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Indplas[®] '25

10th INTERNATIONAL PLASTICS EXHIBITION

28th February - 3rd March 2025

Biswa Bangla Mela Prangan
(Milan Mela) Kolkata, India

THE FUTURE IS **e**AST

INNOVATE TRANSFORM SHOWCASE



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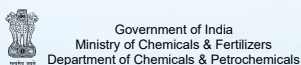
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FROM THE
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PLASTICS INDIA

A journal for the growth and development of plastics trade & industry

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Dear Readers,

After a long break my team is back with vibrant, content rich, and update hard copy of magazine "Plastics India" with an option of e-magazine through hyperlink in your mailbox from Official IPF Email. The launching of Indplas'25 -10th International Plastics Exhibition from 28th February to 3rd March 2025 at Biswa Bangla Mela Prangan, Kolkata was moment of great pride for our federation.

International Exhibition on Plastics at Kolkata means business so lets understand that India has stably established itself in the core of the international production of petrochemical and petrochemical- related products. With the economic growth cycle slowing down in Europe & United States, the Asian developing nations, especially India, is ideally fortifying its stand in the global petrochemical market as a producer of these products. The plastics industry has developed considerably since the invention of various routes for the production of polymers from petrochemical sources. Plastics have substantial benefits in terms of their low weight, durability and lower cost relative to many other material types. Today plastics are almost completely derived from petrochemicals produced from fossil oil and gas. Around 4 per cent of annual petroleum production is converted directly into plastics from petrochemical feedstock. As the manufacture of plastics also requires energy, its production is responsible for the consumption of a similar additional quantity of fossil fuels.

Approximately 50 per cent of plastics are used for packaging, agricultural films and disposable consumer items, between 20 and 25% for long-term infrastructure such as pipes, cable coatings and structural materials, and the remainder for durable consumer applications with intermediate lifespan, such as in electronic goods, furniture, vehicles, etc. Plastics have only been mass-produced for around 60 years, their longevity in the environment is not known with certainty. Most types of plastics are not biodegradable, and are in fact extremely durable, and therefore the majority of polymers manufactured today will persist for at least decades and probably for centuries if not millennia. Even degradable plastics may persist for a considerable time depending on local environmental factors, as rates of degradation depend on physical factors, such as levels of ultraviolet light exposure, oxygen and temperature, while biodegradable plastics require the presence of suitable micro-organisms. Therefore, degradation rates vary considerably between landfills, terrestrial and marine environments. Indian Plastic industry faces environmental myths and lacks in technology. Going ahead would be recycling & reuse of plastics which could be a foremost step towards fostering innovation and sustainability.

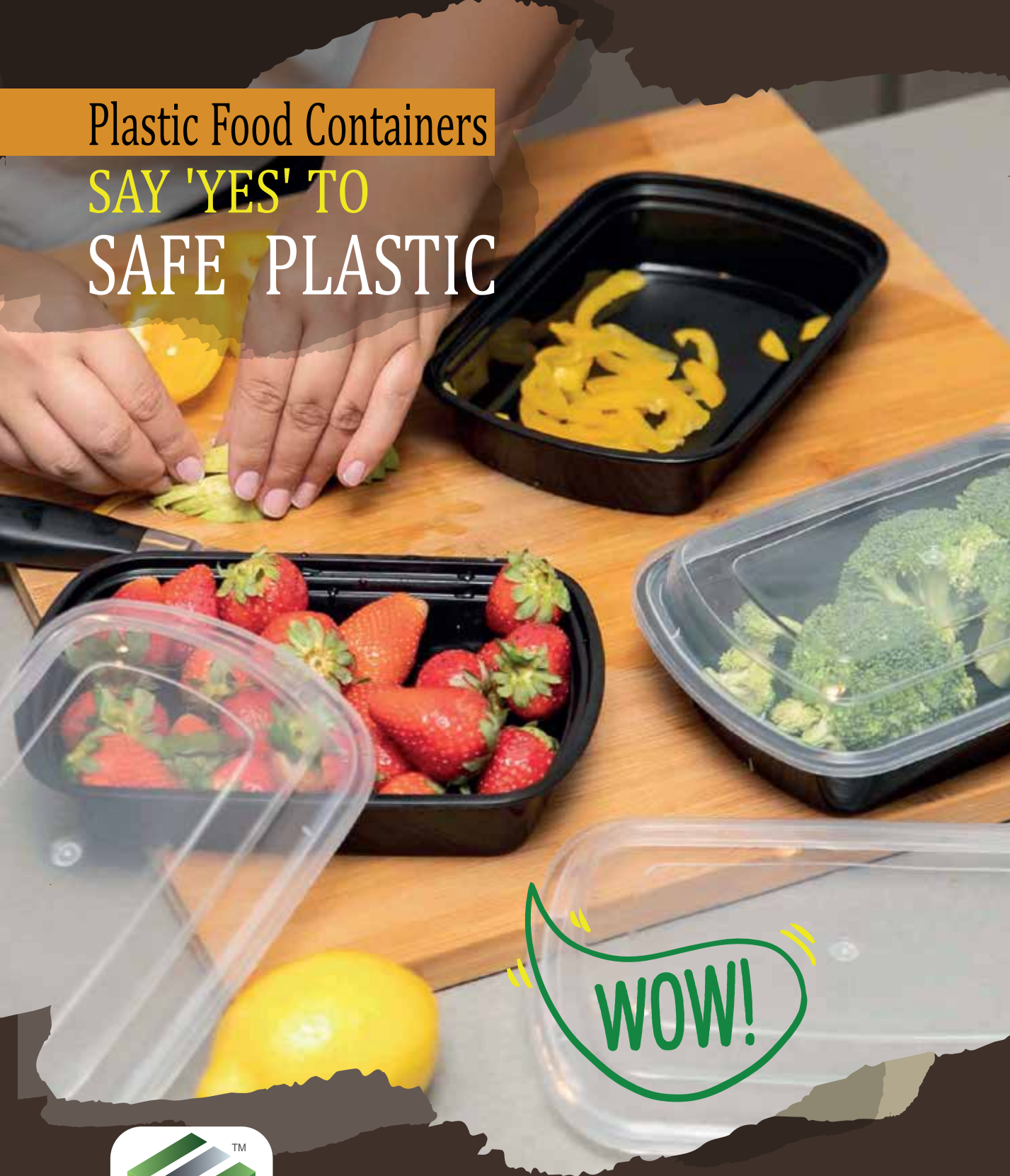
Now let's embrace the festive vibes as Vishwakarma Puja, Durga Puja and Navratri approaches. Take a breather and soak in the joy and traditions.

Happy Browsing. Post your comments on this new edition at :
magazine@ipfindia.org

Thanking you,

Manish K Singhania
Editor

Plastic Food Containers SAY 'YES' TO SAFE PLASTIC



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PRESIDENT *Message*

Dear IPFians,
Greetings to all members!

After the tremendous success of Indplas'22 – 9th International Exhibition on Plastics, the Federation has decided to hold its 10th edition – INDPLAS'25 – 10th International Exhibition on Plastics from 28th February 2025 to 3rd March 2025. The exhibition will be held at Biswa Bangla Mela Prangan (Milan Mela).

The Federation has appointed Mr. Ashok Jajodia, Past President as Chairman – Indplas'25 Exhibition Organising Committee. Mr. Jajodia and his team have already started work on the exhibition with booking of venue, receiving logo support from various organisations and contacting all our previous exhibitors and sponsors to participate in Indplas'25.

Our previous IndPlas'22 exhibitors were very excited on getting information that IPF will be holding its next exhibition in February – March 2025. They have conveyed their Expression of Interest in booking of stalls in Indplas'25 exhibition. I would request all members to kindly spread this message amongst their contacts to enable them to book their stalls and not regret missing out on the show.

Biodegradable plastics have emerged as a promising solution to the environmental challenges posed by traditional plastics. Unlike conventional plastics that persist in the environment for hundreds of years, biodegradable plastics decompose naturally, reducing their impact on ecosystems. This writeup explores the formation process, applications, and benefits of biodegradable plastics.

Biodegradable plastics are typically derived from renewable resources such as corn starch, sugarcane, potato starch, or cellulose from wood pulp. The process involves polymerizing these organic materials into long chains, similar to the formation of traditional plastics. However, biodegradable plastics are designed to break down into simpler compounds when exposed to natural elements such as sunlight, moisture, and microorganisms.

Biodegradable plastics find applications across various industries, including packaging, agriculture, healthcare, and consumer goods. In packaging, they are used for items like food containers, disposable cutlery, and shopping bags. In agriculture, biodegradable mulch films help improve soil

health and reduce plastic waste. In healthcare, biodegradable sutures and implants offer safe and sustainable alternatives. Moreover, biodegradable plastics are also used in 3D printing and textiles, expanding their utility across different sectors.

1. **Environmental Sustainability:** Biodegradable plastics contribute to reducing plastic pollution by breaking down into natural compounds, leaving behind no harmful residues.
2. **Renewable Resources:** Unlike fossil fuel-based plastics, biodegradable plastics are derived from renewable resources, decreasing dependence on non-renewable sources.
3. **Reduced Carbon Footprint:** The production of biodegradable plastics often generates lower greenhouse gas emissions compared to traditional plastics, thereby mitigating climate change impacts.
4. **Soil Enrichment:** Biodegradable mulch films degrade into organic matter, enriching soil quality and promoting plant growth, especially in agricultural applications.
5. **Biocompatibility:** Biodegradable plastics are compatible with living tissues, making them suitable for medical implants and sutures without adverse effects on the human body.

Despite their numerous benefits, biodegradable plastics face challenges such as cost competitiveness, limited availability of raw materials, and the need for standardized disposal methods. Additionally, proper waste management infrastructure is essential to maximize the benefits of biodegradable plastics and prevent contamination of natural ecosystems. Research and innovation are ongoing to enhance the performance and scalability of biodegradable plastics, paving the way for a more sustainable future.

Biodegradable plastics offer a promising alternative to traditional plastics, addressing environmental concerns while meeting the diverse needs of industries and consumers. Through innovation, collaboration, and responsible consumption, the widespread adoption of biodegradable plastics can contribute to a cleaner, healthier planet for future generations.

Shri Lalit Agarwal
President



HON'Y. SECRETARY *Message*

Dear Members,

Season's Greetings!!

It is with great pleasure that I reflect upon the recent activities and initiatives undertaken by the Indian Plastics Federation (IPF) aimed at fostering growth, learning, and camaraderie among our esteemed members.

One of our key events this year was the "GST Seminar" held on 9th February 2024 at Hotel Kenilworth, Kolkata. Understanding and complying with GST regulations is crucial for our members, and this seminar provided an invaluable opportunity to address their concerns. We were honored to have Janab Khalid Aizaz Anwar, IAS, Former Commissioner of the Department of Commercial Taxes, Government of West Bengal, and currently the Senior Special Secretary-Finance Department, Government of West Bengal, as our Chief Guest. His insights were complemented by the expertise of Mr. Ankit Kanodia, Advocate, and Ms. Suruchi Agarwal, CA. The session was interactive and our members were able to clear their doubts, which was highly appreciated. Mr. Lalit Agrawal, President of IPF, had the privilege of felicitating Janab Khalid Aizaz Anwar, IAS.

Our community spirit was further celebrated during the Holi get-together on 19th March 2024 at Ganpati Banquet, Ballygunge Park. This year, we introduced a Kavi Sammelan which brought a unique cultural touch to the event. Members and their families enjoyed the poetic performances, followed by a delightful dinner, strengthening our bonds.

In our ongoing efforts to support members' business needs, we established several helpdesks including EPR, MSME, and Taxation helpdesks. These resources have been instrumental in resolving various business-related issues, providing tailored assistance to our members.

On 13th April 2024, the IPF Sports Carnival was a resounding success. Members participated in Cricket, Carrom, Table Tennis, and Darts, showcasing their sporting skills and fostering a spirit of friendly competition. Winners were awarded cash prizes, adding to the excitement and celebration of the day.

The one-day workshop on "Double Your Profits" by Mr. Rahul Jain, held on 20th April 2024 at The Lalit Great Eastern, Kolkata, was another highlight. As a strategic partner of this event, IPF facilitated a highly impactful session that equipped our members with strategies to significantly enhance their profitability.

IPF's presence at the KPLEX 2024 event from April 26th to April 29th 2024, at Bengaluru International Exhibition Centre, was notable. Our 12 sq. m. stall, provided complimentary, allowed us, IPF team has promoted the upcoming IndPlas'25 exhibition. The delegation, including key IPF office bearers, successfully booked several stalls and generated substantial interest.

On 27th April 2024, IPF supported a seminar on 'Plastics vs Planet' organized by the Indian Institute of Social Welfare and Business Management, Kolkata, and the West Bengal Pollution Control Board. Our Past President, Mr. Sisir Jalan, contributed significantly to the panel discussion, addressing environmental concerns related to plastics.

We also participated in a Roundtable Conference on Addressing Challenges for MSMEs, organized by FOSMI & FISMI on May 3rd, 2024, at Polo Floatel, Kolkata. Our representation by Mr. Lalit Agrawal, President, and Mr. Alok Tibrewala, Past President, underscored our commitment to addressing the critical issues

HONY. SECRETARY

Message

faced by MSMEs.

The workshop on Artificial Intelligence (AI) on 4th May 2024 at Hotel Kenilworth, featuring Mr. Ayush Banerjee, provided our members with cutting-edge strategies to leverage AI for business growth. The session was highly informative and opened new avenues for enhancing business operations through technology.

During Plexconnect 2024, held at Bombay Exhibition Centre, IPF hosted a 27 sq. mtr. stall showcasing the activities of IPF and promoting IndPlas'25 exhibition. Received good response for IndPlas'25 from the participants.

At the Golden Jubilee of the West Bengal Pollution Control Board (WBPCB) and World Environment Day celebrations from June 10th – 11th 2024 at Biswa Bangla Convention Centre, Kolkata, IPF secured a 6 sq. mtr. stall to highlight sustainable practices like plastic roads and waste-to-wealth programmes. IPF received full support from its members to showcase their green and compostable products at IPF Stall. Md. Ghulam Rabbani, Hon'ble Minister-in-charge, Department of Environment, Govt. of West Bengal visited the IPF stall along with Smt. Roshni Sen, I.A.S., Managing Director, WBIDC, Dr. Rajesh Kumar, I.P.S., Member Secretary, WBPCB, Dr. Kalyan Rudra, Chairman, WBPCB.

IPF also promoted IndPlas'25 at IPLAS-24, which was held from June 14th to 17th 2024, in the Chennai Trade Centre, Nandambakkam, Chennai, organised by TAPMA. A 9 sq. mtr. stall was taken to promote IndPlas'25 exhibition.

The Global Conclave on 'Plastic Recycling and Sustainability' was organised by AIPMA and CPMA from July 4th to 7th, 2024, at Bharat Mandapan, IECC (Pragati Maidan), New Delhi. IPF has taken a 9 sq. mtr. stall to promote IndPlas'25 exhibition and has received positive response from exhibitors.

The launch function of the IndPlas'25 exhibition took place on July 8th, 2024, at the JW Marriott Hotel in Kolkata. The event was graced by the presence of the Hon'ble Minister, Dr. Shashi Panja, from the Department of Industry, Commerce, and Enterprise, Government of West Bengal, who served as the Chief Guest. Under the adept chairmanship of Mr. Ashok Jajodia and his team, the event was a grand success, garnering extensive press coverage and further highlighting the industry's importance.

Lastly, Indian Plastics Federation in association with MCCI, organized the 'Plastics and Chemical Conclave'. The event was graced by Md. Ghulam Rabbani, Hon'ble Minister of Environment, Govt. of West Bengal, as the Chief Guest. Other dignitaries included Dr. Kalyan Rudra, Chairman, Dr. Rajesh Kumar, Member Secretary, WBPCB, Mr. Lalit Agrawal, President, IPF and Mr. Debarshi Dutttagupta, Chairman ER, ICC. The conclave focused on plastic recycling, waste management, and latest technologies to address plastic-related issues.

We are committed to continuously supporting our members through such diverse and impactful events. Thank you for your active participation and support in making these initiatives successful.

With best wishes
Shyamlal Agarwal
Hony. Secretary

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I laid down my office in January 2024 after serving the Federation in various capacities for over a decade. The journey had its own turbulence arising due to the coronavirus pandemic, price rise of polymers, the inconvenience caused to manufacturers over the EPR (Extended Producer Responsibility) issue, development of a second Poly Park for IPF members, countering the negative comments made on plastics, completion of the IPF Knowledge Centre - the construction of which started many years back and the bold decision to hold INDPLAS'22 exhibition in November 22 when the plastic industry was yet to come out from the ill effects of the LOCKDOWN.

Each of the issues we faced was handled by us in a most effective manner. We counteracted the negative propaganda against plastics by high lighting the role played by plastic during the pandemic. Most of the disposables used by doctors and front line covid warriors were products made from polymers. So how can plastics cause harm to society and nature when it has played the role of a savior?

To address the issue of price rise we had written to the Government of India to intervene in the matter along with other plastics associations. Our efforts bore fruit. Plastic Waste Management Rules 2021 (as amended) and Extend-

ed Producer Responsibility was a difficult subject matter to understand and even now most manufacturers have difficulty in understanding the same. We organised workshops/Seminars for our members with the help of West Bengal Pollution Control Board to enable members to better understand the intricacies of the subject matter. The issue of phasing out of Single Use Plastics was also taken up by the Federation and the inconvenience faced by members under the new rules was also highlighted to the WBPCB. Workshop was also held on Effective Implementation of PWM Rules 2021 (as amended). Workshop/Seminars on the "Practical Implications of GST" was organised by IPF. The Commissioner, Department of Commercial Taxes addressed the gathering and answered various questions raised by members. IPF office was renovated prior to Indplas'22 exhibition to enable Indplas Team Members to carry out their work in a better environment. IPF also took a delegation to ChinaPlas 2023 that was suspended earlier due to the coronavirus pandemic. Health Check-Up and Blood Donation Camp and free Eye Check UP was also organised at IPF Knowledge Centre. The Commissioner of Police, Howrah inaugurated the Camp. After collect various recommendations from members we had sent a pre-budget memorandum to Smt Nirmala Sitaraman, Hon'ble Union Finance Minister for incorporating our views into the Union Budget.

During my tenure we had also participated in The Bengal Global Business Summit organised by the government of West Bengal. For the success of the summit IPF was requested to co-host the Summit. Concurrently with the Summit IPF also participated in the Bengal Global Trade Expo 2022 at Science City, Kolkata that was held under the aegis of Bengal Global Business Summit 2022 where we had taken a 75 sq. m. stall to showcase development of plastic products and industries in West Bengal. The undersigned also Chaired a session on Sectoral Issues during the Summit.

Development of a second Poly Park had been an Agenda item of the Federation for the last over 10 years. Initially we had approached the government for land. The government offered us land but the location of the land offered was not acceptable as the land was located far away from Kolkata and members were unwilling to set up their units in faraway places. We then negotiated with private developers and ultimately they have been able to get a 50-acre plot of land near Uluberia. The work is still in progress and hope fully the Poly Park will be completed during the period of the current team.

The decision to hold Indplas'22 in November 2022 was an extremely bold decision. In 2022 we were just getting out of the third wave of the corona pandemic. There were multiple views both for and against holding of Indplas in 2022. Ultimately during Holi of 2022, with only a few months to spare we decided to accept the challenge – hold Indplas'22 in November 2022 – and that too at Biswa Bangla Mela Prangan, Kolkata which was still under renovation, on the verbal assurance of WBIDC that the

renovation work would be completed by November 2022. The new venue developed by the government would be amongst the best in the country with ultra-modern amenities and infrastructure. The exhibition was held as per schedule with great success. HPL, IOCL and many large plastic processors, machine manufacturers were sponsors to the exhibition. The Federation also received lot of support from West Bengal Industrial Development Corporation Ltd who were also a sponsor. Members will be happy to know that the revenue generated by INDPLAS'22 broke all previous records in spite of reducing the stall booking rates to help exhibitors who have been badly affected due to the LOCK DOWN. The success of INDPLAS'22 will motivate exhibitors in India esp. Eastern India to participate in INDPLAS'25. I am sure under the able leadership of Shri Ashok Jajodia, Chairman-Indplas'25 EOC a new record will be created by IPF.

I take great pleasure in informing members that I laid down by office as President giving the Federation a solid financial structure to enable the next team to carry out various activities which are normally held up due to lack of funds. Our joint efforts not only strengthened our finances but also that of the government of India since they collected Income Tax from the Federation that by IPF standards was an all-time record.

I wish the current team the best of luck and under their able leadership I am sure they will raise the flag of IPF to a higher level.

With warm regards

Sisir Jalan

Immediate Past- President



Indplas®'25 - Launch Function

THE FUTURE IS **EAST** THE FUTURE IS **PLASTIC**



Indian Plastics Federation (IPF) organized a grand launch function for IndPlas'25, the 10th International Plastics Exhibition, focusing on "The Future is East," set to take place from February 28 to March 3, 2025, at Biswa Bangla Mela Prangan (Milan Mela, Kolkata). The event was graced by Dr. Shashi Panja, Hon'ble Minister-in-Charge, Department of Industry, Commerce, and Enterprise, Government of West Bengal, as the Chief Guest. The dais was shared by Mr. Alok Tibrewala - Past President and Chairman of NAB - IndPlas'25, Mr. Ashok Jajodia - Past President and Chairman - IndPlas'25, Mr. Lalit Agrawal - President, Mr. Amit Kumar Agarwal - Vice President and Co-Chairman IndPlas'25, Mr. Shyam Lal Agarwal, Honorary Secretary and Mr. Sudarshan Kumar Tawri, Honorary Treasurer.

The ceremony started with national anthem and lamp lighting ceremony. A warm welcome of the guests, followed by an insightful address by Mr. Lalit Agrawal highlighting the enormous potential of the Eastern region for the plastics industry emphasising the necessity of governmental support to foster the growth of the industry. He pointed out that the plastics industry in West Bengal is experiencing a robust growth rate of 12% to 15%, compared to the national average of 6% to 7%. Remarkably,

about 90% of the state's plastics manufacturers belong to the MSME sector, while larger players are also expanding their operations in Bengal. He stressed that the future of the plastics industry is indeed bright in Eastern India.

Mr. Alok Tibrewala, Past President IPF & NAB Chairman Indplas'25, expressed heartfelt gratitude to The Chief Guest for her presence at the launch function of Indplas'25. Mr. Tibrewala acknowledged Dr. Panja's distinguished background, hailing from the esteemed Panja family, known for their contributions to law, health, politics, and drama. He emphasized that under her leadership, the plastic industry is set to undergo significant transformation over the next five years.

Reflecting on the COVID-19 pandemic, Mr. Tibrewala highlighted the critical role of plastics as the second most crucial resource after oxygen. Plastics were vital in the production of PPE kits, gloves, and other protective equipment, and the period saw a notable increase in exports of these essential items.

He extended his appreciation to the Hon'ble Chief Minister, Ms. Mamata Banerjee, for her unwavering support and proactive measures in promoting industry in West Bengal. Mr. Tibre-

wala praised Ms. Banerjee's efforts in reshaping Bengal's image through various initiatives that have led to an increase in the state's GDP, signalling growth and sustainability.

He specifically mentioned the success of the 'Duare Sarkar' program, which has been effective in delivering government services directly to citizens. Additionally, he highlighted industrial schemes like 'Bangla Shree' and various textile initiatives, which have significantly contributed to the growth and sustainability of the MSME sector in Bengal.

In conclusion, Mr. Tibrewala expressed optimism about the future of the plastic industry under Dr. Panja's leadership and the ongoing support of the state government, which promises continued progress and prosperity for Bengal.

Mr. Ashok Jajodia, Past President IPF & Chairman IndPlas'25, informed that the 10th International Plastics Exhibition, highlighting the theme "The Future is East, The Future is Plastics" is scheduled to be held from February 28th to March 3rd, 2025, at Biswa Bangla Mela Prangan, Kolkata also known as Milan Mela and the event is set to be a milestone for the plastics industry.

Mr. Jajodia expressed his gratitude to Chief Minister Ms. Mamata Banerjee and the Government of West Bengal for providing world-class exhibition facilities, recalling the journey from previous exhibitions held at Science City and Eco Park. He noted the success of IndPlas'22, which was the first physical exhibition after the COVID-19 pandemic, and emphasized that this paved the way for an even larger event.

IndPlas'25, with support from the Govt of West Bengal, will feature two expansive exhibition halls offering a total area of 9000 square meters. One hall will be dedicated to machinery and ancillaries, while the other will showcase raw materials and finished products. The event aims to host 500 exhibitors across India and Overseas. Concurrent seminars on various industry topics will also be conducted over the four days.

Mr. Jajodia emphasized on the growing petrochemical investments in East and the role of IndPlas as a leading platform for industry



innovation and collaboration. He expressed optimism for the future, calling for unity to make East, the epicentre of the plastics revolution. He concluded by sharing a promotional film for IndPlas'25, showcasing the opportunities and innovations that await exhibitors and visitors, and made a request to the Hon'ble Minister for an even larger and more advanced exhibition facility to support the growth of the industry.

This event promises to be a transformative moment for the plastics sector of this region, driving innovation and growth in the industry.

Mr. Amit Kumar Agarwal, Vice President, IPF & Co - Chairman, Indplas'25 shared the teaser showcasing "The Advantages of Bengal," inspired by the BGBS taglines "Bengal means Business" and "Advantage Bengal" highlighting the state's potential as an attractive destination for investment and business growth. The teaser showcased on inviting industrialists to explore vast opportunities in West Bengal particularly in the plastics sector.

Respected Chief Guest in her address began by commending the dignitaries for their insightful speeches and the compelling presentation that underscored West Bengal's strengths as a prime destination for industrial investment, echoing the BGBS tagline, "Bengal means Business."

Mrs. Panja lauded the Indplas tagline, "Future is East, Future is Plastic," describing it as succinct, impactful, and a clear reflection of East India's emergence as the next industrial hub of the nation. She emphasized the significant developments underway in West Bengal, including the acquisition of land for industrial parks and the construction of corridors across the state. She also acknowledged the feedback from industrialists and investors who advocate for developments closer to the capital. Mrs. Panja highlighted the initiatives led by Honourable Chief Minister, Ms. Mamata Banerjee, to repurpose government-owned lands of defunct PSUs into thriving industrial hubs. Furthermore, she pointed out the establishment of new seaports, including the deep-sea port in Tajpur, as well as the launch of new airports, all of which are poised to transform West Bengal into a vital industrial center.

Mrs. Panja expressed her admiration for the plastics industry's substantial contribution to West Bengal's economic growth, noting that the sector, comprising approximately 5,000 units, generates over ₹5,000 crores in revenue, predominantly from the MSME sector. She concluded her speech by applauding the executive committee for their tireless efforts in organizing the remarkable launch of the Indplas'25 exhibition. Mrs. Panja expressed her anticipation for the event's success.

The event concluded with a vote of thanks by Mr. Shyam Lal Agarwal, Honorary Secretary IPF.

The evening then transitioned into a cocktail dinner, providing an excellent networking opportunity for the over 300 delegates, including exhibitors from IndPlas'25, who attended the program. The event was a resounding success, thanks to the meticulous organization by the IndPlas'25 committee members, setting a positive tone for the upcoming exhibition.





PLASTINDIA FOUNDATION®

Announces Key Leadership for PLASTINDIA 2026



Mr. Alok Tibrewala



Mr. Ashok P. Jajodia

Plastindia Foundation, the apex body representing the major associations, organizations, and institutions connected with plastics in India, proudly announces the appointment of Mr. Alok Tibrewala (Past President, IPF) as Chairman National Executive Council (NEC) for the upcoming PLASTINDIA 2026 Exhibition. This highly anticipated event is set to take place in New Delhi in February 2026.

A Visionary Leader at the Helm

Mr. Alok Tibrewala, Managing Director of

Swastik Plastalloys Pvt. Ltd. and a distinguished past president of Indian Plastics Federation (IPF), brings over two decades of rich industry experience to his new role. During his tenure as IPF President, Mr. Tibrewala was instrumental in advancing the federation's initiatives, promoting sustainable practices, and fostering innovation within the Indian plastics industry. His visionary leadership and dedication have left an indelible mark on IPF, setting new standards for the organization's future endeavors.

PLASTINDIA: Showcasing India's Prowess

PLASTINDIA, a triennial exhibition organized under the aegis of Plastindia Foundation, serves as a premier platform for showcasing the advancements of the Indian plastics industry on a global stage. It also provides an opportunity for the industry to engage with the latest cutting-edge technologies in plastics. The 2026 edition promises to elevate these objectives even further, under the strategic guidance of Mr. Tibrewala.

Dynamic Leadership Team

Joining Mr. Tibrewala in this ambitious venture is Mr. Ashok P. Jajodia, Past President, IPF, and Chairman of Indplas'25, who will serve as the Co-Chairman. Mr. Jajodia is known for his strategic insights and collaborative approach, making him a valuable asset to the leadership team. He has been phenomenal in organizing the previous two editions of Indplas in 2015 and 2018 as Chairman, significantly elevating the Indplas exhibition's stature. Together, they aim to chart a course that will ensure PLASTINDIA 2026 sets unprecedented benchmarks for excellence and success in the plastics industry.

A Note of Appreciation and Congratulations from IPF

The Indian Plastics Federation (IPF) extends its heartfelt congratulations to Mr. Alok Tibrewala and Mr. Ashok P. Jajodia on their esteemed appointments as Chairman and Co-Chairman, respectively, of the National Executive Council (NEC) for the upcoming PLASTINDIA 2026 Exhibition.

The exemplary leadership as President of IPF and significant contributions of Mr Alok Tibrewala to the plastics industry have always been

a source of inspiration. The innovative approach and dedication to promote sustainable practices have set new benchmarks for the entire industry. We are confident that under your visionary guidance, PLASTINDIA 2026 will soar to unprecedented heights, showcasing the immense potential of the Indian plastics sector on the global stage. The strategic insights and collaborative efforts of

Mr Ashok P Jajodia, especially demonstrated during successful chairmanship of Indplas' 15 and Indplas'18, have been instrumental in elevating the stature of the Indplas exhibitions. His role as Co-Chairman for PLASTINDIA 2026 promises to bring further excellence and success to this landmark event.

Together, your leadership is anticipated to not only propel PLASTINDIA 2026 to new frontiers of innovation and sustainability but also continue to elevate the IPF flag high across the nation. The entire IPF community stands behind you, confident that your combined expertise and vision will lead to an extraordinary and groundbreaking exhibition.

A Landmark Event on the Horizon

PLASTINDIA 2026 is poised to be a landmark event, uniting industry leaders, innovators, policymakers, and stakeholders. The event will explore the latest advancements, facilitate the exchange of insights, and forge partnerships that will shape the future of plastics. As India progresses towards becoming a USD ten trillion economy and the world's third-largest economy, PLASTINDIA 2026 will serve as a pivotal platform to showcase the strength and potential of the Indian plastics industry over the next decade.



PLASTINDIA FOUNDATION®

“Vyavasaayatmika Buddhi” (Resolute Intelligence)

Management Sutras in Shreemadbhagwadgeeta

Shreemadbhagwadgeeta is mistakenly often considered a religious book of Sanatanis or Hindus. But, it is a universal book and can be read and followed by persons of all sects and belief- of all religions and followers. In this book, Krishna has taught many life lessons following which a man can attain elevation-materialistic and/or spiritual.

We shall consider its lessons in our business field and can become successful by following its principles. In chapter 2, shloka no.41, Krishna explains the importance of “Resolute Intelligence” which in simple words means “that intellect of a person which is determined to achieve a particular objective despite all troubles or discomforts which he may encounter whilst pursuing it”

This we will understand by means of a simple story:-

There lived a person called Ramlal in a village. Once he set out to dig a well with great enthusiasm. He selected a good spot and set to work happily, humming a tune. After digging 15 cubits, there was no sign of water. Ramlal decided to rest for a while and then move on.

Just then another man came along. He asked Ramlal what he was doing. Ramlal replied that even after digging 15 cubits, there was no water. The stranger told Ramlal that he knew of a spot where water would gush out in minutes. The stranger took Ramlal to the spot and Ramlal immediately started digging. Even after digging fifteen cubits, there was no sign of water.

Soon, another man came along and took Ramlal to a spot where he said water would gush out in a downpour. And Ramlal started digging. After several hours, having dug down thirty cubits, the only water that was flowing in the torrential rain was his sweat. Though water was scarce, the advisors were not.

On the advice of another passerby, Ramlal sunk another twenty cubits in another spot. But still there was not a drop of water. Ramlal became despondent.

Just then, Pyarelal, Ramlal's friend came and heard the whole story. Ramlal told his friend that he had sunk 85 cubits in all. If you had sunk those 85 cubits in one spot, you would have been hit by water anywhere in the village, even below the rocky surface, Pyarelal said.



Ramesh Kumar Rataria
Past President, IPF

Moral of the Story:

This story reminds us of the following verse of Shrimad Bhagavad Gita 2.41:

दूसरा अध्याय - सांख्ययोग



**व्यवसायत्मिका बुद्धिरेकेह कुरुनन्दन।
बहुशाखा ह्यनन्ताश्च बुद्धयोऽव्यवसायिनाम् ॥**

भावार्थ : हे अर्जुन ! इस कर्मयोग में निश्चयात्मिका बुद्धि एक ही होती है, किन्तु अस्थिर विचार वाले विवेकहीन सकाम मनुष्यों की बुद्धियाँ निश्चय ही बहुत भेदों वाली और अनन्त होती हैं ॥

**vyavasāyātmikā buddhir ekeha kuru-nandana
bahu-śākhā hyanantāśh cha buddhayo 'vyavasāyinām**

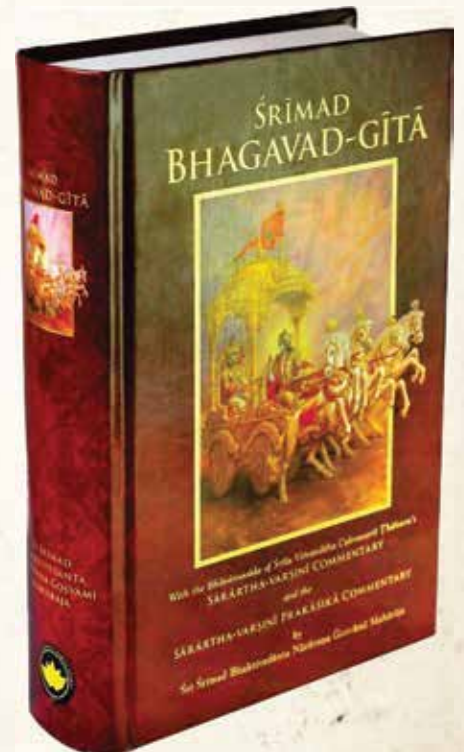
(vyavasāya-ātmikā—resolute; buddhih—intellect; ekā—single; iha—on this path; kuru-nandana—descendent of the Kurus; bahu-śākhāh—many branched; hi—indeed; anantāh—endless; cha—also; buddhayah intellect; avyavasāyinām—of the irresolute

In the story we can see that Ramlal was not firm in his purpose. His wisdom was many-branched and shakable. He paid heed to the advice of many other passersby. But, if he had been determined and stuck to digging in one place, he would have definitely succeeded.

In the same way, to obtain the divine nectar of success, we have to be determined. We should not be swayed by the advice of false advisors and short-sighted persons.

We should be firm in our actions and planning and do it with all sincerity and devotion. It must be performed with the firm faith that through firm determination of action, one will advance to the highest perfection of life.

This faith is called “vyavasthaatmika buddhi. vyavasāyātmikā—resolute; buddhi—intelligence; Thus, by following this wisdom we can attain the desired in success in our goal.



Industrial Revolution 4.0 is definitely profitable for Plastic industry

The Industrial Revolution has gone through several stages, each marked by significant advances in technology and changes in the way goods are produced and distributed. Here is a brief overview of the different stages of the Industrial Revolution:



1. Industrial Revolution 1.0 (late 18th to early 19th century): This was the first stage of the Industrial Revolution, which began in Britain with the development of new manufacturing technologies such as the spinning jenny and the water frame. These machines enabled the mass production of textiles and led to the growth of factories and urbanization.
2. Industrial Revolution 2.0 (mid-19th to early 20th century): This stage of the Industrial Revolution was characterized by the development of new technologies such as the steam engine, the power loom, and the telegraph. These innovations enabled the mass production of goods, improved transportation and communication, and led to the development of new industries such as iron and steel production, railroads, and telegraphy.
3. Industrial Revolution 3.0 (late 20th century): This stage of the Industrial Revolution was marked by the development of digital technology, including computers, the internet, and automation. These technologies transformed industries such as manufacturing, finance, and healthcare, and enabled new business models and modes of communication.



4. Industrial Revolution 4.0 (present day): This stage of the Industrial Revolution is characterized by the integration of physical and digital systems, including the Internet of Things (IoT), artificial intelligence (AI), and big data. These technologies are enabling new levels of automation, optimization, and connectivity in industries such as manufacturing, transportation, and energy, and are expected to transform the economy and society in profound ways.

Lets understand the 1st step towards IR 4.0 . Its data & IIoT will be the 1st step towards your journey of IR 4.0 or commonly called automation

Ah, the world of industrial automation. It's a place where machines never sleep and the only thing hotter than the assembly line is the coffee in the break room. And now, with the advent of the Industrial Internet of Things (IIoT), things are getting even more interesting.

Now, I know what you're thinking. "What the heck is the IIoT?" Well, my dear reader, it's a fancy term for the interconnected network of devices, sensors, and machines that are used to

gather data and automate processes in industrial settings. And let me tell you, it's all the rage in the plastic industry.

You see, the plastic industry is no stranger to automation. Robots have been used to perform tasks like injection moulding and packaging for years. But with the IIoT, things are getting taken to the next level. With sensors embedded in machines and products alike, companies are able to gather data on everything from temperature to pressure to vibration. And with that data, they're able to optimize processes in real time, leading to increased efficiency and decreased waste.

Take injection moulding, for example. With the IIoT, sensors can monitor things like the temperature and viscosity of the plastic as it's being injected into the mould. By adjusting these factors in real time, manufacturers can produce higher-quality parts with less scrap.

In plastic pipe, IIoT, can deliver same thing & we have come out with a new product where you generate lots of MIS report on real time basis which indirectly helps the management to save on raw material & thus increase the net profit . The next step will be machine learning

But it's not just about optimizing processes. The IIoT is also being used to improve product quality and safety. By embedding sensors in products, manufacturers can track things like their location and condition throughout the supply chain. This not only helps to prevent lost or damaged products, but also allows for better traceability in the event of a recall.

And let's not forget about sustainability. The plastic industry has been under fire in recent years for its environmental impact, but the IIoT is helping to change that. By monitoring energy usage and identifying areas where waste can be reduced, companies are able to operate more sustainably while also saving money.

So there you have it, folks. The IIoT is the latest and greatest thing in industrial automation, and the plastic industry is leading the charge. With increased efficiency, improved product quality and safety, and a focus on sustainability, it's no wonder companies are jumping on the IIoT bandwagon. Who knows what other wonders the world of automation will bring us in the years to come? I, for one, can't wait to find out.

Manish G. Bhaia



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SMEs-Story of The Unsung Warriors

By Abhishek Jain (CA, MBA: XLRI Jamshedpur), Partner at INFINITE Group



I was approached to write an article on a subject related to finance and how it impacts SME business. Instead of jumping straightway to the subject of finance, I would rather take this as an opportunity to convey my gratitude to the SMEs of our country. To me, they are nothing less than Warriors, who like a common man, carry an unparalleled optimism and work relentlessly to create something meaningful thereby adding value to the socio economical structure of our nation. SME business contributes about 30% of

India's GDP. As per the World Bank report, SMEs represent 90% of businesses and creates more than 50% employment worldwide. In this article, I will try to highlight the challenges which an SME faces today and how is it different from earlier times.

Today SME has become mostly a ONE MAN SHOW when it comes to taking any strategic decision or manage any contingency or crisis. In previous generations, a business was run by family members including father, son, brother, maternal uncle, cousins, or other relatives which was further strengthened by team of hard-working employees who were loyal. They took pride in long association with an organisation. These factors contributed to the stability in business w.r.t top management and ensured smooth functioning of day-to-day operations. SMEs in that era were better equipped to handle any kind of contingency which life or business environment had to offer. Today, with shrinking family size, the management is reduced to one or two persons and with increasing access to multiple opportunities, the employee turnover is quite high. Hence, it is of utmost importance to develop right kind of inhouse team including external advisors who have the courage to suggest unbiased opinion and advises best suited for the business.

Lot of researchers of global repute have concluded that only about 30% of the family run businesses survive into the second generation, 13% are still viable into the third generation. This leads us to an important aspect of SME business which is Succession Planning. Succession Planning was never a challenge for a generation ago because of bigger family size. With the family size shrinking in current era, succession planning needs to be done and must be strategized in a way that the legacy created by a business over the years does not go in vain. In absence of succession plan, the business ends up by shutting itself which is as good as winding up of business and the legacy created by it. There is always a substantial loss/-cost associated with winding up of a business. Succession planning should be a parallel process along with running of business.

"One should weigh one's capacity before starting a work" said the great teacher CHANAKYA. Entrepreneurs are one of the rare species who

are most optimistic and dare to dream beyond. These are two important characteristics of any entrepreneur, but what really differentiates between a successful and not so successful entrepreneur is correct self-assessment. One must plan and assess one's capability to secure finance to run and expand business in a sustainable manner. Few decades back, a business owner used to secure finances from family, relatives and friends. Further, they were conservative set of businessmen who used to earn profit and reinvest in their business to build it up with lot of patience and perseverance. Bank borrowing was the last option in those times. In current scenario, there are multiple options to secure finances such as Bank Borrowing, Government Schemes, Angel funding, Start Up Funding, Private Equity, SME IPO, etc. The promoter of the business must assess the financial requirement correctly (contingency factor must be built in), must also evaluate whether he or she has enough capacity to sustain it under adverse situations as well. Remember raising required fund is difficult but raising it in right structure and instrument is even more strenuous. Right amount of fund, if raised in a structure not suitable for business, may become a reason for business failure.

Business environment is continuously and rapidly evolving. Increase in competition is at its peak, as technology has made customers and consumers more aware and now they enjoy a wider choice. During old times, competition was less, customer or consumers had limited information and reach to the market and profit margins used to be much better. It was more of a region based business and regional player used to enjoy better reach to the market because of their long standing goodwill and relations. In today's scenario, the mantra to be profitable is not by increasing the selling price of the product but to focus on reducing the cost and introducing more efficiency in your system and processes. The same can be achieved by identifying multiple sources of raw material suppliers (both domestic and international), installing efficient machines to improve quality and reduce cost, introducing new and relevant product in the market through R&D, introducing better technology by doing global tie

ups, reducing wastage by having a cost monitoring system in place, training the man power for improving efficiency and productivity and so on. Change is the only constant in modern business world.

"He who has wealth has friends and relations; he alone survives and is respected as a man." – Chanakya. SMEs are so passionate about their business that they focus mostly on running and growing business but they miss on creating wealth. One adverse phase in business cycle or contingency like Covid or natural calamity like Tsunami/Amphan/Earthquake or unfortunate event like fire can recede business growth or can even force them to shut. One must simultaneously focus on building of wealth. Large Corporate houses such as TATA, Reliance, Birla, Godrej all have their family offices and treasury department in place. It helps them to plan better for any contingency which may come. These treasury department helps them to even raise funds when needed including taking up of any new ambitious project. IPO is another way of unlocking wealth and requires long term planning.

Life allows everyone to fail once or multiple times before one rises again, be it any field such as sports, entertainment, academics, research, politics or art. Similarly, when a business fails despite genuine efforts, entrepreneurs should not be put under pressure from society, legislation or peers. This pressure in turn creates burden on business owner to continue putting all their efforts and resources in attempting to make an unsustainable business sustainable. All the developed countries have all the legislations in place to safeguard the entrepreneur and their spirit for genuine business failure. India has also introduced legislation to safeguard entrepreneurs against such failure and the same is evolving with time. These legislations help entrepreneur to save their resources and also helps nation to save productive years of an entrepreneur. Hence, I would like to conclude by advising SME entrepreneurs that "Business may fail but Entrepreneur Spirit must not fail" and that "Good Money should not chase Bad and non-sustainable Business."

Plastic Banks in School, Colleges and Towns – Creating Impact and Waste Behaviour Change



Dr. Sanjay K Gupta
Senior Advisor and Consultant

Plastic pollution is a significant global environmental issue, with detrimental effects on ecosystems, wildlife, and human health. Educational institutions, as centers of learning and community engagement, play a crucial role in addressing this challenge. Establishing Plastic Banks in educational institutions and communities offers numerous benefits, contributing to both environmental sustainability and educational enrichment and empowerment. Plastic pollution crisis requires innovative solutions and concerted efforts to manage which unfortunately has not yet picked up to the desired pace. Plastic Banks helps in effective plastic waste segregation and clean recovery and these are very crucial strategies in combating this issue as well as for cleaner recycling and circular economy. They offer significant environmental, economic, and social benefits by ensuring that plastic waste is managed sustainably and efficiently.

Plastic has been an integral part of our daily lives and a world without it seems unimaginable. From 1950 till now, the world has produced a whopping 9 trillion kilograms of plastics. Of this, about 6.3 trillion kilograms have become waste. Researchers predict that we will be living with 26 trillion kilograms of plastic waste by 2050. This means that there will be more plastic than fish in the ocean if not enough and urgent actions are taken to solve the problem, endangering over 800 species, including us. Today, from mother's milk, to human excreta to food we eat and bottled water we drink, almost all have micro-plastics in it with some known and some unknown impact on our health and environment.

Setting up Plastic Banks in educational institutions and neighborhoods is a significant step towards addressing plastic pollution, promoting contributing to circular economy leading to sustainability. The environmental, educational, economic, and health benefits make it a valuable initiative for schools and colleges for waste Behaviour change. By fostering a culture of responsibility and stewardship among young people, educational institutions can lead the way in creating a more sustainable future through cleaner recovery of plastics.

More than 50 schools in Assam have set up these Plastic Banks promoting the habit of segregation and creating awareness on plastic pollution. The Learners' High School in Doomdooa has perhaps one of the best waste management systems placed in its



school campus. Apart from this schools, 5 schools in Tinsukia town, around 12 in Guwahati have also adopted the plastic bank concept. Most of these schools set up three Waste to Resource Bank namely Plastic Bottle Bank, Plastic Package Bank and Paper Bank in its campus to promote clean segregation. Through these transparent bins, students are asked to drop their waste accordingly which is either generated within the campus or also brought from home. Some of the schools have also a compost pit where all the organic waste comprising of food waste and leaves are composted so that all students and parents can see that there need not be any waste dumped but all of it can be turned into recycling material or composted to in more meaningful ways.

The school staff of Learner' says, "Plastic banks are a very effective way of promoting clean segregation by placing these in well designed and very transparent bins". In fact, all the schools and colleges like Senairam High School, Sarvajani Vidyalaya and Bongiya Vidalaya, Tinsukia College, Tinsukia Commerce College and Tinsukia Women's College all have plastic banks and collect over 70-80000 pieces per month and send it for recycling or energy recovery. During last World Environment Day over 1.2 lakh pieces of plastics were collected in Tinsukia district and channelized for recycling and energy recovery. These plastic pieces have been cleanly collected from them which otherwise would have ended in drains or streets creating filth in towns.

Ther former Chief Minister of Assam Sri Sarbananda Sonowal was the first to inaugurated such a system

in Assam on 17th September, 2019. Since then, it has been replicated by many environmental and Swachh Bharat Volunteers in different places, in fact many neighborhoods and small towns in Nagaland and Arunachal Pradesh also set up the Plastic Bank Concept, a metallic transparent bin for public to deposit their plastic bottle in various towns of North East including several towns in Arunachal Pradesh. In Pamohi village near Guwahati, capital of Assam, villagers once burned the plastic toxic waste as fuel, but a pioneering couple's radical education model uses it much more creatively. Akshar School, has turned its pupils into eco-warriors by waiving school fees in lieu of plastic collection and helping to stop local people burning used plastic and channelizing them for both recycling and upcycling.

A group of students when asked about describing the Plastic Banks concept, they stated that, this provides a practical, hands-on learning opportunity for students and staff to understand waste management, recycling processes, and environmental conservation. They further stated that educational programs and campaigns associated with Swachh Bharat Mission and the Plastic Banks can enhance students' knowledge and foster a culture of environmental responsibility leading to carry on of these waste behaviour into neighbourhood and communities. Regular use of Plastic Banks can instil positive waste disposal habits among students, staff, and the wider community. Over time, this can lead to a broader cultural shift towards more sustainable practices in daily life with regard to waste behaviour.





We can imagine a world where the informal sector – which is the backbone of the recycling in India and other developing countries as well, these informal communities can thrive by bringing these materials for proper recycling and input it for circularity. Currently there are several social enterprises committed to helping humanity win the battle against plastic pollution and poverty. An organization called Plastics for Change has been helping informal sector recyclers through ethical procurement of plastic by providing them premium on their recovery. Similarly, organizations like Hasiru Dala and Swachh Cooperative have been organizing informal sector recyclers and organizing them into cooperatives and developing them as entrepreneurs.

These collective initiatives by various types of organizations don't just clean the environment; they uplift communities, foster circular economy, and lay the foundation for true Behaviour change for a cleaner world. We must ensure that such organization working with some of the world's most progressive companies committed to creating change, offsetting their plastic footprint, and empowering the regenerative future. Together, we

are empowering the Social Recycling movement, Circular economy as well as contributing to Swachh Bharat Mission.

It will be pertinent to mention here that with the urgency of the situation, 193 UN member states have agreed to start negotiations in 2023 to create a legally binding global treaty to curb plastic pollution. This treaty expected to gather all nations to address the full lifecycle of plastic, including production, design, and disposal, as well as the design of reusable and recyclable products and materials. Several large private organizations are also contributing their efforts to turn the tide on plastic pollution. The social enterprise like Plastics for Change and Plastic Bank, for example, drive a purposeful movement that is stopping ocean plastic and alleviating poverty through social and ethical recycling. It is important to understand that most of the plastic waste that leaks into our ocean comes from various countries through transboundary movement and impacts poorer countries more than the rich countries. To solve pollution, we have to look upstream and alleviate the skills of informal sector who primarily recover most of the plastics being recycled today.

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The Déjà vu in SUPPLY CHAIN



Sushil Dugar
Chief Operating Officer
SBU – Logistics Services
Balmer Lawrie & Co Ltd
(A Govt. of India Enterprise)

Sushil Dugar is a seasoned professional who was awarded the “Dynamic Logistics Professional of the year” at the Eastern Star Awards 2024 in January 2024 has more than 29 years of Experience in Various Industries in the field of Sales, Marketing, Operations, Business Development out of which 19 years have been in various facets of the Logistics Domain including CFS Operations & sales, Freight forwarding and handling various cargoes/consignments using multimodal transport.

It was sometime in March 2020 that COVID-19 started creating havoc across the world. The entire world crippled, and the supply chain was no exception. This continued for about 18 months of floating traffic jams of ports leading to the multiplying costs of moving freight. The resulting shortages of goods due to gaps and inflated costs in the supply chain led to an escalation in costs beyond comprehension.

We are now in the middle of 2024 and are again facing a similar crisis, albeit for reasons completely different from the pandemic. First, a severe drought in Central America dropped water levels in the Panama Canal, forcing authorities to limit the number of ships passing through that crucial conduit for international trade. Then came the Israel-Hamas war, and in late 2023, the Houthi rebels in Yemen began firing on ships entering the Red Sea, a crucial maritime route connecting the Mediterranean Sea to the Indian Ocean, a vital artery for vessels moving between Asia, Europe, and the East Coast of the United States. That prompted ships to avoid the waterway, instead move the long way around Africa, thus, lengthening their journeys by as much as two weeks, significantly impacting international freight and logistics operations.

The geopolitical issues in the Red Sea region have had a direct impact on international freight and

logistics operations. Shipping companies are forced to reroute vessels, leading to longer transit times and increased fuel costs. Moreover, the heightened security risks have compelled companies to invest in additional security measures to protect their assets and ensure the safety of their crew members.

The uncertainty and instability in the region have also made it challenging for companies to predict and plan for potential disruptions. Delays in cargo shipments, damage to goods, and higher insurance premiums are some of the consequences that businesses have had to contend with, affecting supply chain efficiency and overall costs.

Transshipment delays and port congestion are causing supply chain disruptions all over. Main line operators are not accepting cargo to some US ports and some European ports to ease out the traffic which is already in turmoil. Space constraints in the vessels have led to a spurt in freight rates. Equipment imbalance, pile-up of units in transshipment hubs, and berthing delays of vessels are visible at almost all the major ports across the Globe.

Global port congestion has reached an 18-month high, with almost 60 per cent of the ships waiting at anchor located in Asia, according to the data released by maritime data firm Linerlytica. Ships with a total combined capacity of over 2.4 million twenty-foot equivalent container units (TEUs) were waiting at anchorages as of mid-June, signifying the vastness of the turmoil.

India is no exception and is heavily reliant on the Red Sea for its movement to Europe and, to some extent, the USA. The disruptions have led to delays of 3-4 weeks or more for most ships with India as a destination or as an origin point. Most of these cargos are transhipped at ports of Singapore, Port Kelang and Colombo. This crisis has led to the clustering up of container vessels outside one of the world's busiest maritime trade hubs. Vessels are waiting for berths for more than 7 days outside the Singapore Port, whereas they would normally berth in a day or two.

The resultant impact of this crisis is that we are in a déjà vu of the supply chain crisis we faced during the peak of the COVID-19 pandemic. The freight rates have already crossed 3-4 X of what they were in mid-2023. The combined impact of higher freight costs, insurance premiums, and longer transit times has led to an increase in the cost of various goods, including polymers. The crisis has been particularly hard on India's small and medium-sized businesses, particularly those engaged in EXIM trade. The repercussions of the Red Sea crisis have been profound and can be categorized into:

- ▶ **Supply Chain Disruptions:** Delays of several weeks in shipments have become commonplace, affecting industries ranging from textiles and automotive parts to pharmaceuticals and electronics.
- ▶ **Logistical Challenges:** Ports crucial for transshipment and connectivity, such as Singapore, Port Kelang, and Colombo, have seen congestion due to the rerouting of ships. This bottleneck has resulted in extended waiting times for vessels, exacerbating logistical challenges for Indian exporters.
- ▶ **Rising Costs:** The longer transit routes necessitated by the crisis have led to increased freight rates by almost 3 to 4 times and higher insurance premiums. This cost escalation has squeezed profit margins for businesses engaged in international trade, particularly small and medium-sized enterprises (SMEs) heavily reliant on competitive pricing.

To address these challenges posed by this crisis, I believe that Indian businesses may have to adopt proactive measures like:

- ▶ Exploring diversified shipping routes to reduce dependency on disrupted channels and minimize transit risks.
- ▶ Embracing advanced technologies for real-time cargo tracking and monitoring to enhance operational visibility and responsiveness.
- ▶ Conducting rigorous risk assessments and scenario planning to anticipate and mitigate potential disruptions.
- ▶ Strengthening partnerships with local authorities, international agencies, and logistics providers to navigate the security concerns.

In conclusion, the ongoing supply chain disruptions triggered by geopolitical instability in the Red Sea region have underscored the fragility and interconnectedness of global trade networks. Indian businesses, particularly SMEs, are bearing the brunt of increased costs and prolonged delays. However, by leveraging advanced technologies, diversifying trade routes, and fostering robust international collaborations, I strongly feel that companies can navigate these turbulent waters more effectively.

While the challenges are significant, they also present an opportunity for innovation and resilience in supply chain management. As the world moves forward, it is crucial for stakeholders across the spectrum to work collaboratively towards creating a more adaptive and resilient global trade ecosystem, ensuring that the lessons learned today pave the way for a more secure and efficient tomorrow.



PLEXCONNECT

PLEXCONCIL'S COLLABORATIVE APPROACH CATALYZES BUSINESS OPPORTUNITIES IN **PLASTICS EXPORTS**

In the dynamic landscape of global trade, Export Promotion Councils like the Plastics Export Promotion Council of India (PLEXCONCIL) play a pivotal role in bridging the gap between the plastics manufacturing industry and government entities. Focusing on international trade, PLEXCONCIL serves as a conduit for dialogue, advocacy, and support, ensuring the smooth functioning of this vital sector.

Let's delve into the multifaceted contributions of PLEXCONCIL in fostering growth, facilitating market access, and promoting excellence within the plastics manufacturing ecosystem.

One of PLEXCONCIL's primary objectives is to provide unwavering support to its expansive network of over 3,000 member exporters. Through various initiatives, including market research, organizing India Pavilions at renowned international plastics expos, Reverse Buyer Seller Meets, leading trade delegations, policy advocacy, and redressals, PLEXCONCIL assists its members in navigating the complexities of global markets. By offering crucial insights, facilitating business connections, and disseminating market intelligence, PLEXCONCIL empowers its members to seize opportunities and overcome challenges in diverse international markets.

Emphasizing innovation and adaptability, PLEXCONCIL continuously evolves its approach to meet the dynamic needs of exporters and uphold the Indian plastics export industry's reputation as the world's leading hub for sourcing plastics. Through a range of innovative initiatives, PLEXCONCIL aims to enhance the competitiveness and sustainability of its members on the global stage.

Plexconcil's Global Outreach

PLEXCONCIL promotes Indian plastic exports globally, targeting key markets such as the USA, EU, Middle East, Southeast Asia, Africa, Latin America, and Oceania. The USA offers opportunities in packaging, automotive, consumer goods, and construction. The EU market is lucrative for automotive components, medical devices, and industrial applications. The Middle East demands plastics for construction, packaging, and consumer goods. Southeast Asia's expanding markets include packaging, electronics, and automotive components.

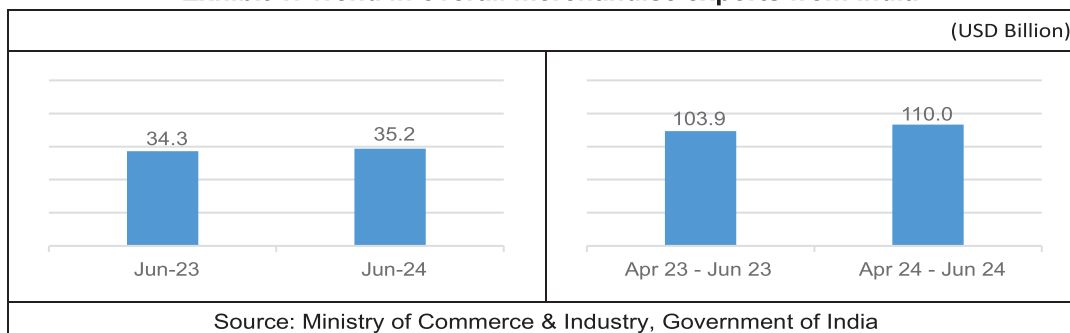


Africa's industrial growth fuels demand in construction, agriculture, and consumer goods. Latin America, with countries like Brazil and Mexico, seeks plastic in automotive parts, packaging, and construction. Oceania, comprising Australia and New Zealand, offers prospects in packaging and automotive sectors. PLEXCONCIL aids exporters in understanding market nuances, regulations, and consumer preferences, facilitating successful market entry and expansion through valuable insights, networking, and promotional support.

TREND IN OVERALL EXPORTS

India reported merchandise exports of USD 35.2 billion in June 2024, higher by 2.6% from USD 34.3 billion in June 2023. Cumulative value of merchandise exports during April 2024 - June 2024 was USD 110.0 billion as against USD 103.9 billion during the same period last year, reflecting a growth of 5.8%.

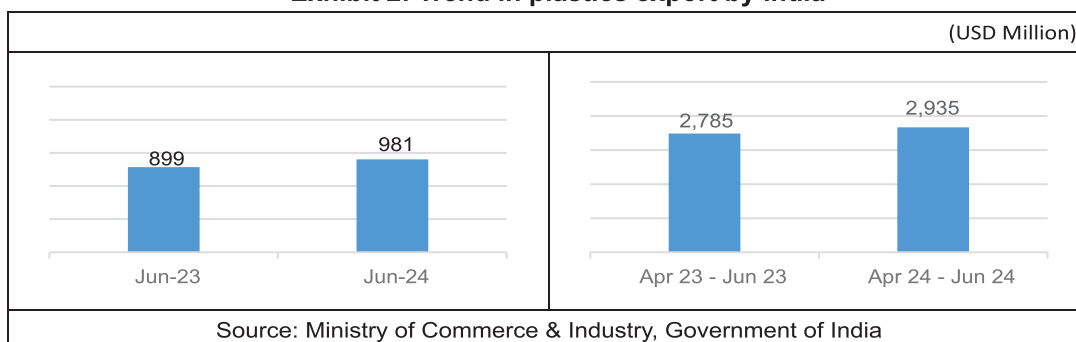
Exhibit 1: Trend in overall merchandise exports from India



TREND IN PLASTICS EXPORT

During June 2024, India exported plastics worth USD 981 million, higher by 9.2% from USD 899 million in June 2023. Cumulative value of plastics export during April 2024 - June 2024 was USD 2,935 million as against USD 2,785 million during the same period last year, registering an increase of 5.4%.

Exhibit 2: Trend in plastics export by India



PLASTICS EXPORT, BY PANEL

In June 2024, export performance across various product categories continued to show substantial growth, with Plastic films and sheets achieving the highest surge, followed by FIBC, woven sacks, woven fabrics, tarpaulin; Floorcoverings, leathercloth & laminates; FRP & Composites; Packaging items flexible, rigid; Consumer & houseware products; Cordage, fishnets & monofilaments; Medical items of plastics; Plastic pipes & fittings; Plastic raw materials; and Human hair & related products

However, product panels like Writing instruments & stationery; and Miscellaneous products and items nes reported a negative growth in exports.

Exhibit 3: Panel-wise % growth in plastics export by India

Panel	Jun-23	Jun-24	GROWTH	Apr 23	Apr 24	GROWTH
	(USD Mn)	(USD Mn)	(%)	Jun-23	Jun-24	(%)
Consumer & houseware products	58.7	63.1	+7.5	179.3	185.7	+7.5
Cordage, fishnets & monofilaments	18.9	23.3	+23.1	63.9	68.3	+23.1
FIBC, woven sacks, woven fabrics, & tarpaulin	97.1	111.4	+14.7	303.3	339.3	+14.7
Floorcoverings, leathercloth & laminates	56.1	62.6	+11.5	161.2	180.6	+11.5
FRP & Composites	36.3	42.2	+16.4	106.4	127.1	+16.4
Human hair & related products	54.2	65.7	+21.1	183.4	181.8	+21.1
Medical items of plastics	43.6	47.4	+8.5	130.9	133.6	+8.5
Miscellaneous products & items nes	67.3	56.5	-16.0	226.0	161.0	-16.0
Packaging items - flexible, rigid	49.3	54.0	+9.5	144.9	160.0	+9.5
Plastic films & sheets	127.9	162.9	+27.4	403.2	503.7	+27.4
Plastic pipes & fittings	20.8	23.6	+13.7	66.2	70.5	+13.7
Plastic raw materials	246.4	248.6	+0.9	749.1	759.4	+0.9
Writing instruments & stationery	22.1	19.7	-10.6	67.7	64.3	-10.6
	898.6	980.8	+9.2	2,785.4	2,935.2	+9.2

Source: Ministry of Commerce & Industry, Government of India



Exports of **Consumer & houseware products** witnessed a growth of 7.5% in June 2024 on account of higher sales of Builders ware of plastics nes (HS code 392590); Plastic moulded suit cases (42021220) and Other switches of plastic (85365020). Exports of Other switches of plastics reached an all-time high yet again in June 2024 due to strong sales to Germany.

Exports of **Cordage, fishnets & monofilaments** were up by 23.1% in June 2024 due to positive growth witnessed in sales of Twine, cordage, ropes and cable of plastics (56079090) and Made-up fishing nets (560811). During June 2024, India reported its highest monthly export of Twine, cordage, ropes and cable of plastics in as many as 36 months. Additionally, India's made-up fishing nets seem to be doing well in the Middle East (especially Saudi Arabia, Oman, and the UAE); and Russia.

In June 2024, the export of **FIBC, woven sacks, woven fabrics, & tarpaulin** showed an optimistic growth of 14.7% due to higher sales of Other sacks and bags of plastics (39232990) and Flexible intermediate bulk containers (630532). This segment has shown significant improvement so far in the current financial year, compared to the same period last year.

Export of Floor coverings, leather cloth & laminates were higher by 11.5% during June 2024 on account of improved sales of PVC floor coverings (39181090); and Textile fabrics impregnated, coated, covered or laminated with plastics (590390) to the United States of America.

Export of **FRP & Composites** witnessed a substantial growth of 16.4% during June 2024. This notable increase was due to higher exports of articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s (39269099).

Export of **Human hair & related products** increased by 21.1% in June 2024 on account of a significant increase in sales of Human hair, unworked (05010010) to Myanmar and Human hair, dressed, thinned and bleached (67030010) to Viet Nam and China and also due to the price improvements.

Medical items of plastics exports were also higher by 8.5% in June 2024 due to a rise in sales of Syringes with or without needles (901831); Cannulae (90183930) and Blood transfusion apparatus (90189032).

Export of **Miscellaneous products & items nes** plunged by 16.0% in June 2024 due to lower shipments of optical fibres, optical fibre bundles and cables (90011000).

Packaging items - flexible, rigid export increased by 9.5% on account of higher sales of Sacks and bags of polymers of ethylene (392321); and Other articles for the conveyance or packing of goods (392390) to the traditional markets, particularly, the USA.

In June 2024, the export of **Plastic films & sheets** was higher by 27.4% due to increased sales of Self-adhesive tapes & films (391990); Films & sheets of polymers of propylene (392020); Films & sheets of polyethylene terephthalate (392062); Films and sheets of non-cellular polyester (39206929) and other films and sheets of plastics (392190). Indian manufacturers of plastic films and sheets have indicated that BOPP margins have now stabilized. They are anticipating improved sales of Specialty BOPP film from all around USA, Europe, Russia, China, and the Middle East.

Export of **Plastic pipes & fittings** strengthened by 13.7% as increased sales of Other Tubes of other plastics (391729) and Flexible tubes of plastics (391731) supported the growth.

Plastics raw materials exports were higher by 0.9% as increase in shipment of Ethylene-alpha-olefins copolymers (390140); and Other polyethers n.e.s (39072990); was offset by lower sales of Polyethylene (390110); and Polyethylene terephthalate (390761, 390769).

Export of **Writing instruments & stationery** declined by 10.6% in June 2024 due to lower sales of office or school supplies of plastics (39261099); Ball point pens (960810); and Felt-tipped and other porous-tipped pens and markers (960820).

Exhibit 4: Details of % change seen in top 50 items of export

HS Code	Description	Apr 23- Jun 23	Apr 24- Jun 24	Growth
		(USD Mn)	(USD Mn)	(%)
63053200	Flexible intermediate bulk containers	181.6	195.7	+7.8
67030010	Human hair, dressed, thinned, bleached or otherwise worked	131.6	141.1	+7.3
39269099	Other articles of plastics n.e.s	105.3	125.5	+19.2
39232990	Other sacks and bags of plastics excl. those of polymers of ethylene	92.1	105.9	+15.0
90011000	Optical fibres, optical fibre bundles and cables	150.3	70.7	-53.0
39021000	Polypropylene	98.1	100.2	+2.1
39076190	Other primary form of polyethylene terephthalate	101.5	63.6	-37.4
48239019	Decorative laminates	71.1	74.7	+5.0
39269080	Polypropylene articles n.e.s	48.4	61.2	+26.4
39206220	Flexible and plain sheets and film of non-cellular polyethylene terephthalate, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked	46.9	71.5	+52.4
39069090	Other acrylic polymers, in primary forms	40.1	50.1	+24.8
39232100	Sacks and bags, incl. cones, of polymers of ethylene	44.2	48.4	+9.4
39202020	Flexible and plain sheets and film of non-cellular polymers of ethylene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked	55.0	63.3	+15.0
39239090	Other articles for the conveyance or packaging of goods, of plastics	43.9	49.7	+13.3
59039090	Other textile fabrics impregnated, coated, covered or laminated with plastics other than polyvinyl chloride or polyurethane	40.8	54.1	+32.7
05010010	Human hair, unworked	45.4	39.8	-12.4
90015000	Spectacle lenses of materials other than glass	41.9	42.5	+1.4
39202090	Other sheets and film of non-cellular polymers of ethylene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked	36.2	41.7	+15.2
39012000	Polyethylene with a specific gravity of ≥ 0.94 , in primary forms	23.7	27.6	+16.5
39076990	Other primary form of polyethylene terephthalate	45.0	26.8	-40.4
96081019	Ball-point pens	33.7	32.3	-4.3
90183930	Cannulae	33.0	32.2	-2.5
39014010	Linear low-density polyethylene (LLDPE)	19.3	45.9	+137.6
39046100	Polytetrafluoroethylene	31.9	29.7	-6.7
39219099	Other sheets and film of plastics, reinforced, laminated, supported or similarly combined with other materials, unworked	26.5	35.4	+33.6
39199090	Other self-adhesive sheets and film of plastics, whether or not in rolls > 20 cm wide	21.7	27.5	+26.5
56074900	Twine, cordage, ropes and cables of polyethylene or polypropylene	27.4	27.3	-0.3
54072090	Other woven fabrics of strip or the like, of synthetic filament, incl. monofilament of ≥ 67 decitex and with a cross sectional dimension of ≤ 1 mm	23.1	31.2	+34.8
39129090	Other cellulose and chemical derivatives thereof, n.e.s., in primary forms	24.9	26.5	+6.4



HS Code	Description	Apr 23- Jun 23	Apr 24- Jun 24	Growth
		(USD Mn)	(USD Mn)	(%)
39241090	Other tableware and kitchenware, of plastics	23.1	24.8	+7.5
39011090	Other polyethylene with a specific gravity of < 0.94, in primary forms	28.8	19.8	-31.4
39119090	Other polysulphides, polysulphones and other polymers and prepolymers produced by chemical synthesis, n.e.s.	23.8	20.7	-13.3
39206919	Other sheets and film of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials, not worked	20.4	21.7	+6.3
90041000	Sunglasses	0.8	0.6	-26.6
39046990	Other fluoro-polymers of vinyl chloride or of other halogenated olefins, in primary forms	22.4	25.2	+12.5
39181090	Other floor coverings, whether or not self-adhesive, in rolls or in the form of tiles, and wall or ceiling coverings in rolls with a width of >= 45 cm, of polymers of vinyl chloride	16.0	23.9	+49.9
39219094	Flexible and metallised sheets and film of plastics, reinforced, laminated, supported or similarly combined with other materials, unworked	21.5	26.4	+22.6
39140020	Ion exchangers of polymerisation or co-polymerisation type	19.1	23.6	+23.5
39095000	Polyurethanes	20.9	21.3	+2.2
96032100	Tooth brushes	22.6	17.2	-24.1
39204900	Sheets and film of non-cellular polymers of vinyl chloride, containing by weight < 6% of plasticisers, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked	19.0	18.5	-2.8
39206290	Other sheets and film of non-cellular polyethylene terephthalate, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked	15.7	24.6	+56.6
59031090	Other textile fabrics impregnated, coated, covered or laminated with polyvinyl chloride	19.8	19.0	-4.1
39201019	Other sheets and film of non-cellular plastics, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked	17.5	20.4	+16.6
39172390	Other rigid tubes, pipes and hoses, and fittings of polymers of vinyl chloride	15.1	14.8	-1.7
39235010	Stoppers, lids, caps and other closures, of plastics	17.4	19.8	+13.8
39219096	Flexible and laminated sheets and film of plastics, reinforced, laminated, supported or similarly combined with other materials, unworked	14.3	19.0	+33.2
39249090	Other household articles and toilet articles of plastics	18.2	15.5	-14.7
39206929	Other sheets and film of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials, not worked	13.4	24.5	+83.4
39073010	Epoxy resins	15.0	15.8	+5.6

Source: Ministry of Commerce & Industry, Government of India

----- End of report -----

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RAJ JAIN

India's future growth prospects are buoyed by its demographic dividend, robust service sector, and proactive economic reforms. The expanding middle class and rapid urbanization drive domestic consumption and attract significant investments. These factors are set to positively impact the plastic industry by increasing demand for plastic products in sectors such as packaging, construction, automotive, consumer goods, and more. Government initiatives promoting sustainability and advanced manufacturing technologies will foster innovation in bioplastics and recycling, positioning India's plastic industry for sustainable growth in the global market.

Global companies seek to diversify supply chains to reduce dependence on China, and India, with its large labour force and competitive costs, is positioned as an attractive alternative. India's strategic geopolitical positioning and strong relationships with Western countries provide opportunities for economic collaboration, trade agreements, and investment inflows, further boosting growth prospects.

Among the BRIC nations, India stands out for its robust service sector, demographic advantage, and ongoing economic reforms. While challenges in infrastructure and energy dependency persist, India's strategic initiatives and growth potential position it as a key player in the global economy.

Polymer PRICE TRENDS

To become a manufacturing hub, India can leverage its unique advantages and address existing challenges through targeted strategies such as:

1. Infrastructure Development: Improving transportation, logistics, and utilities to support industrial growth.
2. Ease of Doing Business: Simplifying regulatory processes and reducing bureaucratic hurdles.
3. Labor Market Reforms: Enhancing labor laws to improve flexibility and productivity.
4. Incentives and Support for Manufacturing: Offering tax incentives, subsidies, and financial support to attract investments.
5. Trade Policies and Market Access: Negotiating favorable trade agreements and improving market access.
6. Adoption of Advanced Technologies: Promoting the use of Industry 4.0 technologies to enhance manufacturing efficiency.
7. Fostering Innovation and Entrepreneurship: Supporting startups and innovation ecosystems.
8. Strengthening Supply Chains: Building resilient and efficient supply chains to reduce dependency on imports.
9. Marketing and Branding: Promoting India as a global manufacturing destination.

The plastic industry's future in India looks promising, driven by several trends and developments:

1. Biodegradable and Bioplastics: Increased use of bioplastics made from renewable resources like corn starch, sugarcane, and algae as alternatives to conventional plastics.
2. Recycling and Circular Economy: Advances in recycling technologies and adoption of closed-loop systems to support a circular economy model.
3. Smart Plastics and Advanced Materials: Growth in the use of functional additives providing antimicrobial properties, UV resistance, and other benefits, as well as smart plastics embedded with sensors for various applications.
4. Lightweight and High-Performance Plastics: Increased demand for lightweight, durable plastics in the automotive, aerospace, construction, and infrastructure industries.
5. Medical and Healthcare Innovations: Continued growth in the use of plastics for medical devices, implants, and disposable supplies, as well as 3D printing for customized medical products.

By focusing on these trends, the future use of plastics in India is expected to evolve towards more sustainable, innovative, and high-performance applications, balancing the benefits of plastic materials with environmental protection.



ONE STOP SOLUTION FOR EPR

Providing EPR services to various PIBOs and PWP's

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PROPER COMPLIANCE & AUDITS



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What is EPR?

Extended Producer Responsibility (EPR) is an environmental policy.

The responsibilities of PIBO's [Producer, Importers & Brand Owners] have been extended to collect back the plastics which they have pumped into the Indian market along with their product, in the form of plastics or plastic packaging.

Recycling simplified

We help you to make a shift from the "take-make-waste economy" to a more 'circular economy'



Industry best EPR solutions to PIBO's & PWP's



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IPF – KNOWLEDGE CENTRE

In the year 2005, the Office Bearers & Executive Committee conceived a grand vision to develop a Poly Park along with IPF-Knowledge Centre that would bring together various Plastic Processing Industries under one roof, offering immense opportunities and benefits to society. After a careful search, the ideal location for this ground-breaking initiative was identified within close proximity to several functional plastic processing units, thereby providing an edge to the planned Poly Park.

It was decided that one acre of land would be reserved by the Indian Plastic Federation for basic industrial training or knowledge development of industrial workers, where certificates would be given upon completion of training, ensuring that they are industry-ready and capable of contributing to the sector's growth. This visionary concept gave birth to the IPF Knowledge Centre, a place of learning and innovation that would serve as a beacon for aspiring industrial workers.

The year 2013 saw the land for the Poly Park allocated by the West Bengal Industrial Development Corporation, and the ground-breaking ceremony was conducted in 12th February 2014. Many past presidents and other executive members were entrusted with the responsibility of overseeing the construction of the IPF-KC which was accepted whole heartedly by the members and rose to the challenge admirably. In 2018, I was appointed as Co-Chairman with Past President J C Agarwal as Chairman, and together, we steered the project to completion.

The IPF-Knowledge Centre was inaugurated in 2019, but due to the Covid outbreak in the early months of 2020, negotiations with many training partners and programs were delayed, and

everything came to a standstill. Nevertheless, as the saying goes, there is a blessing in every disguise, and the IPF-KC emerged as a massive help to the Plastic Industry during the pandemic. The IPF KC served as a vaccination centre for industrial workers, with more than 5000 of them receiving both doses of the vaccine over a five-day period. The presence of IPF office-bearers and committee members boosted the morale of working members, who were facing significant challenges due to the pandemic.

In 2022, the IPF-KC was officially inaugurated, by the present Office Bearer & Executive Committee and team, along with past presidents and IPF members, gracing the occasion. Past presidents and members were thrilled to see the impressive infrastructure built and maintained by Knowledge Centre Committee. The IPF KC stands on one acre of land, with 50% reserved for a lush green open lawn showcasing functional sprinklers, drip irrigation, and a greenhouse. Equipment for rainwater collection and usage has been installed. The RCC building, which is 10000 sq ft, has a G+1 structure, with ready Classroom, Tool Room, Machine showcase area along with Office Rooms etc with all the modern facilities necessary for a teaching institute.

We are currently in discussions with various organizations to begin development and training courses and will soon present our proposals to our members. Further I also request people from Industry to come forward with ideas to make this noble venture a success story.

Jai Hind!

SAURABH GARODIA

Hony Joint Secretary

IPF KNOWLEDGE CENTRE



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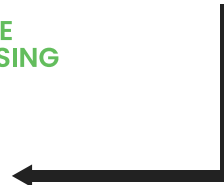
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RECYCLING FACILITY



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EPR Target Fulfillment through EPR
credits on CPCB portal

For more details, connect with us at



IPF HOLI MEET

हर वर्ष की भांति इस वर्ष भी होली मिलन सम्मेलन का आयोजन "होली के रंग अपनों के संग" के नाम से होली के शुभ अवसर पर दिनांक 19 मार्च, 2024 को गणपति बैक्चेट, बालीगंज पार्क में आयोजित किया गया। इसी मंच पर श्री आलोक टीबरेवाल को PLASTINDIA का अध्यक्ष एवम श्री अशोक जाजोदिया को उपाध्यक्ष चुने जाने पर सम्मानित किया गया। यह हमलोगों के लिए अत्यंत ही गौरवपूर्ण क्षण थे क्योंकि दोनों ही महानुभाव पूर्व में IPF के अध्यक्ष पद को भी सुशोभित कर चुके हैं। इस कार्यक्रम के तहत एक कवि सम्मेलन का भी आयोजन किया गया जिसमें श्री चिराग जैन, श्री शंभु शिखर, श्री विनीत चौहान, श्री अरुण जैमिनी जैसे सुप्रसिद्ध कवियों एवम सुश्री मनीषा शुक्ला जैसी प्रवीण कवियत्री ने अपने काव्यपाठ से आमंत्रित सदस्यों का मन मोह लिया। हर बार की तरह ही कार्यक्रम का समापन रात्रिभोज के साथ सम्पन्न हुआ। संपूर्ण कार्यक्रम में IPF के सदस्यों ने परिवार सहित शामिल होकर कार्यक्रम की शोभा में चार चांद लगा दिए।





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SPORTS CARNIVAL 2024

On the 13th of April 2024, the Indian Plastics Federation (IPF) organized a vibrant sports carnival at the prestigious Space Circle Club. This event was marked by enthusiasm and high spirits, drawing over 200 members who eagerly participated in various sporting events.



The carnival featured a diverse lineup of games, including Cricket, Carrom, Table Tennis, and Darts. Each game was designed to cater to different interests and skill levels, ensuring that there was something for everyone. The cricket matches were particularly intense, showcasing impressive teamwork and sportsmanship. Meanwhile, the Carrom boards were surrounded by focused players demonstrating their precision and strategy. Table Tennis brought out the agility and quick reflexes of the participants, while Darts tested their aim and concentration.

The sports committee of IPF, with meticulous planning and dedication, ensured that all arrangements were top-notch. Participants were treated to a delightful spread of meals throughout the day, with breakfast, lunch, and dinner meticulously planned to cater to the diverse tastes of the attendees. The meals provided not only nourished the participants but also offered an opportunity for socializing and networking, fostering a sense of community among the members.

The event was made possible with the generous sponsorship from notable organizations. Glen Industries, Ddev Plastiks, Kushal Bharat, Malsons and Shri Maa Group stepped up as team sponsors, contributing to the success of the carnival. Their support was instrumental in providing the necessary resources for the event, from sports equipment to the delightful meals enjoyed by all.

As the games progressed, it became evident that the competitive spirit was alive and well among the participants. Each game saw its champions, who were celebrated in a grand award ceremony at the end of the day. The winners were not only given trophies as a mark of their achievement but also received cash prizes, adding a tangible reward to their hard-earned victories. The award ceremony was a highlight, with cheers and applause filling the air as each winner stepped up to receive their prize.

Beyond the competitive aspect, the carnival was an excellent opportunity for members to enjoy themselves and unwind. The atmosphere was filled with camaraderie and joy, as members relished the chance to engage in friendly competition and build stronger bonds with one another. The laughter and cheers were a testament to the fun and enjoyment experienced by all present.

In conclusion, the sports carnival organized by the Indian Plastics Federation at the Space Circle Club was a resounding success. With over 200 members participating, the event was a lively and engaging affair. The meticulous arrangements made by the sports committee, coupled with the generous sponsorship from Glen Industries, Ddev Plastiks, Kushal Bharat, Malsons, and Shri Maa Group, ensured that the day was memorable for everyone involved. The winners were rightfully celebrated, and the event fostered a sense of community and enjoyment among the members. It was a day filled with sportsmanship, fun, and lasting memories, showcasing the vibrant spirit of the Indian Plastics Federation.



TEAM OWNERS



A TRIUMPH WORKSHOP WITH RAHUL JAIN



"Double Your Profit" with Rahul Jain -Unlocking Business Potential

In the bustling heart of Kolkata, on the 20th of April, 2024, a transformative event unfolded at The Lalit Great Eastern. Organized jointly by the Indian Plastic Federation, Round Table India, and Ladies Circle India in association with Salasar Protection and Indemnity, the one-day workshop titled "Double Your Profit" captured the attention of industry leaders, entrepreneurs, and aspiring business owners alike.

Being the chairman of the Seminar sub-committee, Sudarshan kr. Tawri and co-chaired by Mr. Rajat Rateria & Mr. Saksham Surana, it was our responsibility & aim to turn the workshop not only to educate but to inspire actionable strategies for enhancing profitability in business ventures. From 9 AM to 6 PM, the venue buzzed with anticipation as attendees gathered to delve into the secrets of business success.

The workshop promised a deep dive into cutting-edge strategies, case studies, and interactive sessions designed to empower participants with practical insights. With a focus on leveraging market dynamics, optimizing operational efficiencies, and exploring innovative growth avenues, the event aimed to equip attendees with the tools needed to navigate and thrive in today's competitive landscape.

As the day progressed, attendees found themselves immersed in a rich tapestry of knowledge-



Engaging Sessions

Led by renowned business coach Mr. Rahul Jain, the seminar featured a series of engaging sessions that addressed key topics such as struggling with business growth, navigating cash crunches, and managing debt. Participants were captivated by Mr. Jain's practical approach, which focused on actionable strategies that can lead to transformative results. The audience was introduced to innovative methods for analyzing their existing business operations, identifying potential areas for optimization, and implementing strategic changes.

How to Double Your Profit

One of the most impactful elements of the seminar was the detailed discussion on how to double profits every year. Mr. Jain emphasized the importance of understanding market trends, improving

cost efficiency, and enhancing customer engagement. Attendees found these strategies not only practical but also highly relevant, considering the competitive landscape of today's business environment. Many expressed their excitement about applying these principles within their own organizations.

Work-Life Balance Reimagined

Another highlight of the seminar was the emphasis on achieving work-life balance while significantly increasing business returns. The concept of running business operations with a streamlined focus—working just one day a week—resonated deeply with participants. Many business owners shared their frustrations regarding the time-intensive nature of entrepreneurship, and Mr. Jain's insights offered a fresh perspective that empowered them to rethink their approach.

Networking and Collaboration

The seminar also provided ample opportunities for networking. Participants engaged in meaningful discussions, exchanged ideas, and explored potential collaborations. The collective enthusiasm and diverse experiences shared among attendees fostered a supportive community, allowing individuals to feel more connected and inspired to tackle their business challenges.

Positive Feedback

Feedback from attendees was overwhelmingly positive, with many expressing gratitude for the practical knowledge gained. Quotes from participants highlighted the seminar's impact on their business outlook: "The insights shared today have reignited my passion for my business," said one attendee, while another remarked, "I never knew it was possible to structure my operations to work just one day a week—now I can see how to implement that!"

The "Double Your Profit" seminar effectively achieved its goal of providing business owners with the tools and strategies needed to overcome stagnation and financial challenges. The event's success reflected the urgent need for such knowledge in the business community. As participants left the seminar energized and equipped with actionable plans, the organizers celebrated the achievement of bringing together a vibrant group of entrepreneurs committed to growth and innovation. Looking ahead, the Indian Plastics Federation, Round Table India, Ladies Circle India, and Mr. Rahul Jain are already exploring future events to continue supporting businesses on their journey toward prosperity.

Cordially,
Sudarshan Kumar Tawri
 Chairman, Seminar Sub-Committee



EMBRACING AI'S POTENTIAL FOR BUSINESS ADVANCEMENT



Reflecting on the recent seminar organized by the Indian Plastics Federation at Kolkata's Kenilworth Hotel on May 4, 2024, I am pleased to share insights .

This seminar was a significant milestone in our exploration of Artificial Intelligence (AI) and its profound impact on business strategies and operations.

The article encapsulates the essence of our discussions, highlighting AI's transformative power in enhancing business value across diverse industries. We delve into the fundamental principles of AI that every entrepreneur should grasp, emphasizing its practical applications and the strategic advantages it offers in today's competitive landscape.

At the heart of our discourse were compelling success stories illustrating how AI has empowered small and medium enterprises (SMEs) to achieve remarkable gains in efficiency and profitability. These case studies serve as a testament to AI's ability to drive innovation and streamline processes, enabling businesses to stay ahead in a dynamic market environment.

Furthermore, the article outlines actionable strategies discussed during the seminar to foster a culture of AI adoption within organizations. We



underscored the importance of leadership commitment, workforce readiness, and collaborative partnerships with academia and industry peers to ensure seamless integration of AI into business models.

The Indian Plastic Federation remains committed to fostering technological innovation and knowledge exchange within our community. The publication of this article signifies our dedication to bridging the gap between AI's potential and practical implementation, paving the way for sustainable growth and resilience in an increasingly digital world.

As the Chairman of the Seminar Committee, I extend my heartfelt appreciation to our co chairmen Mr.Rajat Rateria & Mr.Saksham Surana, esteemed speakers, including AI educator Ayush Banerjee, and all participants whose active engagement contributed to the seminar's success. Together, we have set a precedent for future dialogues and initiatives that will shape the future of AI-driven enterprises.

I invite readers to explore the article, where they will find firsthand insights and expert perspectives that illuminate AI's transformative journey in business. Join us as we embrace innovation and chart a course towards a future where AI propels enterprises to new heights of success and prosperity.

Thanks & Regards

Sudarshan Kr.Tawri

Chairman,Seminar sub Committee.



INTERACTIVE SEMINAR ON GST AND DISALLOWANCE FOR DELAY IN PAYMENT TO MSME



On 9th February 2024, the Indian Plastics Federation (IPF) organized a highly informative seminar on the Goods and Services Tax (GST) at Hotel Kenilworth. This well-attended event brought together professionals, industry experts, and members of IPF for an in-depth discussion on GST and its associated challenges. The seminar was followed by a delightful hi-tea, which provided attendees with an opportunity to network and discuss the day's learnings.

The Chief Guest of the seminar was Janab Khalid Aizaz Anwar, I.A.S., the Former Commissioner of the Department of Commercial Taxes, Government of West Bengal, Presently, Senior Special Secretary-Finance Department Govt. of West Bengal. His extensive experience and insights into the GST framework provided a solid foundation for the day's discussions. Mr. Lalit Agrawal, the President of IPF, warmly welcomed and felicitated Mr. Anwar, setting a positive and engaging tone for the event.

The program featured prominent speakers who are experts in their fields. Mr. Ankit Kanodia, an esteemed advocate, and Ms. Suruchi Agarwal, a Chartered Accountant, addressed the attendees. Their presentations focused on various aspects of GST, including compliance, recent amendments, and practical issues faced by businesses.

Mr. Kanodia's session delved into the legal intricacies of GST. He discussed the implications of recent judicial pronouncements and their impact on businesses. His expertise helped demystify complex legal jargon, making it accessible to the

audience. He also highlighted common pitfalls and compliance challenges, offering practical solutions to mitigate them.

Ms. Agarwal, on the other hand, provided a comprehensive overview of GST from an accounting perspective. She explained the latest amendments and their implications for businesses. Her presentation included case studies and real-world examples, which resonated well with the audience. She also shared tips on efficient GST filing and audit processes, which were highly appreciated by the attendees.

One of the key highlights of the seminar was the interactive Q&A session. Members of the audience actively participated, posing their queries to the speakers. The interaction was lively, and the speakers addressed the concerns with clarity and expertise. This session proved to be invaluable, as it allowed attendees to gain personalized insights into their specific issues related to GST.

The seminar concluded on a high note with a felicitation ceremony. Mr. Lalit Agrawal expressed his gratitude to the Chief Guest and the speakers for their valuable contributions. He also appreciated the enthusiasm and participation of

the members, which played a significant role in the seminar's success.

Members expressed their satisfaction with the seminar, noting that it had greatly enhanced their understanding of GST and equipped them with practical knowledge to navigate its complexities.

Thanks & Regards

Sudarshan Kr.Tawri

Chairman, Seminar sub Committee.





SMART ° FLEXIBLE ° SOLUTIONS

TECHNOLOGY TO THE POINT



WELCOME TO THE 5TH GENERATION

The ideal image of the future oriented plastics machinery industry is about combining quality and efficiency through digital intelligence to create sustainable solutions. Haitian International is working tirelessly to meet customers' needs by continuously improving its core technology platform and driving innovation at the highest level. The fifth generation of machine technology paves the way to a new stage of development in intelligent manufacturing.

5TH
GEN

SMART TECHNOLOGY

On the field of intelligent technology, we never stop moving forward. Using AI algorithms and sensing technology, we achieve intelligent optimization of production processes, giving our machines self-awareness, self-adaptation, self-decision-making, and self-reconstruction capabilities.

Our new five-generation machine features a multitude of smart functions, such as smart energy management 2.0, smart mold opening and closing 2.0, smart lubrication, and smart diagnosis and support. Through our many years of experience and intelligent innovations, we are working to further reduce our customers' operating costs and thus increase their production efficiency.



flexible

FLEXIBLE INTEGRATION

Focusing on the development of new generation technologies, our intelligent injection molding machine is equipped with flexible open integration functions as standard, supporting diversified open interface, and achieving efficient interconnection with peripheral devices, automation units, etc., building a smart ecosystem.

We flexibly integrate the upstream and downstream data of the industrial chain into the manufacturing ecosystem to provide enterprises with all-around intelligent empowerment in terms of equipment status, production plan, process control, quality traceability, full life cycle management, energy consumption, decision analysis, etc.

solutions

SUSTAINABILITY

As one of the market leaders, Haitian International will prioritize fulfilling social responsibility, protecting the environment, and achieving resource conservation through research and development. We continuously develop energy-saving and consumption-reduction technologies, promote energy-saving device upgrading, reduce carbon emissions, and provide technological innovation and efficient solutions for degradable and recyclable materials.

We continue to be customer-centric, providing application-oriented solutions, providing access to the application of innovative products, empowering sustainable development with economic and environmental benefits, and “forming” a green future.



KALPVURUX Is one of the global supplier of Slitter Rewinder Solutions. KalpvruX is one of the young & dynamic companies having rich experience in flexible packaging

KalpvruX has now more than 19+ Years' experience & has built a reputation for innovative product development & total Customer Satisfaction.

KalpvruX primary goal is to build the machine which provides higher throughput with ease of operation, higher reliability

We have presence over more than 30+ countries across the globe & we are striving to become major supplier for Slitter rewinder solutions in major market.

All our machines have capability to handle variety of substrate of flexible laminates, films, Paper, Aluminum foils etc.

KALPVURUX machines core strength is Reliable engineering, unique tension control algorithm & highly advanced automation which imparts user-friendly operations & highest productivity to our customers

We are focused on below key segments for Slitter Rewinder, Inspection Rewinder & doctoring machine application.

We have specialty in below segments & adding more & more segments by doing new developments

- A) Flexible laminates industry
- B) Film Industry
- C) Label Stock Industry
- D) Hygiene Films

KalpvruX also provides solutions for various coating application

- A) Silicon Coating for Films & Paper
- B) Acrylic Water Based coating for Label stock
- C) Hotmelt / Wax Coating for Label stock & Paper
- D) Adhesive coater with different coating techniques

On All Converting Machines -the major concern lies – on productivity. If the whole production cycle is not automated, even a small error can lead to a decrease in productivity. That means a huge production loss. In today's scenario every converter needs to think on productivity & replacing old machines by advanced automated slitters. New advanced machines must be capable to run futuristic sustainable structures of laminate.

Key factors for Slitter rewinder buying decision

- Productivity in totality (Output, Minimal Man-power , energy efficiency, Minimal Downtime)
- User-friendliness of Machine
- Reliable operations over the years
- Reliable aftersales support

The good news here is that we at KalpvruX provides advanced technology for slitter rewinder solutions – focused on productivity & pleasure of machine operation for user and this results for a quick and flawless turnaround for our customer. KalpvruX advise & educate customer for right product & investment ROI.



We have our in-house automation team & hence new developments as well as new user ideas are executed faster –which gives an edge to our customer. Our most experiences team of customer support ensures minimal downtime of machine for our customers globally & supports them by phone, Remote connection as well as customised documents of trouble shooting.



Actual rooftop installations



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***CAPEX** (CAPITAL EXPENDITURE) - As the consumer, you will pay the total cost of the solar panel system and own it completely.

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INDUSTRY



India's plastic exports rose by 12.7% in December and 5% in January YoY

The Plastic Export Promotion Council (Plexconcil) recently published a report analysing India's plastic export trends for December 2023 and January 2024. Drawing upon data from the Ministry of Commerce & Industry, Government of India, the study reveals that during December 2023, India exported plastics worth USD 1,115 million, an increase of 12.7% from USD 989 million in December 2022. In January 2024, India's plastic exports totaled USD 916 million, showing a 5.0% growth from the USD 873 million recorded in January 2023.

According to the report, during December 2023, a significant uptick in exports was witnessed across various product categories, including Consumer & houseware products, Plastic films and sheets, Plastic raw materials, FRP & Composites, Floorcoverings, leathercloth & laminates, medical items of plastics, FIBC, Woven sacks, Woven fabrics, Tarpaulin, Plastic pipes & fittings, Packaging items (flexible, rigid), and Human hair & related products. However, some sectors faced challenges in growth, namely Cordage, fishnets & monofilaments; and Writing instruments & stationery.

In January 2024, substantial export expansion was observed across a wide range of product categories, including Plastic films and sheets; Plastic raw materials; FIBC, woven sacks, woven fabrics, tarpaulin; Floor coverings, leathercloth & laminates; Consumer & houseware products; Packaging items - flexible, rigid; FRP & Composites; Medical items of plastics; Plastic pipes & fittings; and human hair & related products. However, sectors such as Cordage, fishnets & monofilaments; and writing instruments & stationery continued to encounter difficulties in achieving growth during the same period.

Hemant Minocha, Chairman of Plexconcil, said in a statement, "The export growth in December and January reflects the increasing influence of India's exports on the global economy. The past two months have given us a clear-cut indicator of the increasing demand from global markets, and we aim to sustain this momentum throughout 2024. Our goal is to achieve USD 25 billion in exports by 2027. Employing a multi-pronged strategy to boost exports, we are focusing on existing markets and exploring opportunities in Latin American countries, the Commonwealth of Independent States (CIS), and Africa."

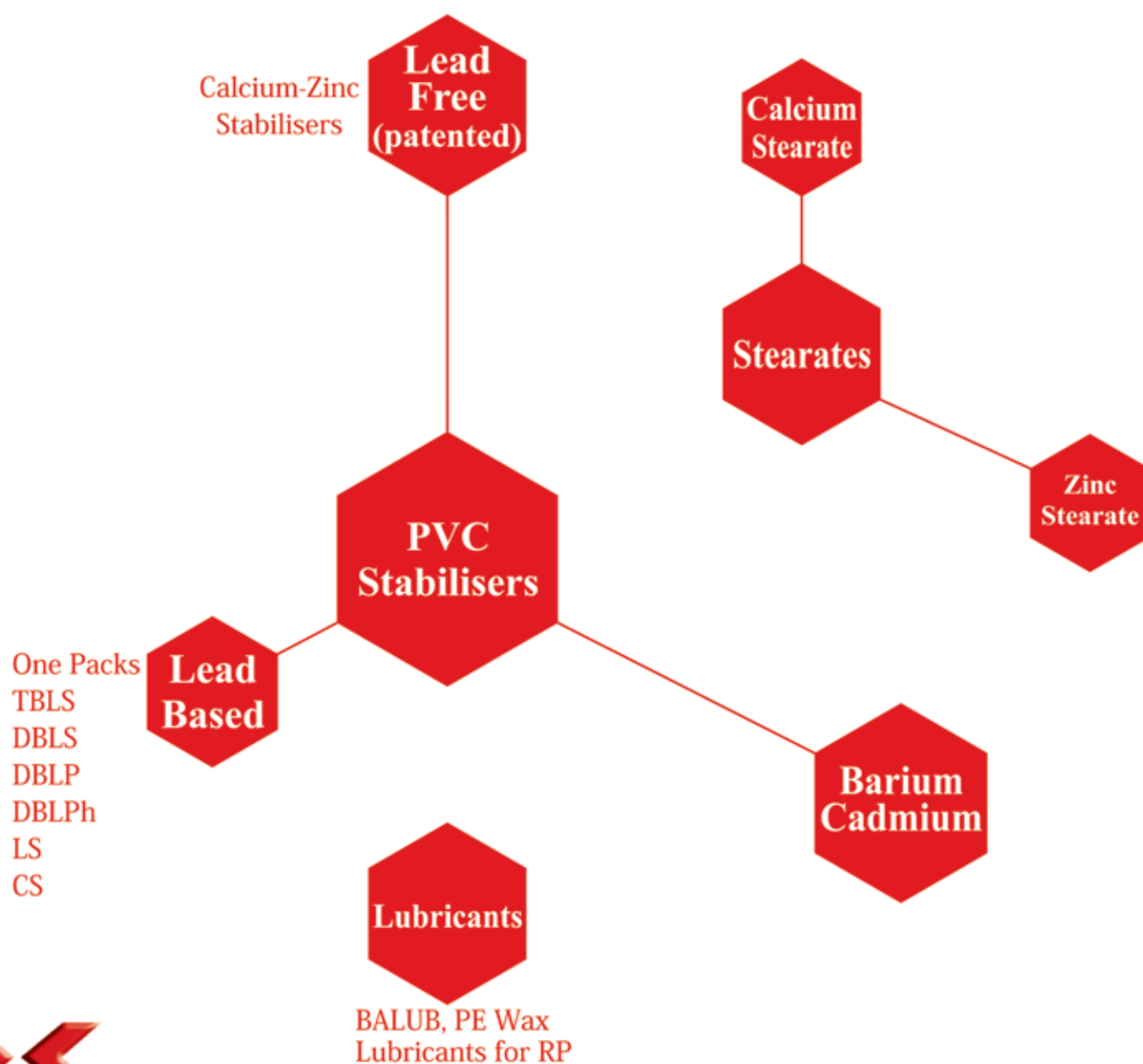
In December 2023, the Indian export landscape witnessed diverse trends across various product categories. Exports of Consumer & houseware products saw a significant growth of 139.1% in December 2023. This growth was primarily due to higher sales of tableware and kitchenware of plastics; wallets, purses and similar articles; safety headgear and sunglasses.

"The primary purchasers of Indian plastic products are the US, Europe, and the UAE. However, recognizing the potential in Latin America, CIS, and Africa, Plexconcil has been organising buyer-seller and reverse buyer-seller meetings with the support of Indian embassies and high commissions to promote India as the right sourcing hub for plastics. In a pioneering move, Plexconcil led a delegation to RUPLASTICA, Moscow, Russia at the end of January 2024 to explore a market that imports plastics worth USD 14 billion each year. Despite our limited regional presence, we see opportunities even in turmoil," Sribash Dasmohapatra, Executive Director of Plexconcil, said in a statement.

Source: Economic Times



Govt Of India's
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Govt approves Rs 10,037 crore UNNATI scheme for Northeast industrial development

The government has approved the Uttar Poorva Transformative Industrialization Scheme, 2024, with a budget of Rs 10,037 crore, aimed at boosting industrial growth and employment in the northeastern states. The scheme aims to drive economic activity in manufacturing and services, leading to holistic socio-economic development. It seeks to generate employment, uplift socio-economic status, and create a conducive environment for economic activities. Under the scheme, investors will be incentivized to set up new units or expand existing ones, contributing to the region's industrial growth and economic prosperity.

In a significant move to bolster industrial growth and employment opportunities in the northeastern

states, the government has approved the Uttar Poorva Transformative Industrialization Scheme, 2024, with a budget of Rs 10,037 crore. The scheme, aimed at developing industries and generating employment in the North East Region, seeks to create productive economic activity in manufacturing and services.

The main objective of the UNNATI scheme is to generate gainful employment, leading to the overall socio-economic development of the region. It is set to be effective from the date of notification and will run until March 31, 2034, inclusive of eight years of committed liabilities.

Financial Allocation and Targets:

The scheme's financial outlay is Rs 10,037 crore for a period of 10 years, with an additional eight years for committed liabilities. It will be a Central Sector Scheme divided into two parts: Part A for incentives to eligible units (Rs 9,737 crore) and Part B for implementation and institutional arrangements (Rs 300 crore).

The proposed scheme aims to receive approximately 2,180 applications, generating around 83,000 direct employment opportunities during the scheme period, with a significant number of indirect employment opportunities expected.

Salient Features and Implementation Strategy:

- The scheme period will be effective from the date of notification until March 31, 2034, with an additional eight years of committed liabilities.
- Industrial units can apply for registration from the date of notification until March 31, 2026.
- All applications for registration must be disposed of by March 31, 2027.
- Eligible industrial units must commence production or operation within four years from the grant of registration.
- Districts are categorized into two zones: Zone A (Industrially Advanced Districts) and Zone B (Industrially Backward Districts).
- 60% of the outlay of Part A has been earmarked for the eight NE states, and the remaining 40% will be allocated on a First-In-First-Out (FIFO) basis.

- Micro industries (defined as per MSME industry norms) will have the building construction and P&M costs included in the P&M calculation for Capital Investment Incentive.

Implementation of the scheme will be overseen by the Department for Promotion of Industry and Internal Trade (DPIIT) in cooperation with the states. Committees at the national and state levels, including the Steering Committee and State Level Committee, will monitor implementation, ensure transparency, and recommend registration and incentives claims.

Background and Emphasis on Sustainable Development:

The Government of India has introduced the New Industrial Development Scheme, UNNATI (Uttar Poorva Transformative Industrialization Scheme), 2024, to spur industrial development and job creation in the North East Region. The scheme's focus is on job creation, skill development, and sustainable development by attracting new investments and nurturing existing ones.

To maintain a balance between industrial growth and environmental conservation, certain industries are included in the positive list, such as renewable energy and EV charging stations, while others, like cement and plastic, are on the negative list due to their potential environmental impact.

Source: *Economic Times*

Unique Recycling Trio In The World

AMUT has scored a winning trio in Australia, after the third consecutive commissioning of a recycling plant, to the full satisfaction of the customer, in two and a half years.

A repeated success in three projects that is unique in the World due to its peculiarities. AMUT has been involved, with its advanced recycling technologies, in three new World-class plants, which will recycle approximately 60,000 tonnes of post-consumer plastic packaging into high-quality resins (including food grade) annually.

Circular Plastics Australia (PET), a joint venture Pact Group, Cleanaway Waste Management, Asahi Beverages, and Coca-Cola Europacific Partners (CCEP) has chosen AMUT as the preferred partner for the design and construction of its "Duet and Symphony" recycling projects in Albury and Melbourne. AMUT was also chosen by the Circular Plastics Australia (PE) joint venture between Pact and Cleanaway for the Choir project, also in Melbourne.

These integrated, custom engineered sorting and washing plants ensure that the bottles are part of a closed cycle, where they are used, collected and given another life. While Duet and Symphony are intended for PET bottles sorting and washing, Choir is for HDPE and PP.

The Duet recycling line, in operation since 2022, was initially conceived for a total 3,400 Kg/h output. Once running and after one year of operation, it is now totalling 4,000 Kg. / h output. A successful result due to AMUT's design and highly performing solutions, surpassing client's expectations.

We are proud of the acceptance of AMUT's highly specialised technology provided to the Symphony

project on last November. The exciting opening ceremony of Symphony took place in the presence of Federal Environment Minister Tanya Plibersek and Victorian Minister for Environment Steve Dimopoulos.

Furthermore, in December we got the green light from the client for the Choir project as well.

The world-class Symphony plastic recycling facility is the biggest of its kind in Victoria and furnished with state-of-the-art equipment capable of producing up to 20,000 tonnes per year of recycled PET resin. When fully operational, Symphony is capable of turning the equivalent of up to one billion 600ml PET plastic beverage bottles a year, into high-value food-grade PET pellets which are then used to make new rPET beverage bottles and food packaging.

Furthermore, the Symphony plant also has the ability to process low viscosity PET tubs and trays.

AMUT washing lines are equipped with the best technical solutions to guarantee high purity of the final PO/PET flakes and in particular the perfect removal of organic and inorganic contaminants and separation of PSA labels and glue. These highly automated washing systems ensure extremely low operational costs with reduced power and water consumptions, and chemicals, too. An important step on the path towards circularity tackling climate change.

AMUT's commitment to the continuous improvement of the efficiency and reliability of its systems rewards the company with an increasing number of loyal customers worldwide. This latter successful achievement is a milestone consolidating AMUT leadership on the Asia-Pacific region.

Source: *Plastemart.com*

To solve the plastics crisis, we need to calm down about plastics

(Bloomberg Opinion) -- How to deal with the waste generated by the half-billion metric tons of plastic manufactured each year? One approach is to consume fewer polymers, recycle them more, and stop the rest from getting into the natural environment. Another is to declare the whole

process a scam, and hope the problem will somehow go away of its own accord.

Faced with a seemingly intractable dilemma, the latter approach is tempting. Fixing things is hard; assigning blame far easier. Such a strategy is unlikely to change much, however.

The Center for Climate Integrity, a US nonprofit, issued a report this month alleging oil and chemicals companies “perpetuated a decades-long campaign of fraud and deception about the recyclability of plastics,” combing through public and private statements to build a case for legal action against the companies and their lobby groups. The report tells a powerful story about the difficulty of making recycling work, and the incessant efforts of the plastics industry to pretend it was more successful than it really is.

And yet the problem with our plastics addiction is far more fundamental than an issue of mere greenwashing.

Rich countries have been reducing their per-capita carbon emissions. Plastic usage keeps rising.

Consider the progress that's been made against other pollutants. Per-capita carbon emissions and crude oil consumption have fallen about 15% in rich countries over the past few decades, as efficiency improvements, renewable power and electrification squeezed fossil fuels out of the economy. Plastics have gone in the opposite direction: In 2019, we were using about 29% more per person than we were at the turn of the millennium.

That's not because plastics producers have carried out a more successful lobbying operation than the rest of the fossil fuel industry. It's because their products are more indispensably useful to our lives, and harder to substitute with alternatives.

The progress that we've made on the road to net zero comes from three main sources: efficiency, substitution, and lifestyle changes. To tackle our plastics problem, we need to consider which combination of those levers to pull.

To make our usage of plastics more efficient, we'd need to recycle more and shift our consumption toward lightweight, thinner containers. Such moves can show real benefits in reducing emissions. Members of the Organization for Economic Cooperation and Development, the club for rich democracies, are consuming less gasoline now than at any point since the 1980s. That's largely caused not by the recent rise of electric cars, but by fuel-economy regulations that have been slowly tightening for decade.

The decline of coal power will soon make road transport a bigger emitter than electricity in the US. Efficiency gains can be agonizingly slow, however. In the US, those fuel economy regulations mean that emissions from gasoline usage have fallen

about 9.3% since 2000, slipping to 1.7% if you add in the diesel used in trucks. Substitution — replacing one technology with another — is far more effective. By switching away from coal-fired power and toward wind and solar (as well as less-polluting natural gas), emissions from America's grid fell by a third over the same period.

Substitution might not work well for plastics, though. It's dependent on the availability of viable alternative technologies. Wind and solar power and electric batteries are cheap, scalable, and superior to fossil fuels. Biodegradable and reusable plastics that we might want to use instead of conventional ones offer few improvements, while alternatives such as glass and aluminum are often worse in climate and environmental terms.

That leaves lifestyle changes, but these are famously difficult to engineer. Every time you buy a clamshell of strawberries, a bottle of water, or a gallon of milk, you're making a decision to use more plastic, rather than less. If we're adjusting our behavior at all, it's to use more and more polymers, both in rich countries and in emerging ones.

As long as consumers and producers continue to favor plastic, our consumption will tend to rise. That tendency is so strong that even widespread public aversion (Americans consider plastic waste a bigger problem than climate change as well as air and water pollution, for instance) doesn't appear strong enough to rein it in.

It's hardly surprising that this situation inspires a sense of futility. That's particularly the case because, as the Center for Climate Integrity's report points out, the industry's approach has been riven with cynicism for decades.

Meeting that with further cynicism, however, won't solve the problem. Efficiency gains from recycling and light-weighting may be the best hope we have to turn around the juggernaut of our society's plastics habit. In places, such as Norway and Japan, there's even evidence that they're producing real results, particularly when manufacturers are forced to shoulder the cost of disposal.

That's an argument for tough regulations that will be resisted tooth and nail by the industry, to build a recycling system strong enough to command public support and discourage households from landfilling their polymers. Encouraging the nihilistic sense that all attempts to improve our usage of plastics are fraudulent will only make that work harder.

Source: *Economic Times*

Balrampur Chini announces Rs 2000cr capex in India's first industrial bioplastic

Balrampur Chini Mills Limited (BCML), a leading integrated sugar mill company on Monday announced a Rs 2000 crore forward integration project which will be the first-ever "industrial bioplastic" plant in India. The Kolkata-based company said this diversification with its upcoming PLA (Polylactic Acid) manufacturing venture is well-aligned with the sustainability goals envisioned in India, to combat climate change.

"The new project aims to propel India towards net zero emissions by 2070 with an estimated investment of Rs 2,000 crore in phases over the next 30 months," Balrampur Chini Executive Director Avantika Saraogi said.

"Expected to be completed within 30 months, the new venture will mark the establishment of the first-ever industrial bioplastic plant in India. The state-of-the-art PLA factory will command a whopping capacity at a global scale of 75'000 tonne per annum," the company said.

Despite not yet being finalized, the project will be located on a "greenfield site", beside an existing sugar plant. There are about ten sugar mills owned by the company, all of which are in Uttar Pradesh.

Officials said, a significant proportion of the local infrastructure already exists at the sugar mill locations and it will help efficient usage of sugar as a raw material, to produce PLA.

"PLA provides a sustainable alternative to traditional plastics, supporting our eco-friendly initiatives and advancing our business model towards sustainability.

Balrampur Chini's project aims to lead the way in reducing carbon emissions and promoting innovation in plastic production," Balrampur Chini CMD Vivek Saraogi said.

The new venture is also facilitated by BCML's minority stake acquisition in Konkan Speciality Polyproducts Private Limited (Konspec), a notable player in the sphere of specialty polymers & biopolymers, intermediaries, and chemicals, the statement said.

The bioplastics marks the onset of a significant shift from the current linear consumption manufacturing paradigm to the one, led by circular and regenerative principles. Additionally, most of India's current SUP (Single Use Plastic) consumption and its respective applications can be replaced by PLA and PLA compounds, officials said.

"We see the utilisation of sugar as a raw material in PLA production as pivotal for a sustainable future. Through the PLA project, our goal is to not only drive financial growth but also redefine standards in India's sustainable economic landscape," Saraogi said.

The company said it has roped in Stefan Barot as the President (Chemicals) and a member of the senior management personnel, who brings over 35 years of diverse global experience, including 13 years in the bioplastic sector.

Source: *Economic Times*

Dharaksha Ecosolutions Addresses Crop Residue Burning and Plastic Pollution with its Biodegradable Packaging Material

Dharaksha Ecosolutions, a Faridabad-based start-up, specializes in mycelium-based biodegradable packaging. It is among the seven revenue-generating start-ups selected under Cisco and Social Alpha's Krishi Mangal second edition cohort, a scale-up accelerator program launched in 2021 to support start-ups in agriculture and allied livelihoods.

The worsening Air Quality Index (AQI) in Delhi NCR and other Northern Indian cities is part of the yearly news cycle. One of the major contributors to this

issue is emissions from the burning of crop stubble (parali) by farmers in Punjab and Haryana.

Dharaksha, where 'Dhara' means earth and 'Raksha' means saving, is a group of dedicated, proactive innovators working on solutions to protect Mother Earth from hazardous air pollution caused by stubble burning. This biotech start-up, founded in 2020 by Arpit Dhupar and Anand Bodh, harnesses the natural ability of mycelium (roots of fungi) to break down complex organic matter through the secretion of enzymes. As mycelium

continues to grow, it creates a nearly solid structure within its digested substrate.

The ability of mycelium to grow on various biomass and produce complex structures with a range of physical, chemical, biological, and mechanical properties is being utilized to produce a variety of materials that can be used as sustainable alternatives in packaging, food, construction, textile, medicine, and cosmetics industries. For bio-composite production, the substrate is inoculated with the culture of a selected fungal strain, allowing the mycelium to grow under specific humidity, air, and temperature conditions. Once the desired growth is obtained, the material is oven-dried/hot-pressed to kill the cells, remove water, and achieve a predetermined density.

As paddy stubble (parali) has a lignin content of 15-16%, it is difficult for even fungus to break down within the optimum time to achieve the desired material properties. However, Dharaksha, with years of experimentation and iteration, has been able to create a unique mix of ingredients comprising crop stubble and simple sugars (enabling faster digestion), inoculated with a fungal strain (an engineered improvement of a wild native to India). Under the right temperature, pressure, and humidity conditions, this fungal strain starts digesting and binding the substrate through the inward growth of the mycelium structure. Later, the partially digested material is transferred into a mould, taking its shape, and eventually ends up holding the substrate material in a tight, cohesive manner due to its dense fibrous growth. This material is ultimately dried in an oven to neutralize the fungus. The final product is a bio-composite with properties similar to thermocol (polystyrene).

"We believe that changing the way we approach agriculture is probably the intervention with the most significant potential impact on slowing down global warming. As a country, we burn over 100 million tonnes of agricultural waste every year, which is more than even the Amazon fires. Imagine using this biomass and creating a circular flow of materials. This would drastically reduce emissions and reduce waste generation; the impact on air quality and the environment would be unparalleled. We want to create sustainable, high-quality, and highly useful alternate materials from agricultural residue while providing monetary incentives for our farmers not to burn them," said Arpit Dhupar, co-founder of Dharaksh Ecosolutions.

With their unique biodegradable packaging solution, Dharaksha addresses many issues that primarily plague our country. Due to a lack of affordable means to dispose of waste and the short gap between the harvesting of paddy and the sowing of wheat, the farmers in Punjab and Haryana burn over 23 million tonnes of paddy straw waste every year. This leads to unprecedented

levels of air pollution, with AQI soaring past measurable limits of 999+ in some regions of North India, suffocating 80 million people.

Secondly, Dharaksha's biodegradable packaging material can easily replace thermocol, technically known as expanded polystyrene (EPS), a form of plastic. Due to its high volume, low weight, rigid form with high thermal insulation capacity and impact resistance, it is used as packaging material and in construction. At least 5 million tonnes of thermocol are produced annually. However, like any plastic, it takes about five decades before it can completely break down, and in the process of breakdown, it releases micro-plastics that enter our food chain.

Key USPs of the material prepared by Dharaksha Ecosolutions include sustainability, high strength and surface finish, cost-effective EPRs, and bespoke customer experience via laser branding. The product is completely biodegradable in 60 days under normal soil conditions along with a shelf life of 2.5 years. Dharaksha's material is ahead of its competitors' packaging solutions, such as paper pulp mould packaging. Such alternative packaging solutions are being promoted with current government regulations, as companies must declare their plastic and thermocol usage. They then must set up reverse logistics for recycling by themselves or outsource the same to a third party. This process also known as extended producers' responsibility (EPR) for plastic packaging, is an additional cost implication that can be saved by using biodegradable alternatives. As Dharaksha's packaging solution is the most cost-effective right now, it can save companies the combined cost of EPR and conventional thermocol.

Most Indians are ready to pay a premium for sustainable packaging and the market also backs the uptake of this material. This unique customer experience of finding biodegradable packaging material during unboxing, is a high leverage for clients. Since, this material is fire retardant and waterproof, it can be uniquely engraved with a laser to create a bespoke brand placement and marketing opportunity for customers. Each tonne of material created by Dharaksha saves about 91,40,00,000 cubic meters of air from being polluted.

"Many of our customers have voiced concerns about using thermocol and plastic in packaging. Since our products are sold in fragile glass jars, the challenges with courier services made this an ongoing issue. However, we've now transitioned to sustainable packaging provided by Dharaksha Ecosolutions, and we have experienced no damage during transit. Additionally, this packaging is entirely home-compostable, allowing you to simply toss it into your pot or garden, where



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it naturally turns into compost. We are thrilled about this shift in our packaging approach," feedback from Gourmet Jars, an existing user of Dharaksha's packaging materials.

Krishi Mangal, a flagship program of Cisco executed in partnership with Social Alpha, is not only focused on incubating agritech start-ups but also brings together a robust ecosystem comprising investors, domain experts, and government stakeholders to catalyze initiatives. Aligned with Cisco's commitment to finding new ways to inspire a generation who want to use technology for social good, the program aims to bring to the market scalable solutions that can enhance farming and help in making agriculture more sustainable and adaptive, playing a vital role in the global effort to combat climate change.

"According to a study by the Climate and Clean Air Coalition (CCAC), globally, almost 450 million tonnes of crop residues are burnt every year,

resulting in 1.2 million tonnes of methane emissions. At Cisco, we truly believe that with the transformative power of Dharaksha Ecosolutions, agricultural waste can be turned into a sustainable alternative addressing not only the environmental impact but also the long-festering challenges of low profitability and productivity that have been aggravated over time in the agriculture sector," says Harish Krishnan, Managing Director & Chief Policy Officer, Cisco India & SAARC.

With the aid of Cisco's Krishi Mangal, Dharaksha Ecosolutions plans to expand its existing production capacity from 6,000 Sq. Ft. to 16,000 sq. Ft. By leveraging economies of scale, they aim to cater to the mass packaging market, and the raw materials for these plants will be sourced from stubble-prone districts such as Ambala and Kurukshetra.

Source: *Economic Times*

Antimicrobial Additives for TPU Film in Medical and Outdoor Applications by Avient

Avient Corporation unveiled an expansion of its Cesa™ Withstand™ portfolio to include new grades of antimicrobial and antifungal additives. These new grades are developed to enhance the performance of thermoplastic polyurethane (TPU) film-laminated products and devices in applications where combating microbe development is highly important.

TPU film is widely used as a waterproof or adhesive product layer in outdoor, medical, aviation, marine, and industrial markets. These new grades of Cesa Withstand antimicrobial additives can help limit microbial growth, which can lead to odor, staining, discoloration, or loss of mechanical properties in these applications."

Cesa Withstand additives include organic and inorganic ingredients to inhibit the growth of bacteria, mold, and fungi on the plastic surface,

providing uncompromising antimicrobial performance. The effective reduction of bacterial activity that can be achieved on TPU film laminated plastic and/or textile surfaces has been confirmed in extensive testing to international standards, including JIS 2801. The additives have also passed strict anti-fungus testing according to JIS Z 2911.

The two new available grades of Cesa Withstand for TPU film can meet the specific anti-bacterial and anti-mold protection needs of medical beds, transparent tent components, and ice bags. Other applications that can be further developed include portable energy storage, protective equipment, outdoor apparel, and air sleeping pads. They are currently manufactured in Asia and are commercially available globally.

Source:- Avient

Enzyme in laundry detergent can help recycle single-use plastics in 24 hrs.

Scientists have developed a novel method that uses enzymes found in laundry detergents for recycling single-use bioplastics in disposable items such as coffee cups and food containers. The method, described in the journal *Cell Reports Physical Science*, uses the enzymes to "depolymerise"-or break down-landfill-bound

bioplastics into soluble fragments within just 24 hours. The process achieves full degradation of the bioplastic polylactic acid (PLA) in an approach that is 84 times faster than the 12-week-long industrial composting process used for recycling bioplastic materials, the researchers said.

The research offers a widespread recycling solution for single-use PLA plastics, as the scientists at King's College London, UK, found that in a further 24 hours at a temperature of 90 degrees Celsius, the bioplastics break down into their chemical building blocks.

Once converted into monomers-single molecules-the materials can be turned into equally high-quality plastic for multiple reuse, according to the researchers.

Current rates of plastic production outstrip our ability to dispose of it sustainably, they said.

According to non-profit Environmental Action, it is estimated that in 2023 alone more than 68 million tonnes of plastic globally ended up in natural environments due to the imbalance between the huge volumes of plastics produced and our current capacity to manage and recycle plastic at the end of its life.

A recent Organisation for Economic Co-operation and Development (OECD) report predicted that the amount of plastic waste produced worldwide is on track to almost triple by 2060, with around half ending up in landfill and less than a fifth recycled.

While bioplastics-derived from biological sources such as corn starch, cassava or sugarcane-are seen as a more sustainable choice by consumers, current methods of bioplastics production are costly and compete with food-based agriculture for use of land, the researchers said.

Mechanical recycling methods are inefficient, generate CO2 and are incapable of producing high-quality reusable materials, they said.

These "green" plastics primarily end up in landfill after just one use, causing many retailers to revert to using oil and fossil-based materials.

The speed at which the bioplastics break down using this new method could revolutionise plastic production, offering an efficient, scalable and sustainable blueprint for recycling single-use bioplastics, according to the researchers.

The research opens up the opportunity for a sustainable, circular economy that stamps out the production of fossil-based plastics and tackles the huge volume of plastic waste that ends up in landfill and natural environments, they added.

Source: Economic Times

Reliance becomes first in India to use chemical recycling for circular polymers

Reliance Industries on Friday said it has become the first Indian company to chemically recycle plastic waste-based pyrolysis oil into International Sustainability and Carbon Certification (ISCC)-Plus certified circular polymers.

In a release, it said this innovation is a testimony to Reliance's commitment to reducing plastic waste and supporting the circular economy in India.

Reliance shipped its first batch of ISCC-Plus certified circular polymers, named CircuRepol (Polypropylene) and CircuRelene (Polyethylene).

"RIL's commitment to sustainability is demonstrated through its innovative methods like chemical recycling which help create a Circular Economy. The company firmly believes in finding smart solutions to reduce plastic waste and inspire others to join in this journey towards a greener future," the release stated.

CircuRepol and CircuRelene have been designed to lead the way in circular economy practices. Reliance's Jamnagar refinery became the first refinery to get the important ISCC-Plus certification, proving that it can produce circular polymers through chemical recycling.

The ISCC-Plus certification guarantees that traceability and rules are followed in making circular polymers.

Reliance has developed a technology that turns different types of plastic waste, including single-use and multi-layered plastics, into pyrolysis oil.

"The company is working with trusted partners to increase the production of this oil and turn the yield into Circular Polymers. Chemical recycling has many benefits, including turning plastic waste into high-quality materials for new plastic. These materials can be used for packaging that comes into contact with food," the release added.

Reliance is India's largest private sector company, with a consolidated revenue of Rs 974,864 crore (USD 118.6 billion), cash profit of Rs 125,951 crore (USD 15.3 billion) and net profit of Rs 73,670 crore (USD 9.0 billion) of the year ended March 31, 2023.

Reliance's activities span hydrocarbon exploration and production, petroleum refining and marketing, petrochemicals, advanced materials and composites, renewables (solar and hydrogen), retail and digital services.

Source: Economic Times

Yamuna Expressway authority plans footwear, plastic, handloom, EV industrial parks in Sector 10

Yamuna Expressway Industrial Development Authority (YEIDA) plans to create multiple new industrial parks across a sprawling 1,300-acre expanse in Sector 10 near Yamuna Expressway.

As per a Tol report, the visionary proposal encompasses a spectrum of specialized parks, each securing 100 acres of land for its distinct focus. These industrial parks encompass a leather footwear and accessories hub, a plastic processing nucleus, a handloom and handicraft sanctuary, and a cutting-edge electric vehicle haven. These endeavors complement the previously revealed semiconductor and electronic manufacturing hubs spanning 500 acres.

YEIDA's CEO, Arun Vir Singh, told Tol that the Authority's board has endorsed the plans, and the land acquisition process for these dynamic industrial parks is already in motion.

A significant step towards realization occurred when an expert committee granted approval for the social impact assessment (SIA) of the affected villages. Gautam Buddha University was designated to conduct this crucial SIA process. With this endorsement secured, the proposal advances to the state government for issuing notifications under the pertinent sections of the Land Acquisition Act.

YEIDA will secure the required land through a combination of acquisition and consent, with some land parcels already successfully acquired.

Noteworthy is the Leather Park, proposed by the Council of Leather Exports under the ministry of

commerce and industry. This vibrant enclave will focus on the comprehensive manufacturing of leather-related accessories, footwear, and garments.

The Plastic Processing Park, advocated by the All India Plastic Industries Association, has garnered enthusiasm from 216 association members eager to establish their industries within its confines.

In a commendable nod to traditional craftsmanship, the Handloom Handicraft Welfare Association's proposal has been embraced for the establishment of a dedicated Handicraft Park.

Sector 10 will also house the Electric Vehicle Manufacturing Park, a visionary project presented by the Electric Vehicles Manufacturers Welfare Trust. This monumental initiative is projected to attract a substantial investment of Rs 15,000 crore.

Additionally, the Semiconductor and Electronics Manufacturing Park has captured the attention of numerous foreign entities, particularly those from Taiwan. An impressive investment of Rs 1 lakh crore is expected, with the potential to generate employment for over 65,000 individuals.

YEIDA's multifaceted endeavors promise to reshape Sector 10 into a bustling hub of innovation, economic growth, and employment opportunities, contributing to the region's dynamic industrial landscape.

Source: Economic Times



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Rheological Characterization of Polymer Melt for Improved Processability and Product Quality

What is Rheology

Rheology is used to describe and assess the deformation and flow behavior of any kind of material. The term originates from the Greek word "rhei" meaning "to flow".



Fig 1

Rheology Road Map



Fig 2

Between the beginning and the end of this road (Fig 2) there are liquids with viscous behaviour at one end and solids with elastic behaviour at the other end. On rheological terms, on left side, there are fluids that have an ideally viscous behaviour and on the right side, there are solids having ideally elastic behaviour.

In between, there are substances that act as viscoelastic materials, showing a mixture of viscous and elastic properties. Polymer melts are viscoelastic fluids which behave as viscous or elastic, depending on how fast they flow or are deformed in the process. This means that under certain conditions they will behave like a liquid and will continue to deform while the stress is applied. Under other conditions the material behaves like an elastic solid and there will be some recovery of the deforma-

tion when the applied stress is removed. Alternatively, if strain is held constant at the end of an experiment, stress will not immediately return to zero but will relax with time. Hence both viscous and elastic responses to applied stress must be measured to characterise the flow behaviour of polymer melts.

Whether a material behaves as elastic or viscous depends on the time scale of the deformation, or in other words on the ratio of the process time and material time, referred to as Deborah or Weissenberg number. If the material time is short in relation to the process time, the material shows predominantly viscous behaviour. If the Weissenberg number equals unity or is larger, the elastic behaviour of the fluid increases and becomes dominant.

What is Viscosity

Viscosity is the internal friction that occurs when all components in a flowing liquid are forced to slide along each other. The viscosity is the prime material parameter in polymer processing. To ensure smooth operation in processing, it is a must to control the rheology of the material within the specified range. The structure – rheology relationship is very important to ensure better processing performance without sacrificing the performance of the final product.

Viscometric Flows – Two Plate Model

Two types of viscometric flows - simple shear and simple elongational (extensional) or shear free flow play important role in polymer processing.

Simple shear is uniform flow (Fig 3) that means each fluid element on a same stream line undergoes exactly the same deformation and the distance between them remains unchanged.

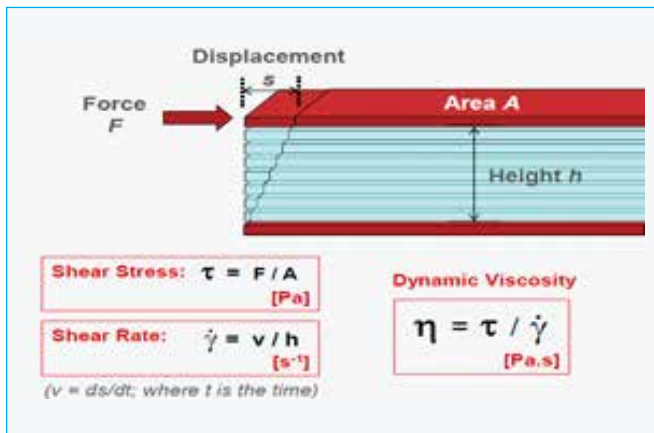


Fig 3

Viscometric flow embodies both uniform and non-uniform shear flows and can be divided into drag flow and pressure driven flow according to the way the shear is created (Fig 4). In drag flow shear is generated between two surfaces, one surface is stationary while other is moving. In pressure driven flow, shear is created due to the pressure gradient in a closed channel.

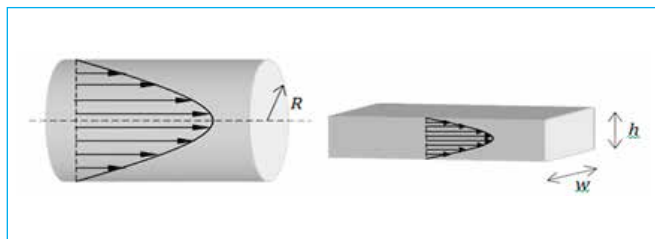


Fig 4

Elongational or extensional flow means that the material undergoes stretching along the streamlines as a consequence of extensional deformation

and the distance between particles on the same streamline changes. The polymer is stretched or oriented in uniaxial, biaxial or planar manner (Fig 5).

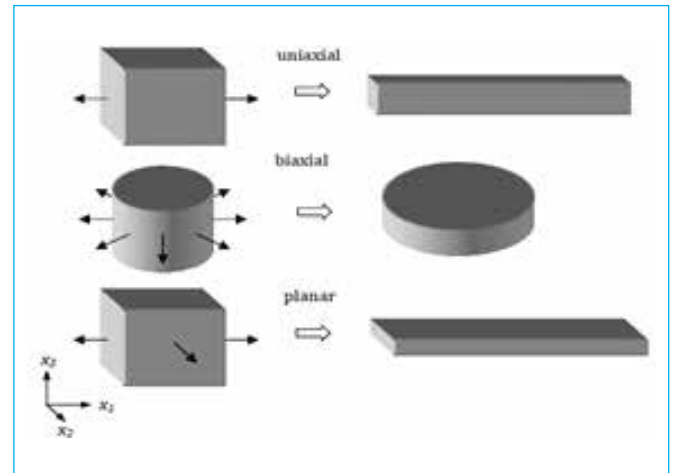


Fig 5

This figure above shows the uniaxial extensional flow of polymer melts. Strain hardening behavior is illustrated (Fig 6) by solid lines and strain softening behavior by dotted lines. In the linear region the curve should be the linear viscoelastic envelop (LVE). For strain hardening materials the curve rises steeply before reaching a steady state, where the viscosity becomes independent of time. For strain softening materials, the nonlinearity appears as a steady state level below the LVE.

In most industrial melt processes the flow is a mixture of both elongational and shear flows. For example, in injection moulding, elongational flow

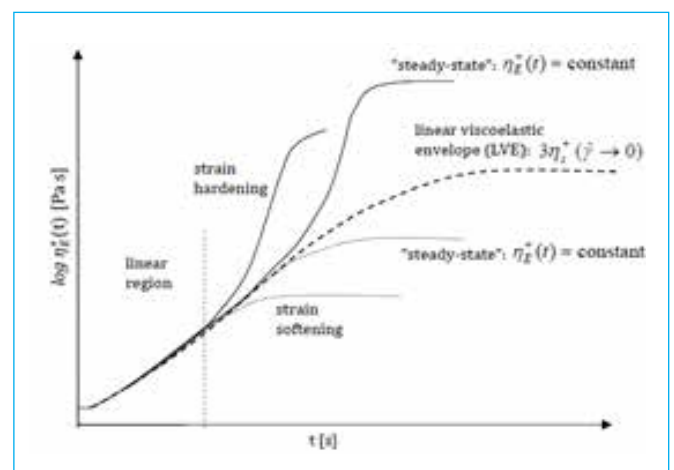


Fig 6

occurs at gates and sudden changes in flow cross section where the melt accelerates, as well as at the front of the fountain-flow pattern in the cavity.

Shearing however is a dominant deformation type in the mould cavity where the melt flows along the

mould wall. Elongational flows dominate in blown film, blow moulding and fibre spinning processes. In engineering of polymer resins for those applications, the determination of extensional properties is crucial.

Viscosity Models for Shear Thinning Polymer Melts

Different models are used to describe the flow behaviour of shear-thinning fluids. By fitting a model to the experimental data set, the flow behaviour over wider than experimental range of shear rates can be predicted. A typical shear viscosity curve for a polymer melt with different flow regions is presented Fig 7, along with the parameters contributing to the fitting at each region.

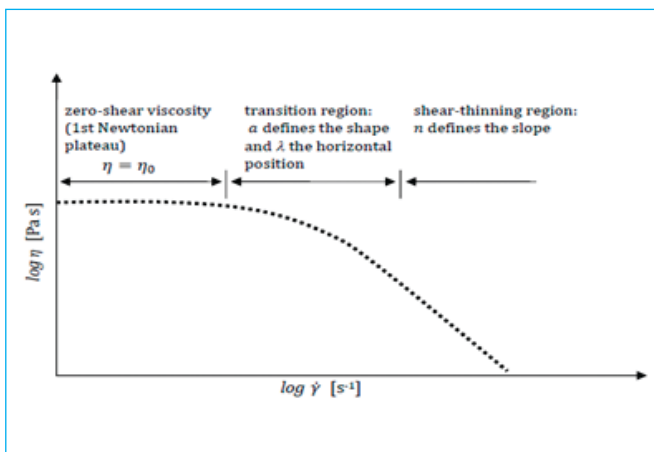


Fig 7

Ostwald – de Waele model : It is the simplest viscosity model requiring two fitting parameters – K and n.

$$\eta(\dot{\gamma}) = K \dot{\gamma}^{n-1}$$

$n - 1$ is the slope of log shear viscosity vs. log shear rate, thus for Newtonian materials $n = 1$, for shear-thinning material $n > 1$, and for shear-thickening materials $n < 1$. K is the flow consistency index. This Ostwald – de Waele model is capable of describing either only Newtonian flow or only shear thinning. Hence, this model is of less use for polymer melts that show a Newtonian plateau at low shear rates and shear thinning behaviour at high shear rates.

The Cross model is capable of describing Newtonian viscosity, shear-thinning viscosity, and also the transition area between them.

$$\eta(\dot{\gamma}) = \frac{\eta_0}{1 + (\lambda \dot{\gamma})^{1-n}}$$

Where, η_0 is the zero shear viscosity, n = power law coefficient, λ = characteristic time.

For certain polymers a better fit at the transition area is achieved by the Carreau model.

$$\eta(\dot{\gamma}) = \eta_0 [1 + (\lambda \dot{\gamma})^2]^{\frac{n-1}{2}}$$

This model is used to describe the viscosity of narrow MWD polymers.

Another model Carreau – Yasuda is able to describe the gradual transition from Newtonian plateau to the shear – thinning region in a better way.

$$\eta(\dot{\gamma}) = \eta_0 [1 + (\lambda \dot{\gamma})^a]^{\frac{n-1}{a}}$$

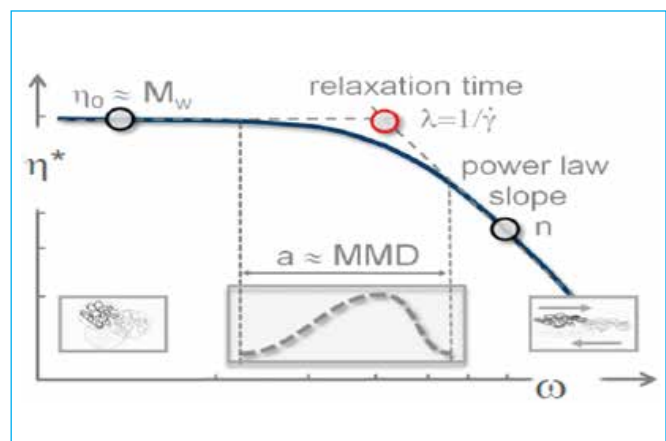


Fig 8

The Carreau – Yasuda model is a good fit for polymers with broad MWD polymers, Fig 8.

Temperature and pressure effects can be included in the curve fitting using a coefficient based either on the Arrhenius or WLF equation for temperature, and the Barus equation for pressure. As for example, Temperature and Pressure shift are included in the Carreau – Yasuda model below.

$$\eta(\dot{\gamma}) = a_{T,p} \eta_0 [1 + (a_{T,p} \lambda \dot{\gamma})^a]^{\frac{n-1}{a}}$$

Flow Curve: Shear Rates of Industrial Processes

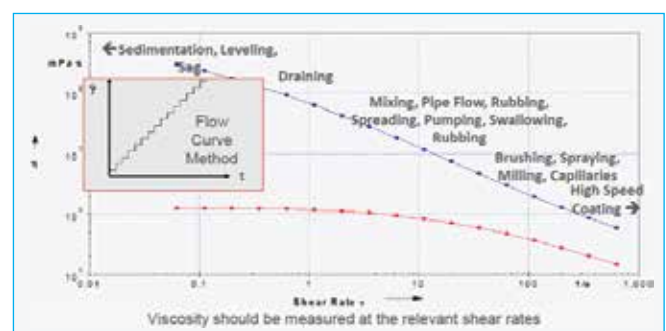
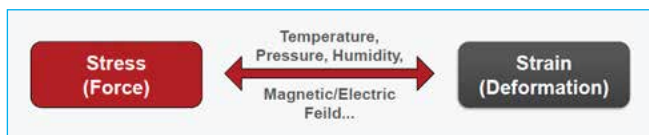


Fig 9

Both shear and extensional rheology play a critical role in polymer processing Fig 9. Shear thinning is a property that is required during injection moulding for filling the mould cavity. Extrusion is also enabled by shear thinning. Many polymer processes involve both shear and extensional deformation types. Generally, extrusion and injection moulding are processes, where shear deformation dominates. For secondary shaping processes, such as fibre spinning, blow moulding and film blowing, by contrast, extensional viscosity gives a more important indication of the polymer processability.

Rheometry: Approaches to Measuring Viscoelastic Behaviour

Rheometry is the measuring technology used to determine rheological properties



Devices for shear rheology measurements can be roughly divided into drag-flow and pressure-flow based.

A. Parallel-plate Rheometry: Rotational Rheometer

Rotational rheometer can be used for measuring the viscoelastic functions of polymer melt by generating drag flow by parallel plate geometries Fig 10 & 11. Drag flow between two rotating or oscillating plates is often called torsion flow.



Fig 10

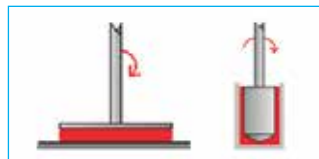


Fig 11

In rotational rheometers, two concentric, rigid, circular parallel plates are used to test rheological properties of thermoplastic specimen by applying a continuous oscillatory deformation by means of Separate motor and Transducer. Thus, rotational rheometer capable of measuring stress and strain independently. Shear Rate is determined by the angular velocity, gap between the plates and the distance from the centre of the plate.

Polymer Characterization

Rotational rheometer capable of measuring (Fig 12):

- Melting temperature and glass transition temperature – important information for processing
- Zero shear viscosity and low shear rate behaviour – correlates to manufacturing problems like irregularities in moulded parts

- High shear viscosity – correlates to processing condition like injection, extrusion etc
- Average molar mass and molar mass distribution
- Crossover Point $G' = G''$

Frequency Sweep: Molar Mass (M_w)

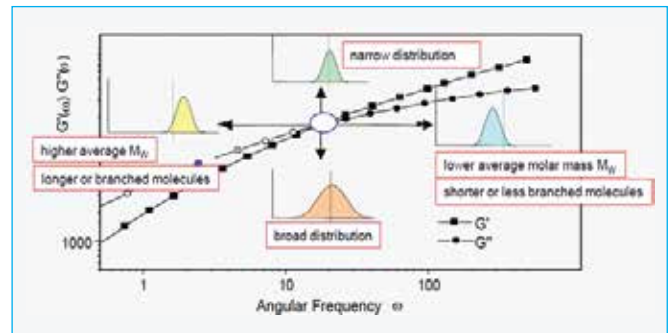


Fig 12

What more can be analysed by Rotational Rheometer (Structure-Property Relationship)

Composition	Mechanical Properties	Long Term Behaviour
Material Structure	Stress-Strain Behaviour	Time-Temperature Superposition
Molar Mass Distribution	Damping characteristics	Prediction of storage stability
Effects of Filler	Creep / relaxation behaviour	Aging Behaviour
Blend Compatibility Studies	Extensional properties	Recyclability

A. Capillary Rheometry: Capillary Rheometer

For pressure driven flow, capillary rheometers with round hole die or slit die geometry are commonly used (Fig 13). Polymer granules are fed into the preheated rheometer barrel. After filling the barrel and reaching the thermal equilibrium, the melt is extruded through a capillary die at a defined piston speed and the melt pressure is recorded. It measures apparent viscosity over a broad range of shear rates and at varied temp, which are comparable to the conditions encountered in injection molding, calendaring, extrusion etc (Fig 14).

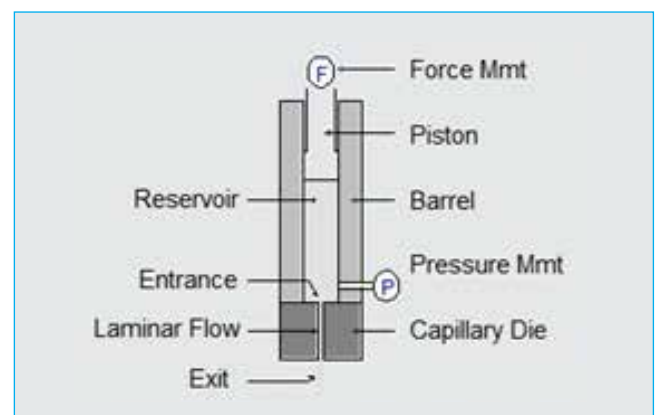
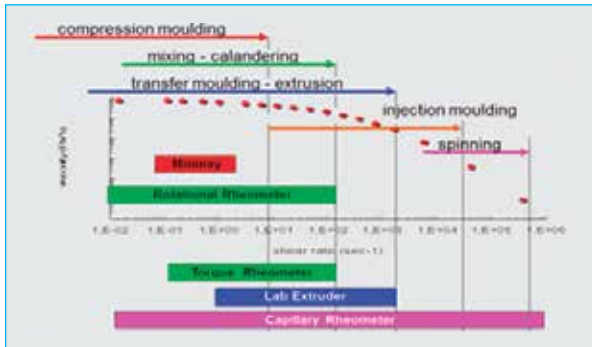


Fig 13

Process and Measuring Windows



Capillary Rheometer to investigate Processing Issues

Rheological evaluation is based on the fact that most non-Newtonian fluids like molten polymers have a defined flow profile which can be modeled by several viscosity models like Cross model, Ostwald – de Waele model, Carreau – Yasuda depending on the molecular weight and molecular weight distribution of polymers.

The shear viscosity curve represents that at low shear rate the molten polymers have constant viscosity and at high shear rate also the molten polymers have constant viscosity which means with increasing shear rate the viscosity remains constant at two extreme shear rates. Hence, there are two Newtonian viscosity plateaus observed with molten polymers. Now these two viscosity plateaus are connected by a range of shear rates where the behavior of molten polymer is shear thinning i.e., the viscosity reduces with increase of shear rate.

For polymer melts, the viscosity of the material in the low shear plateau is related to the molecular weight of the polymer. The higher the molecular weight, the higher will be the low shear viscosity plateau (zero shear viscosity) for molten polymers.

The broader the molecular weight distribution, the lower the shear rate at which shear thinning will be developed which is represented in the figure below.

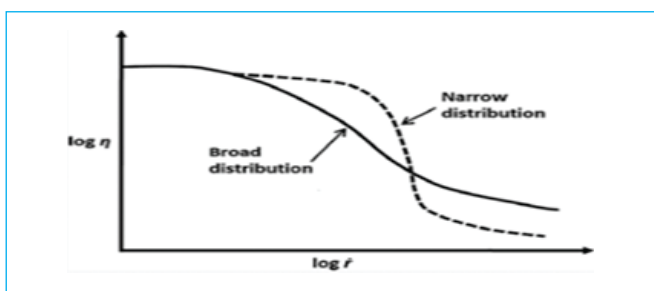


Fig 15

Hence, if suitable standard shear viscosity – shear rate curve, covering the desired molecular weight and process performance characteristics are available, those can be used to construct a “calibration curve” of good (performing) polymer batches. Now, by comparing the shear viscosity – shear rate

plot with the standard calibration curve, one can determine if a sample is acceptable or having differences in rheological behavior (Fig 15).

For example, in Fig 16, sample A and sample B represent the boundaries of acceptable molecular

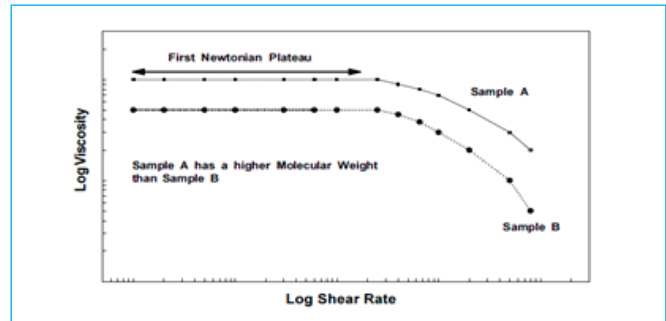


Fig 16

Capillary Rheometer for Mold Flow Simulation

Mold flow analysis uses a software to create simulation of plastic flow allowing processors to enhance the design of their mold through a flow analysis of injection molds and create a better product. Capillary rheometer is designed to generate database for mold flow datafitting template.

Starting with a computer aided design (CAD) model of the part to be molded, material characteristic data, (Fig 17 & Fig 18) of the molding resin are needed as input parameters; rheological properties are needed for flow behavior prediction, thermal properties for the cooling analysis, pressure-volume-temperature (pVT) and mechanical properties for modeling the packing phase and predicting post - ejection shrinkage and warpage.

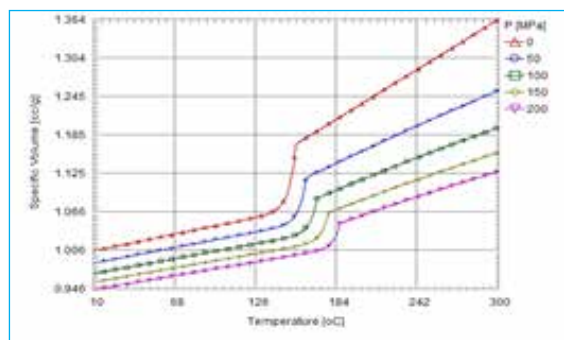


Fig 17

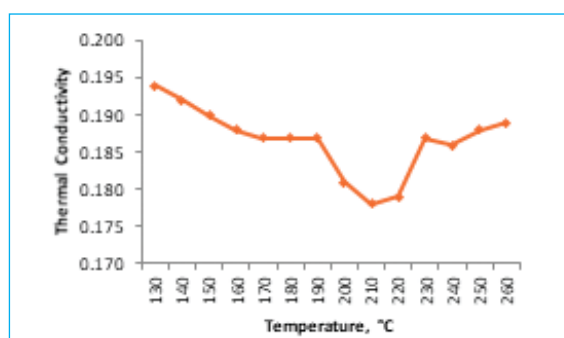


Fig 18

Capillary Rheometer to predict Melt Fracture (Surface Roughness) of HDPE Pipe

The critical shear stress for the onset of melt fracture can be determined from capillary rheometry study at HDPE pipe processing temperatures. HDPE pipe samples which yield the shear stress – shear rate curve below this critical shear stress would be considered as good samples without exhibiting melt fracture during processing Fig 19 & Fig 20.

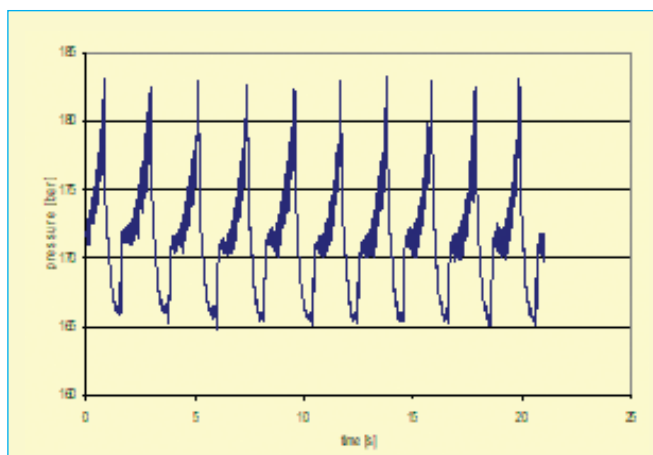


Fig 19

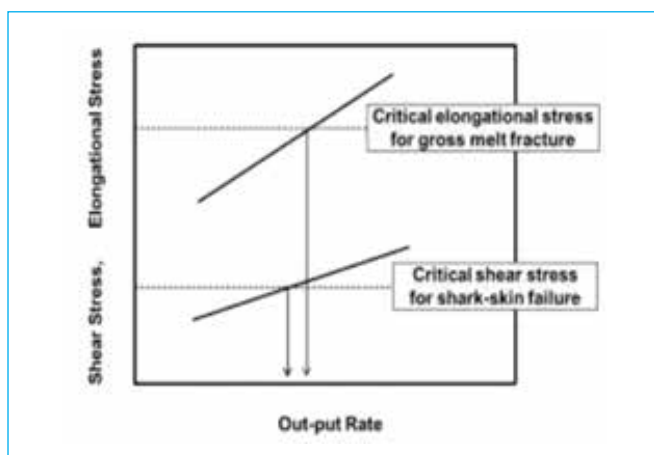
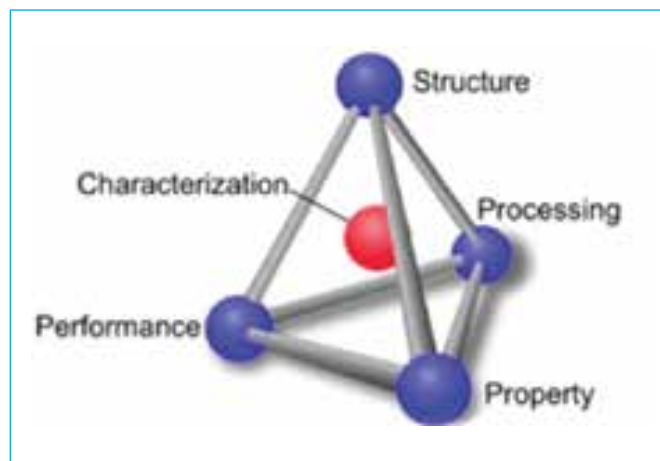


Fig 20

Conclusion

Rheology aims to understand and quantify the viscoelastic properties of a polymer so that the process parameters are aligned with the material's melt properties and hence should reflect in the finished product. The rheology of the polymer melt

provides direct information on the processability. Also, due to the viscoelastic nature of the melt which may cause wanted and unwanted anisotropy during flow, the final product also depends on how the material is being processed. Rheology is a key characterization technique for developing materials with the desired physical properties and for controlling the manufacturing process in order to ensure product quality.



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HELP DESK

For the benefit of its members, the Indian Plastics Federation (IPF) has decided to organise a helpdesk dedicated to issues related to taxation, extended producer responsibility (EPR), and micro, small, and medium enterprises (MSME). This initiative aims to provide IPF members with free consultation and guidance to address their specific problems in these areas.

The helpdesk will offer personalised assistance, helping members navigate the complexities of tax regulations, EPR compliance, and MSME-related concerns. By offering expert advice, the help desk seeks to empower members with the knowledge and resources necessary to optimise their business operations and ensure regulatory compliance.

IPF members are encouraged to send their queries via email to the Secretariat at office at office@ipfindia.org. This streamlined process will ensure that each query is addressed promptly and accurately, providing members with the support they need to resolve their issues efficiently. This initiative reflects IPF's commitment to supporting its members and fostering a robust, compliant, and thriving plastics industry in India.

ipf INDIAN PLASTICS FEDERATION EPR HELPDESK

Dear Members,

IPF is setting up an EPR helpdesk at the IPF office on the 2nd and 4th Saturday of each month from 3:00 pm to 5:00 pm starting from 9th March, 2024, for your convenience.

Free consultation will be provided on the following topics by React Waste Tech Pvt Ltd.

- EPR Registration and renewal process for PIBOs and PWP's on CPCB portal with detailed compliance
- Consultation on latest updates in rules and notifications issued by CPCB
- Target Execution and Annual Report Filling Process

Please send your queries to us at the following email IDs for consultation or assistance.

Ahana Ghosh: ahana@reactwastetech.com

Sheena Arora: sheena@reactwastetech.com

Vanshay Goenka: Vanshay@reactwastetech.com

With a cc to office@ipfindia.org

VANSHAY GOENKA

Chairman - EPR committee

(Disclaimer :- Any further services taken is at the sole discretion of the member after fully satisfying and IPF has no role in same.)

Phone 033-2217-5700 | 033-4604-7820 | +91 79808 04570 (OFFICE)

Send your queries 3 days in advance for effective addressal (office@ipfindia.org)

ipf INDIAN PLASTICS FEDERATION MSME HELPDESK

Dear Members,

IPF is setting up a MSME helpdesk at the IPF office on first Saturday of every month from 3:00 pm to 5:00 pm. The first meeting will be held on 2nd March, 2024.

Free consultation will be provided on the following topics by Suvidha Consultants Pvt. Ltd.

- MSME Incentive Schemes & Policies
- Project report & Finance
- Delayed Payment under MSME Samadhaan
- Udyam Registration
- Statutory licenses for setting up unit
- Startup Registration
- Advisory services for setting up new & expansion projects

Please book your time with by writing an e-mail at the following e-mail IDs for consultation or assistance.

Biswaroop Chakraborty: biswaroop@suvidhaconsultants.com
Suvra Chatterjee: suvra@suvidhaconsultants.com
Suvidha Office: suvidha@suvidhaconsultants.com

With a cc to office@ipfindia.org

Time slot will be provided on first come first serve basis

(Disclaimer :- Any further services taken is at the sole discretion of the member after fully satisfying and IPF has no role in same.)

Phone 033-2217-5700 | 033-4604-7820 | +91 79808 04570 (OFFICE)

Send your e-mail at least 3 days in advance for time slot booking (office@ipfindia.org)

ipf INDIAN PLASTICS FEDERATION TAXATION HELPDESK

Dear Members,

IPF is setting up a Taxation helpdesk at the IPF office on the 4th Saturday of each month from 1:00 pm to 3:00 pm starting from 23rd March, 2024, for your convenience.

Free consultation and guidance will be provided by CA Suruchi Agrawal

Please send your queries to us at the following email IDs for consultation or assistance.

CA Suruchi Agrawal : ag.suruchi05@gmail.com

With a cc to office@ipfindia.org

(Disclaimer :- Any further services taken is at the sole discretion of the member after fully satisfying and IPF has no role in same.)

Phone 033-2217-5700 | 033-4604-7820 | +91 79808 04570 (OFFICE)

Send your queries 3 days in advance for effective addressal (office@ipfindia.org)

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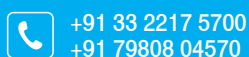
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membership fees

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- Monthly subscription to Plastics News Magazine "Plastics India".
- Access to all important information regarding the plastic industry.
- Join IPF Delegations to International Exhibitions. Chinaplas, & K Fair
- Web Banner Promotion/ Advertisements with a link to Members "website at a Concessional rate.
- IPF is a great networking platform to make & meet fellow Industry colleagues.
- Promote Plastic Parks in West Bengal.
- Receive invitations to Seminars, Conferences, Webinars, Training Programmes, Workshops.
- Representation in Trade Bodies & Committees of the Government of India which works towards the promotion of Plastics & Petrochemical industries.
- Make representation to various Ministries for Members' grievances on topics regarding the industry, environment, excise, Custom/ FTA, etc.
- Discounted rate for Members in Indplas exhibitions.



CONTACT US FOR MORE INFORMATION



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Plastic Exhibition At a Glance

Indexpo Indore 2024

13-15 October, 2024
Urban Haat, Indore
Organizer :
Indore Infoline Pvt. Ltd.

Fakuma 2024

15-19 October, 2024
Messe Friedrichshafen
Friedrichshafen, Germany
Organizer :
P. E. Schall GmbH & Co.

Iran Plast 2024

8-11 October, 2024
Tehran International
Permanent
Fairground, Iran
Organizer :
Complast- Complete
Plastics Exhibition

Plastex Uzbekistan 2024

2-4 November, 2024
Tahkent, Uzbekistan
Organizer :
Iteca Exhibitions, FE LLC

Complast Srilanka 2024

30 Aug - 1 Sep, 2024
BMITCH
Colombo, Srilanka
Organizer :
Smart Expos & Fairs Pvt. Ltd.

North East Plast Expo 2024

12-15 September, 2024
Sarusajai Sports Stadium,
Guwahati, Guwahati, Assam
Organizer :
The Eventage

Complast Kenya 2024

1-3 October, 2024
KICC
Nairobi, Kenya
Organizer :
Smart Expos & Fairs Pvt. Ltd.

8th Oman Plast 2024

15-17 October, 2024
Muscat Sultanate Of Oman
Oman - UAE
Organizer :
Silver Star Corporation
LLC. Muscat

Vietnam International Plastics And Rubber Industry Exhibition 2024

16-19 October, 2024
Convention Center
Ho Chi Minh, Vietnam
Organizer :
Chan Chao International
Co.,Ltd

Plastic Industry Show Moscow 2024

21-24 October, 2024
Expocentre Krasnaya
Presnya Fairgrounds
Moscow (Russia)
Organizer :
Expocentre Jsc

Complast Nepal 2024

28-30 November, 2024
Bhrikuti Mandap
Kathmandu, Nepal
Organizer :
Smart Expos & Fairs Pvt. Ltd.

Odisha Plast International Expo 2024

28 Nov - 1 Dec, 2024
Janata Maidan
Bhubaneswar, Odisha
Organizer :
Futurex Trade Fair
& Events Pvt. Ltd.

Plast Eurasia Istanbul 2024

4-7 December, 2024
Tuyap Fair Convention and
Congress Centre
Büyükkçekmece İstanbul
Organizer :
Tuyap Fairs & Exhibitions
Organization Inc.

Arabplast 2025

7-9 Januray, 2025
Sheikh Saeed Halls 1-3 &
Trade Centre Arena, Dubai
International Convention &
Exhibition Centre
Dubai, UAE
Organizer :
Al Fajer Information and
Services (AFIS)

The 17th Bangladesh International Plastics, Packaging & Printing Industrial Fair 2025

12-15 February, 2025
International Convention City
Basundhara (ICCB)
Dhaka, Bangladesh
Organizer :
Bangladesh Plastic Goods
Manufacturers & Exporters
Association, Yorkers Trade &
Marketing Service Co., Ltd.

Plastic Exhibition At a Glance

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28th February - 3rd March 2025
Biswa Bangla Mela Prangan
(Milan Mela) Kolkata, India

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Saudi Plastics & Petrochem 2025

12-15 May, 2025
Riyadh International
Convention & Exhibition
Center, Riyadh, Saudi Arabia
Organizer :
Riyadh Exhibitions
Company Ltd. (REC)

Plastic & Rubber Thailand 2025

14-17 May, 2025
Bangkok International Trade
& Exhibition Centre (BITEC)
Bangkok, Thailand
Organizer :
Informa Market &
Messe Dusseldorf Asia

Hanoi Plas 2025

4-7 June, 2025
Hanoi International Center
for Exhibition
Hanoi, Vietnam
Organizer :
Chan Chao International
Co., Ltd. Yorkers Exhibition
Service Vietnam

Plastic Expo 2025

7-8 June, 2025
Exhibition Center and
International Trade Center
of Tunis
Tunis - Tunisia
Organizer :
Society of International
Fairs of Tunis.

Interplas Thailand 2025

18-21 June, 2025
Bangkok International
Trade & Exhibition Centre
(BITEC) Bangkok, Thailand
Organizer :
Rx Tradeex

Paperex 2025

03-06 December, 2025
International Convention
& Expo Centre (IICC)
Yashobhoomi, Dwarka,
New Delhi
Organizer :
Hyve India

Plasticon 2025

Date To Be Announced
Venue To Be Announced
Dubai (UAE)
Organizer :
GPCA (Gulf Petrochemicals
& Chemicals Association)

14th DIE & MOULD INDIA INTERNATIONAL EXHIBITION 2026

21-24 April, 2026
Bombay Exhibition Centre
Mumbai
Organizer :
Tool and Gauge
Manufacturers Association
of India (TAGMA)

Hiplex International Plastics Expo 2026

7-10 August, 2026
Hitex Exhibitor Centre
Hyderabad, India
Organizer :
Telanagana & Andhra
Plastics Manufactures
Association

Plast 2026

Date To Be Announced
Milanofiori Business Center
Milan, Italy
Organizer :
Promaplast srl

Plastivision 2027

21-25 January, 2027
Bombay Exhibition Centre
Metro Station Goregaon,
Mumbai
Organizer :
AIPMA

Plastfocus 2027

10-14 December, 2027
India International Convention
& Expo Centre(IICC)
Dwaraka, New Delhi
Organizer :
Triune Exhibitors Pvt Ltd.




KUSHAL PALLI
PRESENTS

AJODHYA HILL Marathon

RUN FOR TRIBALS



Event Organizer **ENDURANCE**
SPORTS

Ajodhya Hill Marathon

Dear Sir,

The Indian Plastic Federation in the month of February, 2024 became the recycling partner for the Ajodhya Hill Marathon "Run for tribals" initiative the even was organized at recognising the potential amongst tribal population about different sports in association with Kushal Educational Foundation on the Ajodhya Hills, Purulia district, West Bengal

The IPF executive committee under the able leadership of its President Mr Lalit Agarwal associated as recycle partner for the event as such large-scale events tend to generate a lot of Plastic waste in terms of discarded plastic bottles and other items. The plastic federation through its deployed volunteers ensured that all such discarded materials were collected and properly disposed/ recycled.

The Indian Plastic Federations initiative further show cased the need and methodology required for right disposal of plastic to the local tribal people who had participated in the event, such training is what would allow the population of the region to keep the hills clean. IPF through its initiatives have allowed several young individuals to learn more about waste disposal.

Ajodhya Hills Marathon- "Run for tribals" was first of a kind event in the country and IPF proudly associates with it to be the flag bearer for proper waste disposal and judicious use of plastic, such sports event are a good place to interact with a lot young people and also further the vast knowledge of IPF and its members that are involved in plastic processing/manufacturing.

With its continued association IPF further wishes to undertake the activity of training and imparting knowledge about the topic to many more areas where such training is need of the hour, achieving clean disposal and zero impact to the environment by plastics remains the goal of IPF and its partners towards ensuring responsible production and responsible disposal.

Thanks & Regards

Kushal Agarwal



Member Speaks



I am writing to express my gratitude for the insightful workshop on AI tools that I attended recently. The workshop was exceptionally well-organized, providing a clear and practical introduction to various AI technologies.

I found the session to be highly informative, covering essential concepts which we should incorporate in our organisation for better results and improved productivity. The hands-on exercises were particularly valuable as they allowed me to apply theoretical knowledge in a guided setting, enhancing my understanding of AI tools.

I look forward to future workshops, hoping to delve deeper into advanced AI topics and explore the latest developments in the field. Thank you once again for an enriching learning experience.

Best regards,
Vikram Aditya Kandoi
Creative Poly Packs Private Limited

Attending Rahul Jain's seminar was a transformative experience. His insights into leadership and personal development were both profound and actionable. The session was very interactive, engaging and inspiring.

I thank IPF Body for organising this event.

Best Regards,
Mayank Nemani
Vijay Enterprise



The holi get together was well organised by the Indian Plastics Federation Cultural Committee. This programme fosters unity among the members, and families are also invited. The Kavi Sammelan, the thandais, and the dinner were excellent.

My family and I enjoyed the function with the tagline "Holi ke rang apno ke sang". Thanks to IPF and the organising committee members.

Best regards,
Shri Harish Maheshwari
Maheshwari Plastics

I am delighted to attend the seminar on artificial intelligence organised by Indian Plastics Federation. It has been an enriching experience to learn about innovative ways to promote business using AI. As a member of the IPF, I am proud of the seminar committee for organising this impactful event.

Congratulations to the IPF team for their successful efforts in bringing this meaningful programme to fruition.

Shri Sudip Agarwal
Neha Enterprise

I recently attended the GST seminar organised by the Indian Plastics Federation (IPF). It was an incredibly informative session that provided a deep dive into the complexities of GST and its implications for businesses. The speakers were highly knowledgeable, and their insights were invaluable.

I would like to extend my gratitude to IPF for organising such a well-structured and educational event. I thoroughly enjoyed the session and look forward to attending more in the future.

Shreyas Dhanuka
Aditi Plastics Pvt Ltd

The Indian Plastics Federation had organised a very learning session on 'Double your profit' with Mr. Rahul Jain. The programme was very well organised by the seminar committee and as a member we want IPF to organize such event in the future also.

Shri Sudip Agarwal
Neha Enterprise

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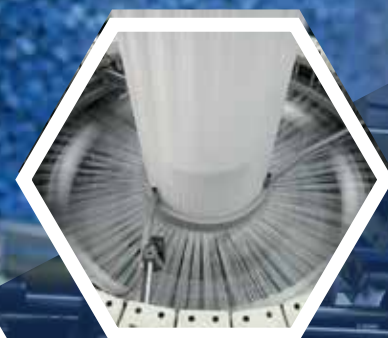


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