sustainability. From homes and commercial spaces to industrial environments, the many types of plastic used for flooring offer tailored benefits that cater to specific needs.

In the flourishing flooring industry, the demand for innovative solutions continues to rise. Injection moulded technology has emerged as a key player in meeting these demands by offering unparalleled durability, bespoke customisation, and adaptive versatility. This dynamic fusion is propelling flooring solutions to unprecedented levels of excellence.



Injection molding is used to create tile backing and substrates, providing stability and durability to tiles. This method ensures precise shaping and customization, enhancing functionality and fit.

Also, for accessories like baseboards, thresholds and transition strips, plastic injection molding crafts detailed components that align with diverse flooring designs.

In cable management, plastic mold injection produces channels, covers, and clips for organizing and hiding wires in commercial and residential spaces. This maintains tidiness, safety and aesthetics.

Benefits of Injection Molding for Flooring Products

i) Enhanced Durability and Longevity : Injection moulding technology reinforces flooring products with exceptional durability, ensuring they withstand heavy usage and maintain longevity over time.

ii) Tailored Customisation and Design Flexibility : Leveraging injection moulding allows flooring products to be customised with precision, offering a wide range of design possibilities, from vibrant colours to intricate patterns, tailored to meet specific aesthetic preferences and market demands.

iii) Versatile Adaptability to Varied Environments : Injection moulded flooring products adapt effortlessly to diverse environments, from industrial settings to commercial spaces, providing reliable performance across different conditions, including temperature fluctuations and exposure to chemicals.

iv) Cost-Effectiveness and Operational Efficiency : Opting for injection moulding for flooring products ensures cost-effectiveness and operational efficiency throughout the manufacturing process. Streamlined production processes and minimal maintenance requirements contribute to long-term savings and enhanced profitability for flooring companies.

In the dynamic world of flooring solutions, injection moulding emerges as a cornerstone of innovation. With its unparalleled durability, customisation capabilities and adaptability, injection moulding technology redefines the boundaries of what's achievable in flooring products.



The Planet Has A Plastic Problem

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While plastics have been one of the most important inventions by humankind, it is no secret that the planet has a huge plastic problem. There is a need for improved waste management systems, better product design that takes into account the linearity of disposable packaging, policies to enable a seamless transition towards circularity, and informed consumption patterns.

”

Rahul Nainani,
CEO & Co-Founder, ReCircle

Better Product Design

While we all look at plastic as waste once we are done with the product, we need to start looking at it at the start of its life; i.e. at the creation phase when we start designing a product. We need to rethink how it can be reusable material or in a refill system and look at business models there, or even refurbishing.



Innovative Plastic Production and Recycling

How do we make our packaging more efficient and recyclable? On packaging technology, how can we make it monolayer so that it can be recovered/recycled more easily?

There is advancement taking place in recycling technology so that once it is collected it can be recycled in high end recycled granules which can be used back as raw materials in the supply chain of the brands that work with this.

Further, there is technology being used to track and trace waste which brings in full traceability and accountability to brand owners who want to go plastic-neutral while also using recycled plastic in their supply chain.

Policies and Frameworks

While the current policy landscape is evolving at breakneck speed, we need more policies in place that strike the

right balance between social justice, environmental preservation, and economic growth.

The present need is for tax reforms and lower GST rates for recycled plastic products. Higher taxes on the plastic industry will create inflationary pressure on the economy.

Furthermore, we need subsidies on machinery as it will help MSMEs that wish to upgrade their technology. We need to continue harnessing the power of technology to deliver innovative services within the plastics industry for the benefit of our connected communities and economy.

For long-lasting growth of the industry, we need infrastructure support, digitization in the plastics manufacturing industry and businesses to comply with the governments' existing EPR mandates as per Plastic Waste Compliance Rules 2016. ■



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Medical Polymers Revolutionizing Pain Management in Diverse Medical Practices



D. L. Pandya

“Innovations in medical plastics and associated applications are rapidly advancing in exciting ways. Concurrently, the medical device and healthcare industries face several new and evolving challenges related to materials, regulatory requirements, product design, and materials characterization and validation in order to ensure better outcomes for patients while being mindful of plastic wastes in the environment and focusing efforts on sustainability.”

Eliminating Pain using Medical Polymers

Pain management is an extremely important topic both medically and socio-economically. Effective control of pain management has the potential to significantly decrease the need for prescription opioids following a surgical procedure. While extended release products for pain management are available commercially, the implementation of a device that safely and reliably provides extended analgesia and is sufficiently flexible to facilitate a diverse array of release profiles would serve to advance patient comfort, quality of care. With the advancements in the healthcare industry, plastic has proved to be one of the few versatile materials that has been able to adapt along with the dynamic nature of the industry.



While the application of plastics in medical devices remains unchallenged, I am enlisting some of the most common ones for general reference.

1. Robotic Surgery : Robotic surgical instruments and devices incorporate precision plastic components for lightweight and precise control, enable minimally invasive procedures, reducing patient trauma and promoting quicker recovery.

2. Intravenous (IV) Catheters : These catheters, made of plastic materials, are used to deliver fluids, medications, or anesthesia directly into the bloodstream, reducing pain associated with repeated needle insertions.

3. Vascular Stents : Stents made from biocompatible plastics are used to open narrowed blood vessels, reducing pain caused by restricted blood flow and improving overall blood circulation.

4. Insulin Pumps : These devices, incorporating plastic components for tubing, reservoirs, and housing, deliver a continuous and customizable supply of insulin, providing diabetic patients with precise control over their blood sugar levels and minimizing the need for multiple injections.

5. Wound Closure Strips : These adhesive strips, often made of flexible plastic materials, offer a less painful alternative to sutures for closing small wounds, promoting faster healing and reduced discomfort.

6. Intrathecal Drug Delivery Systems : Using plastic components, these systems deliver pain-relieving medications directly into the spinal fluid, targeting pain receptors and minimizing systemic side effects.

7. Intraocular Lenses : These lenses, often made of plastic materials, replace the eye's natural lens during cataract surgery, improving vision and reducing postoperative discomfort.

8. Pain Relief Cream Applicators : Devices with plastic applicators are used to apply pain relief creams or gels topically, ensuring precise and mess-free application for localized pain relief.

9. Nerve Block Catheters : These catheters, made of flexible plastic tubes, deliver local anesthetics directly to nerves, providing prolonged pain relief after surgery or for chronic pain conditions.

10. Pain Relief Orthoses : Orthopedic braces and supports made of plastics provide stability and support to injured or painful joints, reducing discomfort and aiding in rehabilitation.

The above is just a gist but the fact remains Plastics have significantly impacted all industry sectors, but in healthcare, it has made substantial improvements. Plastics have made healthcare easier, safer and more cost effective today.



Union Finance Minister Nirmala Sitharaman presented the Union Budget for 2024-25 in parliament on July 23, 2024. While presenting her seventh consecutive Union Budget, Sitharaman thanked the people for awarding Prime Minister Narendra Modi a historic third term.

FM Sitharaman Addresses Trade Facilitation, Raises Customs Duty on PVC flex films to 25%

“

The budget 2024 envisaged sustained efforts on 9 priorities for generating ample opportunities for all. It includes productivity and resilience in agriculture, employment and skilling, inclusive human resource development and social justice, manufacturing services, urban development, energy security, infrastructure, innovation, research development and next-generation reforms.

”

Simplifying the tax regime for corporate industries, Sitharaman proposed new tax structures for charities, foreign shipping companies and rationalisation of capital gains in her 2024 Budget speech.

She also reduced corporate tax on foreign companies from 40 to 35%.

In a press briefing after the announcement of Union Budget 2024, Sitharaman said that the average taxation has come down for asset classes which encourages investment in the market. She said that an attempt has been made to widen the tax net and it has to be widened for both direct and indirect taxes. It was also clarified that the increased Securities Transaction Tax (STT) on F&O will be effective from October 1, 2024.

Union Budget 2024: Tariff changes in chemicals, petrochemicals and plastics (%)		
Particulars	From	To
Polyvinyl chloride (PVC) flex films (also known as PVC flex banners or PVC flex sheets) (The currently applicable BCD on all other goods falling under heading 3920 and 3921 shall be maintained by suitable amendment in the relevant notification(s))	10	25
All goods other than Poly vinyl chloride (PVC) flex films/flex banner of HS Code 3920, (other than 3920 99 99) or 3921	25 (w.e.f. 24.07.2024)	10
All goods other than Poly vinyl chloride (PVC) flex films/flex banner of HS Code 3920 99 99	25 (w.e.f. 24.07.2024)	15
Laboratory chemicals (Heading 9802 covers all chemicals, organic or inorganic, whether or not chemically defined, imported in packings not exceeding 500 gms or 500 millilitres and which can be identified with reference to the purity, markings or other features to show them to be meant for use solely as laboratory chemicals)	10	150
Ammonium Nitrate, whether or not in aqueous solution	7.5	10
Methylene Diphenyl Di-isocyanate (MDI) for use in the manufacture of Spandex Yarn	7.5	5 Subject to IGCR conditions
Naphtha for manufacture of Fertilisers (scope of exemption is being reduced only to Naphtha)	-	Conditional
Super absorbent polymer for manufacture of adult diapers and specified goods	-	Conditional
Capacitor grades polypropylene granules for	-	Conditional
Manufacture of Capacitor grade plastic		
Anthraquinone or 2-Ethyl Anthraquinone for use in manufacture of Hydrogen peroxide	-	Conditional
Specified material for manufacture of EVA (Ethylene Vinyl Acetate) sheets or backsheet, which are used in the manufacture of solar photovoltaic cells or modules (Scope of materials which can be imported is being increased)	-	Conditional
Polytetramethylene ether glycol, (PT MEG) for use in manufacture of spandex yarn	-	Conditional
Ethylene- propylene- non-conjugated diene rubber (EPDM) for manufacture of insulated wire and cables	-	Conditional

Sources: Union Budget 2024

Highlights Of Fiscal Budget

- 1) Five schemes announced to focus on 4.1 crore youth over 5 years with outlay of INR 2 lakh crore.
- 2) Internship scheme for one crore youth in top companies over five years.
- 3) Employment-linked incentives, including one month's wage support for first-time employees.
- 4) For MSMEs: Credit guarantee scheme and term loans for machinery purchase, technology support package for MSME's.
- 5) SIDBI to open 24 new branches to serve MSME clusters.
- 6) Mudra loan limit increased from INR 10 lakh to INR 20 lakh.
- 7) Financial support for higher education loans up to INR 10 lakhs.
- 8) Provision for rural development at INR 2.66 lakh crore.
- 9) Special financial support of INR 15,000 crore for Andhra Pradesh.
- 10) New airports, medical facilities, and sports infrastructure for Bihar.
- 11) Inflation moving towards 4% target.
- 12) Over INR 3 lakh crore.

BCD's affecting Plastic Industry

While the budget seems to have addressed all the sectors when it comes to Plastic Industry the Finance Minister has raised the basic customs duty on polyvinyl chloride (PVC) flex films to 25 percent now from 10 percent earlier.

“ Sitharaman, said, “PVC flex films, also known as PVC flex banners or PVC flex sheets are non-biodegradable and hazardous for environment and health. To curb their imports, I propose to raise the BCD on them from 10 percent to 25 percent.” **”**

The move aims to reduce its imports in India and control its usage in order to prevent irresponsible dumping. The customs duty on several other products has been reduced to 10-15 percent.

Last year, Finance Minister increased tariffs on various basic petrochemical raw materials such as naphtha, styrene, and vinyl chloride monomer (VCM). Memorandum explaining provisions in the Union Budget speech simplifies the tax proposals which says that the tariff on naphtha has been raised to 2.5 percent in the Budget 2023 from 1 percent earlier. Similarly, tariff on both petrochemical raw materials i.e. styrene and VCM has been raised to 2.5 percent from 2 percent earlier.

According to experts in the industry, India's packaging industry is growing at a healthy pace and is contributing significantly through the export route to the exchequer. There is a need to enhance skills for youth, innovation, and R&D support for the sector. The focus in the budget on creating job opportunities in the manufacturing sector and this coupled with support to the employers will propel the industry to new heights. Further, the introduction of credit guarantee scheme for MSMEs and facilitating term loans to MSMEs for purchase of equipment without collateral or guarantee will go a long way to enhance access to capital in the sector.



Centre Urges States, UTs to use Plastic Waste in Urban Road Infrastructure

To address the challenge and facilitate Plastic waste management efficiently, the central government has asked states and union territories (UTs) to use plastic waste in city road construction. The states and UTs are advised to use plastic waste 8 percent of the weight of bitumen for road construction of cities, including the internal roads of housing colonies and offices.

Plastic-infused roads not only contribute to environmental sustainability but are also more durable and cost-effective. Since both plastic and bitumen are petroleum-based, they bond effectively, enhancing the road's load-bearing capacity and longevity while providing better resistance to damage from heavy rains.

In 2013, the Indian Road Congress had released guidelines for the use of plastic waste in road construction. Furthermore in 2015, the Ministry of Road Transport and Highways (MoRTH) mandated states and UTs to utilize plastic waste with bitumen in constructing the roads within a 50km periphery of urban areas with a population of 5 lakh and above.

Against this backdrop, the Housing and Urban Affairs Ministry through a written communication, has recently asked the states and UTs to take steps to implement the Indian Road Congress guidelines.

The center has also asked the states and UTs to take up the issue with their key road construction departments - Rural Development Department, PWD and Panchayati Raj.

The Housing and Urban Affairs Ministry wrote to states and UTs on July 8, asking them to take steps to implement the Indian Road Congress guidelines.

They were asked to use "plastic waste in bituminous roads wherever they may be constructed to give a fillip to proper utilisation of non-recyclable plastic waste with suitable changes in bid documents.

The states and UTs were also asked to take up the issue with their major road construction departments, including PWD, Rural Development Department and Panchayati Raj.

Three central government secretaries – Vini Mahajan (Department of Drinking Water and Sanitation under Ministry of Jal Shakti, Anurag Jain (MoRTH and MoHUA) and Shailesh Kumar Singh (Ministry of Rural Development), had on June 28 written to all chief secretaries to encourage use of plastic waste. They said that the required changes should be made to the Detailed Project Report (DPR), tender and Engineering Procurement and Construction (EPC) documents prepared for road projects. 

According to
CPCB's figures,

4.12

tonnes of plastic waste
was generated in 2020-21.

Around

60%

of that is recycled. For each kilometre of road with 3.75 m width, using 1 tonnes of plastic waste mixed with bitumen can save Rs 6.3 lakh, according to a 2019 MoHUA plastic waste management document.

Centre to provide one-time Financial Support for Waste Recycling Start Ups

The government will provide a one-time financial support for youth-led waste recycling start-ups especially for abandoned and discarded fishing nets and other plastic waste that litter coastal areas.

Unveiling the guidelines for one-time financial support for establishing recycling plants on the occasion of the International Coastal Clean-up Day, Union Environment Minister Bhupender Yadav said, "The government will provide a one-time financial support for youth-led recycling start-ups for abandoned and discarded fishing nets and other plastic waste that litter coastal areas."

These guidelines have been developed to provide one-time financial support to project proponents towards capital costs of setting up recycling plant & machinery for Abandoned, Lost & Discarded Fishing Gears (ALDFGs) and other plastic waste with high littering potential in coastal areas. The focus is on establishing fishing gears/net and marine plastic waste recycling facilities in the twelve blue flag certified beaches in the country. According to reports, New plastic waste and fishing gear/net recycling units that possess a valid Consent to Establish (CTE) and located beyond Coastal Regulation Zone (CRZ) and permissible under local by-laws and regulations shall be eligible for assistance, the guidelines state.

Preference shall be given to new plastic recycling units proposed to be located optimally closer to beach, harbour, fishing hotspots, high tourist footfall area and any other strategically important area where no restriction is imposed by any government institution/body for setting up the unit. Also, priority shall be given to registered fishermen societies interested in setting up



fishing gear/net recycling units.

The one-time financial assistance will be provided from Central Pollution Control Board's Extended Producer Responsibility (EPR) funds including Environmental Compensation as well as through Environmental Protection Fund created under the Environmental (Protection) Act, 1986 for establishing a total of 25 units near blue flag beaches (13 nylon fishing gear/net recycling units and 12 plastic waste recycling units).

It will cover the plant and machinery costs for the washing line, grinder/shredder/crusher, drying equipment, agglomerator, extruder and pollution control devices (including the effluent treatment plant). The cost of land, as well as civil and electrical works, operation and maintenance expenses, and any other recurring costs, shall be borne by the proponent. Financial support will be provided as a one-time grant upto 40% of the capital cost of the plastic waste recycling plant and machinery, whichever is lower, subject to a maximum of ₹38 lakh per proposal.

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ReCircle raises Bridge Round led by Venture Catalysts and Mumbai Angels



ReCircle, one of the leading clean-tech startup, has secured a bridge funding round led by Venture Catalysts, Mumbai Angels (a wholly owned subsidiary of 360 ONE WAM Limited formerly known as IIFL Wealth Management Limited), and high-net-worth individuals (HNIs).



With this, the company opens up a new revenue channel, helping it achieve its targeted revenue of INR 100 Cr in the next financial year (2025-26). The funding will support ReCircle's mission to transition to a circular system for plastic waste enabling it to provide high-quality, traceable recycled plastic content to companies using plastic packaging.

Rahul Nainani, CEO & Co-Founder, ReCircle said, "We are leveraging our pan-India network of partners, built over the last eight years, to forward integrate into the plastic waste supply chain. This will empower us to provide traceability from the source of collection to the final product packaging, enabling businesses to incorporate ethically sourced, traceable materials in their packaging."

Speaking about the investment, Dr. Apoorva Ranjan Sharma, Co-founder and Managing Director of Venture Catalysts++ said, "ReCircle's innovative approach to plastic waste management perfectly aligns with our vision of supporting transformative start-ups."

The Mumbai based start-up has diverted over 169,000 MT (equivalent to the weight of 28,166 elephants) of waste from landfills and water bodies across 270 cities & towns in India with the help of 45+ processing partners who have a pan-India network of 400 partners collecting materials including plastic, paper, cardboard, metal, glass, e-waste and textile waste.

With growing compliance for recycled plastics and mandatory Extended Producer Responsibility (EPR) policies, ReCircle is committed to work towards ethical circularity and plans to forward integrate into the plastic waste supply chain.





Gravitas step down subsidiary, Gravita Netherlands BV has signed a Memorandum of Understanding (MoU) to acquire a waste tyre recycling plant in Romania with an approximate capacity of 17,000 million tonnes per annum. The company acquired this facility from a company in Romania, making it the company's first recycling facility in Europe.

Gravita India acquires 'Recycling Facility' in Europe

The company will do this acquisition by forming a separate SPV in Romania, wherein Gravita Netherlands BV will hold 80% equity with management control in the SPV, whereas the remaining equity stake will be held by other partners based in Romania.

The total investment involved in this transaction will be around Rs 40 crore and the company will invest around Rs 32 crore through its contribution. The transaction is subject to in-depth financial, legal and environmental due diligence.

GNBV plans to expand its recycling business throughout Europe, capitalising on new market opportunities and forming strategic partnerships to fuel growth. This acquisition aims to enhance its presence, grow its customer base, and improve competitiveness in the European market.

The company already operates rubber recycling facilities in Senegal, Togo, Ghana and Tanzania, aligning with its broader vision of diversification and expanding its recycling business across multiple geographies.

Gravita leads the plastic recycling revolution with cutting-edge technology, creating premium recycled granules polypropylene, polycarbonate, HDPE, and ABS — and offer custom colour matching. Gravita India Ltd., has become a world-renowned multinational company providing turnkey solutions for Lead Battery Recycling and non-ferrous metals setting the industry standard, and having customers in over 38 countries across Europe, America, Asia and Africa, has further earned the reputation of being the world's leading provider. 

Exosome secures Funding of Rs 10 Crores from Colossa Ventures



Exosome, a Mumbai based clean tech start up focussing on sustainable and cost-effective solutions for capturing air emissions and treating wastewater has secured Rs 10 crore in a pre-Series A funding round led by women-focused venture capital firm Colossa Ventures. The investment round also saw contributions from 3i Partners and existing backers Rahul Rathi, Bhukhanvala Holdings, Excel Industries, and Spectrum Impact.



Exosome stated that the new capital will be utilised to expand its operations, broaden its market presence, and provide effective environmental solutions to clients in India and specific international markets.

The start-up Exosome it has catered to more than 25 clients and implemented over 1,000 filters.

Established in 2020 by Prerna Goradia, Exosome designs sustainable and cost-effective solutions for capturing air emissions and treating wastewater. Its distinctive molecular filters feature a patented regenerative process and advanced filter materials that are customisable, durable and reusable.

These filters isolate pollutants and release cleaner air and water, allowing businesses to adhere to standards such as Chemical Oxygen Demand (COD) regulations. The company headquartered in Mumbai, has introduced Pur-safe, an advanced molecular air filtration media for mitigating air pollution, and PurCODE, a next-generation regenerable media for treating wastewater effluents.

These solutions are economically viable and readily deployable across various industries, including chemicals, pharmaceuticals, paint, oil, refineries, cement, thermal power, textiles, and leather.



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Braskem the largest polyolefins producer in the Americas, as well as a market leader and pioneer producer of biopolymers on an industrial scale, inaugurated its Renewable Innovation Center located in Lexington, Massachusetts.

Braskem opens Renewable Innovation Center in Massachusetts

This innovation center is the latest expansion of Braskem's global Innovation & Technology footprint. The new 35,000-square-foot innovation center will accelerate innovation in renewable chemicals and materials. Capabilities at the new center will expand Braskem's competencies in biotechnology, catalysis and process engineering.

A particular focus will be given to early-stage science and engineering related to the conversion of biomass-based feedstocks, including sugars, cellulose, plant oils and lignin, to sustainable chemicals and materials. This will enhance Braskem's resources focused on the discovery of technologies that will drive new growth-oriented offerings centered around combating climate change.

Mark Nikolich, CEO of Braskem America, said, "This is a great moment for Braskem and the bio-based industry as we continue to lead the change to a sustainable future. Braskem has a

strong ambition to be a key player in carbon capturing through the production of materials with renewable raw materials. This innovation center even better positions Braskem to forge solutions that meet the needs of today and the future."

The new center is strategically based in Greater Boston's world-class biotechnology and innovation ecosystem, located within a one-hour drive of more than 60 universities and colleges.

Antonio Queiroz, Vice President of Innovation, Technology, and Sustainable Development at Braskem stated, "We are excited for the official opening of our Renewable Innovation Center, which expands Braskem's global I&T footprint to seven centers dedicated to research and development. The launch of Braskem's Renewable Innovation Center will foster the development of new sustainable solutions for chemicals and plastics." 

Unilever launches new initiative CIRCLE to Boost Packaging Circularity



Unilever has launched its new public-private collaboration, which focuses on scaling packaging circularity and reducing plastic waste. Initially focusing on India, Indonesia, Vietnam, and the Philippines, CIRCLE plans to extend its reach by attracting new partners and additional investment.

Co-founded by Unilever, USAID, and EY, the The CIRCLE Alliance initiative was introduced in June this year. The initiative has committed \$21m to support small businesses and entrepreneurs in the plastics value chain.

The alliance aims to drive solutions for reducing plastic use, managing waste and fostering circular economies, with a particular emphasis on empowering women in the informal waste sector in the global south. Its goal is to support women's economic empowerment, improve livelihoods and protect the environment by accelerating the development of circular economies.

In the official release Unilever chief sustainability officer Rebecca Marmot said: "CIRCLE's collaborative model of enterprise acceleration – delivered through a mix of grant funding and bespoke business support – will help scale both new and existing solutions for packaging circularity, whether that's driving collection and recycling, or reuse-refill models.

"Crucially, it will support many small to medium-sized enterprises (SMEs) and entrepreneurs that offer impactful market-based solutions but are currently too small to work at the scale we need."

The company is doubling down on key issues such as reducing our use of virgin plastic and developing solutions for hard-to-recycle flexible plastic packaging materials, including sachets.



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- Engineering Compound, PC/ABS/Nylon
- Engineering Masterbatch, PC/ABS/ PBT/Nylon

Takazuri and BASF collaborate to support Climate Resilient Construction



Takazuri and BASF have collaborated to create smart building solutions that are built to last in Eastern Africa. With a focus on building climate resilience with sustainable products, these solutions incorporate Climatile™ technology from Takazuri, which utilizes locally collected and converted post-consumer materials. Furthermore, additive packages from BASF have been specifically tailored to suit the unique weather conditions of the region.

This collaboration aims to provide long-term, environmentally friendly solutions that promote economic development in Africa and make a positive impact on both the construction industry and the local communities with a potential to scale to other regions.

Maria Schlesinger, Co-Founder and CEO, Takazuri said, "Sustainability is at the core of our business. Our commitment is reflected in our products, which are designed for high performance and multi-functionality while utilizing locally collected and converted waste from urban settings, and soon from ocean plastics collected off the Kenyan coast."

Takazuri's motivation is to provide an affordable climate resilience solution by utilizing local resources and establishing

partnerships in various sectors including housing, commercial, healthcare, education and humanitarian relief.

Climatile is a roofing and cladding solution that acts as a cool roof/wall to improve indoor temperatures with enhanced insulation and improved solar reflectance and emittance. It also provides a safe rainwater-harvesting surface without corrosion. Designed to work as a system, the Climatile is coupled with a smart clipping mechanism, that allows for the integration of functional accessories to its surface such as ultra-light frameless solar panels and biophilic components.

In this way, the Climatile offers an "upgradable" solution, thereby equipping buildings to provide the most essential resources for climate resilience. 

Australian Government Allocates A\$ 20m to New Plastic Recycling Centre



The Australian national government has invested A\$20m (\$13.48m) to support the development of Recycling Plastics Australia's new domestic soft plastics recycling facility in Kilburn. The centre is expected to divert 14,000 tonnes (t) of soft plastics from South Australian landfills annually. It will process materials such as shopping bags, crisp packets, and food wrappers, turning them into feedstock for use in new packaging.

This initiative is set to improve Australia's recycling supply chain capabilities to return soft plastic waste back into packaging.

Recycling Plastics Australia chair Peter Gregg said: "Recycling Plastics Australia has a proud history leading the circular economy by recycling plastics that are difficult to process. "We are grateful that the Australian and South Australian Governments have supported this [A]\$40-million dollar project that is to transform soft plastics recycling in Australia.

“This funding will see our Kilburn site in South Australia become the prominent soft-plastic recycling processor in the country, with materials recycled here and sold into local and global packaging markets.”

Recycling Plastics Australia announced the Kilburn project during the Plastic Free July campaign, which promotes the reduction of plastic pollution among Australians.

In addition to funding recycling centres, the Australian government is focusing on improving packaging design through new national packaging laws. These laws will mandate that packaging be designed in accordance with circular economy principles, ensuring it can be recovered, reused, recycled, and reprocessed safely.

On a national scale, the government is scaling up recycling capacity by over one million tonnes per year. In March this year, Wingecarribee Shire Council in the state of New South Wales, Australia, announced the commencement of a soft plastic recycling trial at its Moss Vale Community Recycling Centre.

U.S. Plastics Pact releases essential guides to advance **‘Circular Economy’ for plastics**

The U.S. Plastics Pact, a solutions-focused consortium of businesses, government agencies, NGOs, and research institutions has released their Design for Circularity Playbooks, three essential reports designed to guide the lifecycle of plastics in the United States.

The newly unveiled Design for Recyclability Playbook, Design for Reuse Playbook, and Design for Compostability Playbook provide detailed guidelines to ensure that plastic packaging is continuously reused, recycled, or composted, thereby reducing plastic waste and its environmental impact.

By bringing together diverse stakeholders, the U.S. Pact aims to drive systemic change across the plastics value chain. These playbooks are tools for industry insiders and essential guides for anyone committed to sustainability.

Jonathan Quinn, CEO of U.S. Plastics Pact, emphasized the responsibility in why they are releasing these playbooks:

“These reports are crucial tools that hold all of us accountable for designing sustainable and environmentally friendly plastic packaging. These reports represent a significant step forward in our shared journey toward sustainability. By providing clear,



actionable guidelines, we empower companies and organizations to make informed decisions to drive substantial improvements in plastic design and management. We all need to take responsibility, and these guidelines help us do just that.



The Design for Recyclability Playbook is crafted to ensure plastic packaging aligns with current recycling infrastructures. It outlines strategies for designing new packaging and refining existing solutions to enhance recycling efficiency, reduce problematic materials, and ultimately boost national recycling rates.

The Design for Reuse Playbook delivers a framework for creating and implementing reusable packaging systems.



New Zealand's first kerbside soft **Plastic Recycling Trials in Nelson**

The city of Nelson in New Zealand has embarked on a six-month trial for kerbside collections of soft plastic, funded by the industry. This initiative, the first of its kind in the country, is being conducted by The Packaging Forum's Soft Plastic Recycling Scheme and supported, but not funded, by the Nelson City Council. The trial aims to assess the feasibility of recycling soft plastic packaging through kerbside collection.

Nelson Mayor Nick Smith said, “Kerbside recycling has the advantage of being much more convenient than having to take soft plastics to a specific store. I strongly encourage Nelsonians in the 140 selected streets to support this initiative.”

Households in Nelson selected to participate will receive orange recycling bags for their soft plastics, which will be collected fortnightly by Enviro NZ, separate from the council's recycling operation. The collected plastics will then be

recycled into products like fence posts and garden beds by Future Post in Blenheim.

Lyn Mayes, Scheme Manager, Soft Plastic Recycling Scheme says the purpose of this trial is to explore the viability of recycling soft plastic packaging at kerbside, and whether this collection model is economically viable and deliverable at scale.

“As part of the trial we will also gather data on household willingness and community demand for such a collection service; levels of contamination in the collections and, importantly, whether the model is sustainable and cost effective.”

Under a priority product stewardship system, producers will be mandated to pay for the amount of plastic packaging which they place on the market with funding allocated to the collection, sortation and reprocessing of these materials.

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ProAmpac introduces New Kerbside - Recyclable Lightweight Foam Tray

ProAmpac, a flexible packaging and material sciences company, has launched its polypropylene-based ProActive Recyclable Fresh Tray FT-1000 solution for the food industry. The patent-pending tray has been approved for kerbside recycling.

It offers the foodservice and grocery markets a lightweight, easily recyclable alternative to traditional foam trays. ProAmpac tray business Vice-President and General Manager Pascal Labrie said: "ProActive Recyclable Fresh Tray FT-1000 offers grocery and food retail markets a robust, sustainable packaging solution that aligns seamlessly with their operational needs. ProAmpac's approach to sustainability – ProActive Sustainability® – provides innovative sustainable flexible packaging products to help our customers achieve their sustainability goals."

He further added "by adopting the FT-1000, these sectors can meet their sustainability goals without compromising performance or customer satisfaction. This tray is a significant step forward in our commitment to supporting the food industry's environmental initiatives and advancing recyclable packaging choices".

cFT-1000 is designed with durability in mind, featuring impact resistance and stiffness, making it suitable for meat, seafood, dairy, and produce applications. Its water and grease resistance also ensure products remain fresh and visually appealing on the shelf.



ProAmpac technical specialist Maryam Dini said: "Without compromising performance, ProActive Recyclable Fresh Tray FT-1000 maintains line speed on wrapping equipment, matching the efficiency of traditional rigid trays. Also, ProAmpac's FT-1000 is comprised of up to 90% air, significantly reducing material footprint, making this innovative technology a more sustainable alternative."



Wittman launches PCF Calculations Software

Wittman the leading injection molding machine manufacturer has updated its Temi+ manufacturing execution system to automatically calculate product carbon footprint.

The product carbon footprint (PCF) includes emissions from the entire life cycle of a product—from raw material production to recycling. The calculation can be correspondingly complex. With a new software, the WITTMANN Group is simplifying this process for its customers. The TEMI+ dashboard shows the product carbon footprint at a glance and indicates the share of the injection molding process and the share of the material in the total emissions.

As soon as a production cell is clicked on, the processor receives a complete overview of the production progress. The relevant key figures are displayed for each individual cycle. The CO₂ emissions are now added there—each indicated in grams per cycle. When using a single-cavity mold, this value corresponds to the PCF. When using multicavity molds, this value is divided by the number of cavities to obtain the PCF. The calculation of CO₂ emissions is based on two values. One is the energy consumption of the injection molding production cell and the other is the shot weight. 



The energy consumption of the production cell is automatically measured cycle by cycle either directly by the MES or by using the IMAGOxt software. The CO₂ emissions resulting from the energy consumption depend on the production location. In Germany, for example, with the current electricity mix, the factor is 0.354 g CO₂ per Wh. This value is stored in the MES or shared from the customer's ERP so that the system can automatically calculate the CO₂ footprint of the production cell.

Bostik Launches New Range of Packaging Adhesive Kizen™ LIME



Bostik, the Arkema Group's adhesive solutions segment, has launched Kizen™ LIME, an innovative, and proprietary formulation made with a minimum of 80% renewable ingredients (with a combination of bio-based materials certified by EN 16640:2017 and bio-circular materials certified by ISCC PLUS). Kizen™ LIME also provides high performances in mileage, adhesion and energy savings. The launch marks an important step in Bostik's commitment to reducing carbon footprints and improving the sustainability of packaging solutions.

Pascal Peroni, Global Strategic Marketing Director, Bostik said, "At Bostik we have a unique innovative model in the adhesive industry focusing on sustainability improvements. We are part of a specialty material group, Arkema, who committed to a more sustainable future with near-term, SBTi-approved targets and communicated its ambition to reach towards Net Zero by 2050."

Kizen™ packaging products are hotmelts with 100% solid content and free of both solvent and water. They are designed to provide a tamper-evident sealing by fiber tearing of cardboard packaging. The consumer gets the confirmation, by the seal, that the packaging has not been opened since it was closed at the brand owner's plant.

Kizen™ fulfills the most demanding requirements of Fast-Moving Consumer Goods for adhesives. It can contribute to lowering carbon footprint of our Customers, while still complying with the most advanced safety standards and best in class efficiency for brand owners and industrial partners.

AFFINITY™ RE from Dow has been instrumental in enabling Kizen™ LIME to reach almost 100% carbon footprint avoidance when including biogenic carbon uptake, owing to an attractive by-product from food industry.

Applied at low temperature with the ProBlue™ Flex Melters from Nordson, Kizen™ LIME provides





Coca-Cola India Launches Recycled Lightweight Bottles for Carbon Savings

Coca-Cola India has launched its Affordable Small Sparkling Package (ASSP) bottle type made with 100% recycled PET (rPET), starting with the state of Orissa. The 250 ml bottles; comparatively lighter than a standard bottle are manufactured by Coca-Cola's bottling partner, Hindustan Coca-Cola Beverages (HCCB).

According to Coca-Cola, ASSP carbon emissions are reduced by 36% through the light weighting of PET material as compared to conventional virgin PET packaging. Additionally, the shift from virgin PET to rPET in ASSP contributes to a further reduction in the carbon footprint, resulting in an overall 66% decrease compared to non-ASSP packaging with virgin PET.

"Our efforts at expanding rPET in India is a testimony of our commitment to increase the availability of high-quality, food-grade, recycled plastic for consumers in India," says

Enrique Ackermann, Vice President for Technical Innovation and Supply Chain at Coca-Cola India and Southwest Asia.

"With these eco-friendly bottles we seek to drive a circular economy for packaging, reduce waste and carbon emissions, bringing us closer to the world Without Waste goal of making bottles with 50% recycled content by 2030." He added.

The ASSP, introduced in 2016 and weighing less than 10g, took nearly two years to create.

"The introduction of rPET in ASSP is a crucial step toward plastic circularity, emphasizing a substantial reduction in the overall carbon footprint. This initiative aligns with our broader vision to scale up sustainable practices and lead the way in shaping a greener future for the beverage industry in India" says Alok Sharma Executive Director for Supply Chain at HCCB.

New Process vaporizes Plastic Bags and Bottles to make New Recycled Plastics



Chemists at the University of California – Berkeley have developed a catalytic process that turns the largest component of today's plastic waste stream, polyolefin plastic bags and bottles into gases -- propylene and isobutylene that are the building blocks of polypropylene and other types of plastics.

The new chemical process can essentially vaporize plastics that dominate the waste stream today and turn them into hydrocarbon building blocks for new plastics. The catalytic process, developed at the University of California, Berkeley, works equally well with the two dominant types of post-consumer plastic waste: polyethylene, the component of most single-use plastic bags; and polypropylene, the stuff of hard plastics, from microwavable dishes to luggage. It also efficiently degrades a mix of these types of plastics.

The process, if scaled up, could help bring about a circular economy for many throwaway plastics, with the plastic waste converted back into the monomers used to make polymers, thereby reducing the fossil fuels used to make new plastics. Clear plastic water bottles made of polyethylene terephthalate (PET), a polyester were designed in the 1980s to be recycled this way. But the volume of polyester plastics is minuscule compared to that of polyethylene and polypropylene plastics, referred to as polyolefins.

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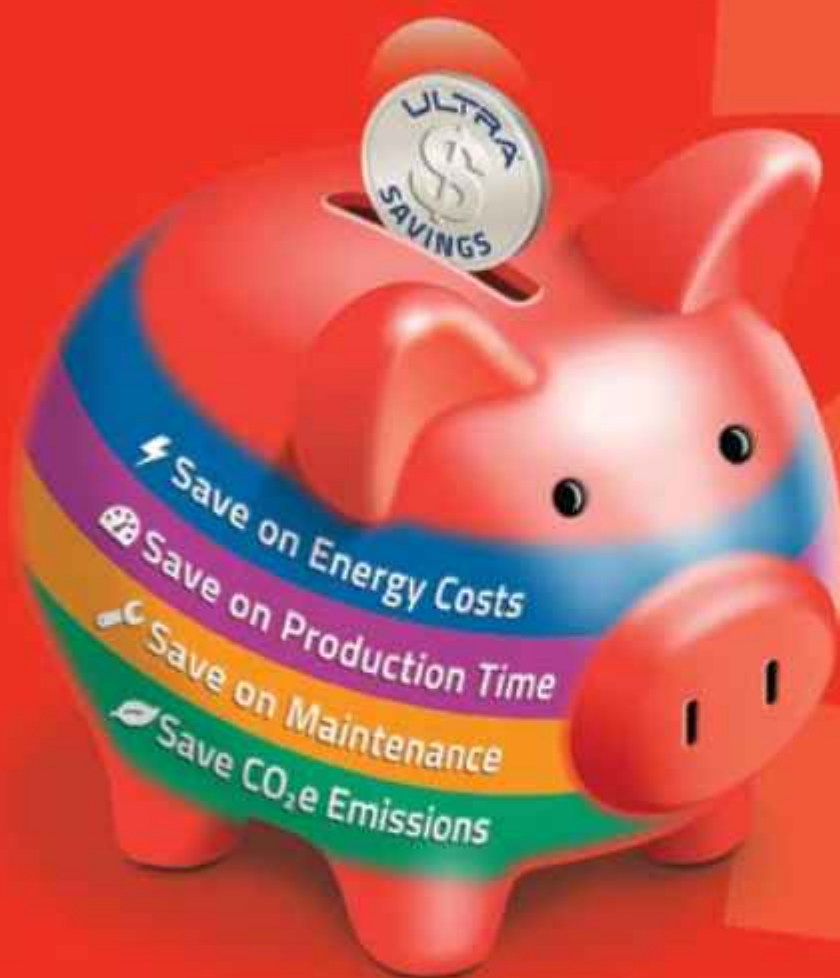
We have an enormous amount of polyethylene and polypropylene in everyday objects, from lunch bags to laundry soap bottles to milk jugs -- so much of what's around us is made of these polyolefins," said John Hartwig, a UC Berkeley professor of chemistry who led the research. "What we can now do, in principle, is take those objects and bring them back to the starting monomer by chemical reactions we've devised that cleave the typically stable carbon-carbon bonds. By doing so, we've come closer than anyone to give the same kind of circularity to polyethylene and polypropylene that you have for polyesters in water bottles.

”

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