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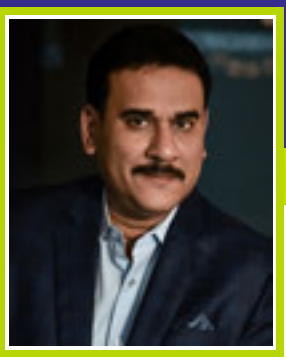
PLASTISCOPE

The Official Journal of the Organization of Plastics Processors of India

Volume No. 13 • Issue No. 09 • Mumbai • March 2025

FROM THE PRESIDENT's DESK

Mr. Pradeep Rathod



OPP

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Dear Members,

Greetings from Organization of Plastics Processors of India!

I am interacting with you as we approach the end of the Financial Year 2024 – 2025.

Fiscal deficit is targeted at 4.9% of GDP in 2024 – 2025, lower than the actuals for 2023 – 2024 (5.6% of GDP). The lower fiscal deficit is on account of receipts growing at 15%, which is higher than the expenditure growth of 8.5% GDP growth estimate. The nominal GDP is estimated to grow at a rate of 10.5% in 2024 – 2025.

In Financial Year 2024 – 2025, the Indian Plastics Industry is expected to continue its growth with projections suggesting a market size of USD 48.5 billion in 2025 and a CAGR of greater than 6.4% to reach USD 68 billion by 2030.

Organization of Plastics Processors of India had organized an unique event - "Pearls of Wisdom from Startup Founders" on 7th March 2025 at Jio World Convention Centre. We had 11 founders of Startups making presentations on very important topics in this event. A detailed report of this event appears in this issue of Plastiscope.

Since last two months the Corporate India has been constantly debating on – Impact of Reciprocal Tariff on Products being Exported to USA. I assure all members that OPPI has been working very closely with the Department of Chemicals and Petrochemicals on this subject to ensure that there is no unreasonable customs duty on plastic products exported from India to USA. We have also represented on the Non – Tariff Barriers faced by Indian Plastic Processors while exporting to USA.

It was informed to you earlier that OPPI has organized a visit to CIPET, Chennai and also to the plant of Shibaura Machine India Pvt. Ltd., Chennai on 11th April 2025. The objective of this visit is to ease the process of sourcing the Plastic Engineers / Technologists.

Shibaura being a Japanese company, the participants will be able to observe best practices in manufacturing and automation.

A visit to Chakan Plant of Mahindra's EV Car Project is organized on Friday 9th May 2025. This visit is on first come, first served basis.

With Best Wishes,

Pradeep Rathod
President,OPPI

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Editor: **DEEPAK LAWALE**

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Plastics Processors Of India

ADVERTISEMENT IN OPPI DIRECTORY- 2026

With the fast changing business environment and the growing competitive world, it becomes important for all those connected with the Plastics Industry to increase the visibility of their activities.

Organization of Plastics Processors of India will be publishing Membership Directory 2026.The directory will be distributed to all OPPI members, Plastic Associations in India, Major Chambers of Commerce and Industry/Industry Associations in India and abroad, Trade Promotion Organizations, Financial Institutions and Diplomatic Missions.

Unique features associated with OPPI Directory 2026:-

- OPPI Directory distributed in all International exhibitions promoted by OPPI. Advertisers get noticed by the importers in various countries.
- Advertisement in OPPI Directory gives wide publicity to products and services of advertising company.
- MNCs setting shop in India refer to OPPI Directory for outsourcing their requirement of plastic products from India.
- Multi-national Retail Chains refer to OPPI Directory for outsourcing their requirements of plastics based goods; flexible packaging material etc.
- Foreign Plastics Processing Machinery Manufacturers, polymer producers etc. consider OPPI Directory as a reliable aid to reach their target customers in India.

Please Contact

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Business Delegation To Qatar - 20th to 21st April 2025

Delighted to inform you that OPPI is organizing a Business Delegation to Qatar from 20th & 21st April 2025.

OPPI has done a comprehensive study of the various Gulf Countries to ascertain the most favorable destination country to establish Plastic Processing Factories.

It has been observed that the following parameters make Qatar the most favorable country for establishing Plastic Processing units beyond the shores of India:-

Qatar is located in the heart of the Gulf, at the intersection of three continents

Population	3 million
GDP(PPP) per capita	~USD97,000 among the world's richest
Internet penetration	99%of total population among the world's highest
Natural gas production	170 billion m3 among the world's largest LNG exporters
Healthcare system	77.4 doctors per 10,000 population among the world's best
Credit rating	Aa2 (Moody's) QAR pegged to USD at a rate of 3.64

• **QatarEnergy** has the mandate for the supply /distribution of the products produced by its subsidiaries including QAPCO.

• **Qatar Free Zones (QFZ)** can support with the provision of infrastructure facilities and regulatory framework for establishment of the companies and businesses in Qatar Free Zone.

• **Cost of land and also the lease for the same.** QFZ starting lease rate for industrial land in Um Al Houl Free Zone site is Qatari Riyals10/sqm/-year. Lease duration 20-25 years.

• **Tariff of Power Supply.** QR 0.13/ kwh or ~3.6 US cents/kwh as per Qatar General Electricity and Water Corporation (Kahramaa) tariff rates for industrial consumers. Investors will enter into electricity and water supply / SPA agreement directly with Kahramaa.
QFZ provides 11 KV / 50 Hz power supply connection at the battery limits of the allocated plot.

• **Minimum and maximum plot size.** Typical min. size: 10,000 sqm. approx., maximum plot area will depend upon project requirement and availability of developed land.

• **Availability of water and tariff for the same.**

Desalinated water (potable water quality) is supplied by Kahramaa. Water connection tie in point will be at battery limits of the plot. End user will enter in direct agreement with Kahramaa.

Kahramaa's current tariff for water is QR 5.4/ m3 or ~1.5$/ m3.

•**Availability of storm water drainage system.**

Each plot has access / connection to potable water, foul domestic sewerage, fire water, storm water upon completion.

• **Availability of skilled manpower.**

Qatar has invested in the knowledge economy's four pillars to attract the best companies and brightest talent in the world.

Qatar has attracted companies like Google, Microsoft and Thales.

Knowledge-based economy is built on four pillars: human capital; digital infrastructure; an enabling regulatory environment; and a critical mass of existing innovation hubs and clusters. Qatar has created an economy that is capable of growing the industries of tomorrow.

• **Nearness to sea port with all infrastructure.**

Strategically Located: Qatar sits in the heart of the Gulf with access to GCC and the wider Middle East, and over 60% of the world's population within eight hours fly-time. Qatar Free Zones connect the investors to key global markets and supply chains through Qatar's award-winning air and seaports, which are both on the doorstep of Free Zones.

• **Availability of education, healthcare, residential houses.**

Ranked the safest country in the world with extremely low crime rates, coupled with world-class schools and universities, cultural attractions, great recreational facilities, and a global cuisine by leading restauranteurs from around the world.

• **Corporate Taxation Structure**

Qatar State tax obligations including withholding tax does not apply to free zone entities and there are no corporate tax filing requirements in the QFZ. QFZ entities currently enjoy a 20-year corporate income tax benefit, which may be extended subject to the approval of the Council of Ministers.

With respect to custom duties, as per QFZ Law, QFZ entities are exempted from custom duties when importing into the QFZ and exporting outside Qatar. However, goods and products exported from the QFZ to the local market within Qatar will be subject to applicable custom duties.

I write to cordially invite you to join the delegation. May I request you to confirm your participation through the attached registration form. For registration and further information, kindly contact the undersigned.

To defray part of the secretarial expenses, we are obliged to charge a "Delegate Fee (Per Person)" of INR 28,000 + 18% GST. This "Delegate Fee" is meant for meeting a part of the organizational costs only. All travel related expenses- Airfare/ Personal/ Local Travel-related, and others have to be borne by the delegates themselves.

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STUDY MISSION TO CIPET AND SHIBAURA MACHINE INDIA PVT. LTD., CHENNAI - FRIDAY 11TH APRIL 2025

VISIT TO CIPET, CHENNAI

All Plastic Companies have to recruit persons with background in Plastics Engineering and Technology at different levels. Central Institute of Petrochemicals Technology – CIPET has state of the art laboratories. The centre is an ISO 9001: 2015 certified institution for its Academic and Technology Support Services and the Plastics Testing Centre is accredited by NABL as per ISO/IEC 17025:2005 for Quality Control and Testing of raw materials and products of plastics.

CIPET conducts Post Graduation Programmes in CAD/CAM; Under Graduate Degree Programme; Post Graduate Diploma Programmes; Diploma in Plastics Mould Technology etc.

VISIT TO SHIBAURA MACHINE INDIA PVT. LTD., CHEMBARAMBAKKAM, CHENNAI

In the post lunch session the delegation will visit plant of Shibaura Machine India Pvt. Ltd.

Shibaura Machine India Pvt. Ltd. (abbreviated as SMI), is among the leading high-end plastic injection moulding and auxiliary equipment manufacturers in India. SMI is a wholly owned company of Shibaura Machine Company of Japan.

- Learn best practices in manufacturing and automation.
- To gain first-hand exposure to various innovative and good practices that augment the quality and adapt technology.

To defray part of the administrative expenses, the participation fees will be Rs. 4600+GST @18%.

The registration will be confirmed on the receipt of the participation fees and the duly completed application.

Registration will be on first come first serve basis. Please fill up the Application attached herewith and mail to:-

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Injection Molding Machine

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Yizumi Advanced Processing Technology Pvt. Ltd.

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Contact No. : +91-90999 06175 Email address: info.ind@yizumi.com Website: www.yizumi.com

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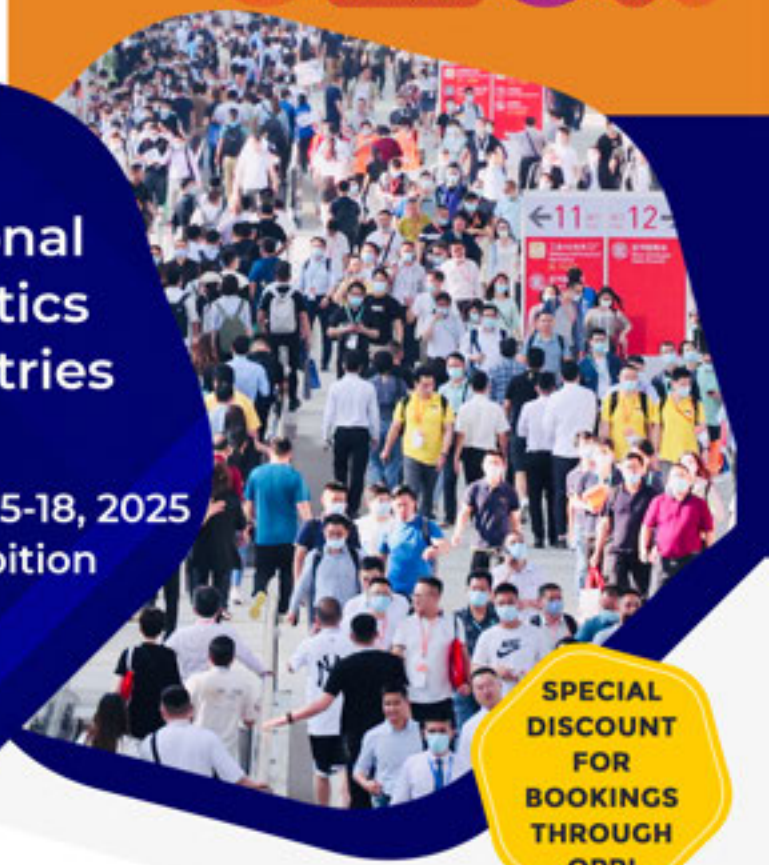
Chinaplas 2025

Chinaplas
国际橡塑展

2025.4.15-18

中国·深圳国际会展中心(宝安)
Shenzhen World Exhibition & Convention Center (Bao'an), PR China



The 37th International Exhibition on Plastics and Rubber Industries

CHINAPLAS 2025 - April 15-18, 2025 at Shenzhen World Exhibition and Convention Center (Bao'an), PR China.

SPECIAL DISCOUNT FOR BOOKINGS THROUGH OPPI

Coming up next is CHINAPLAS 2025 - The 37th International Exhibition on Plastics and Rubber Industries - to be held at Shenzhen World Exhibition and Convention Center (Bao'an), PR China from 15th to 18th April 2025.

The delegates will be taken for a visit to YIZUMI plant at Foshan, China.

Organization of Plastic Processors of India has tied up with Tibro Tours Pvt. Ltd. for CHINAPLAS 2025 packages. All Companies booking Tibro Packages CHINAPLAS 2025 through Organization of Plastic Processors of India will be eligible for discount.

Please find attached herewith Tibro's Standard Launched packages based on hotel options. Kindly write to us to secure your travel arrangements on confirmed basis.

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VIETNAMPRINTPACK 2025

The 23rd Vietnam Int'l Printing & Packaging Industry Exhibition
10-13 September 2025
Saigon Exhibition & Conference Center (SECC)
Ho Chi Minh City, Vietnam

We have the pleasure of inviting you to participate in VietnamPrintPack 2025 scheduled from 10-13 September 2025 at Saigon Exhibition & Conference Center (SECC), Ho Chi Minh City, Vietnam

2024 VIETNAM EXPO AT GLANCE

Exhibitors	Gross Space (sqm)	Booths	Visitors
382	19.850	900	20.880

PARTICIPATION FEES:

- Shell Scheme (Minimum 9 sqm): USD 320
- Including Needle Punch Carpet: Wall Partitions, Carpet, Company Fascia, 3
- Folding Chairs, 3 Spotlights, 1 Reception Table, 1 Round table, 1 Dustbin, 1 Single Phase 5 amp/ 220v Plug.
- Raw Space Only (Minimum 36 sqm): USD 300/sqm

Please fill up the contract form attached herewith and Email scanned copy of filled Application form to secretarygeneral@oppindia.org

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The World's No. 1 Trade Fair
for Plastics and Rubber
8–15 October 2025
Düsseldorf, Germany

K 2025 – INTERNATIONAL TRADE FAIR ON PLASTICS AND RUBBER – IS TO BE HELD IN MESSE DÜSSELDORF GMBH, GERMANY FROM 8TH – 15TH OCTOBER 2025.

In K 2025 it will once again be the most prestigious event on the industry's calendar and the starting point for decisions that shape future products, processes and solutions.

SPECIAL DISCOUNT FOR BOOKINGS THROUGH OPPI

HOT TOPICS OF K 2025

- Circular Economy
- Digitalisation
- Coding about people

Organization of Plastic Processors of India has tied up with Tibro Tours Pvt. Ltd. for K 2026 packages.

All Companies booking Tibro Packages for K 2026 through Organization of Plastic Processors of India will be eligible for special discount.

Please find attached herewith Tibro's Standard packages based on hotel options.

Kindly write to us to secure your travel arrangements on confirmed basis.

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37 YEARS OF SERVICES TO PLASTICS INDUSTRY

SERVICES OFFERED BY OPPI

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HanoiPlas

The 13th Hanoi Int'l Plastics and Rubber Industry Exhibition
4th to 7th JUNE 2025
Hanoi International Center for Exhibition (I.C.E) Hanoi, Vietnam

EXHIBIT PROFILE

Plastic & Rubber Machinery, Chemical & Raw Materials, Machinery Auxiliary Industry, Heat & Control Equipment, Mould, Hydraulic & Pneumatic, Recycling, Dosing equipment, Mixers, Silo systems, Software

POST SHOW REPORT 2024

Exhibitors	Exhibitors From	Visitors	Space
220	13 Countries	7,832	9000 sqm

PARTICIPATION FEES

Standard Booth:

USD 310 / sqm (Min. 9 sqm) = USD2790

Standard Equipped : Wall Partitions, Carpet, Company Fascia, 3 Folding Chairs, Three 50W Long Arm LED Light, 1 Reception Table, 1 Round table, 1 Dustbin, 1 Single Phase 5 amp/220v Plug.

Raw Space:

USD 280 / sqm (Min. 18 sqm)

Corner fee: 10% surcharge 5% VAT will be applicable on invoice

Form is attached. Kindly email the scanned copy of duly filled Space Application Form to secretarygeneral@oppindia.org

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"Pearls Of Wisdom From Startup Founders" - 7th March 2025 - Jio World Convention Centre, BKC, Mumbai.

The event - "Pearls Of Wisdom From Startup Founders" was held on Friday 7th March 2025 At Jio World Convention Centre, BKC, Mumbai.

Mr. Jeenendra Bhandari, Chairman at JITO FY 24-26 was the Chief Guest at Inaugural Session.

Mr. C. Bhaskar, Managing Director & CEO, XPRO INDIA LTD., Ex-President, OPPI and currently member of the Executive Committee delivered the Welcome Address.

In his Welcome Speech Mr. C. Bhaskar mentioned – "The simple phrase startup has come to represent unlimited opportunity with tremendous challenges more so within the changing face and landscape of Bharat. What is a "start-up"? One definition sees startups as businesses that want to disrupt industries and change the world and do it all at scale. Startup founders dream of giving society something it needs but hasn't created yet - while generating eye-popping valuations that could lead to an IPO and an astronomical return on investment. Rooted in innovation, a startup teams to remedy deficiencies of existing products or create entirely new categories of goods and services, disrupting entrenched ways of thinking and doing business."

Mr. Bhaskar further stated, "To guide us through this challenging environment we are fortunate to have with us today a number of founders who have successfully navigated the startup network and have so willingly come forward to share their knowledge and experience with us. We are particularly fortunate to have with us as Chief Guest and also to present the keynote address, Sri Jinendra Bhandari Chairman of the JITO incubation & Innovation Foundation which is a platform for JITO members and which offers them first hand access to the Indian and global startup system. JITO's incubation and Angel network arm focuses on fostering entrepreneurship and in the 6-7 years that it has been around has an active member base of 1000 Jain investors from within the JITO network."

In his Welcome Address Mr. C. Bhaskar while introducing the Chief Guest said – "Mr. Jeenendra Bhandari is Partner at MGB, a 46+ year old professional services firm which has more than 400+ people in 6 offices in India and Dubai. JB as he is called is a CA, CPA from USA - left Arthur Andersen to join MGB, his family firm. He was the Chairman of Young Indians (youth wing) of CII. Mr. Jeenendra Bhandari also held the post of of the 'Young Leaders Forum' (youth wing) of Indian Merchants' Chamber. He was also the Chairman of Board of Advisors of AIESEC (Association Internationale des Étudiants en Sciences Économiques ET Commerciales), a students' body, present in over 125 countries."

Mr. Jeenendra Bhandari made a Presentation on – "Identifying the Next Soonicorn".

Mr. Jeenendra Bhandari defined "SOONICORN" as given below:-

- A high-growth startup on track to achieve a $1 billion valuation (Unicorn status). In the Indian context, this often refers to startups valued between $200M and $1B. India is estimated to have 250 unicorns by 2025.

India's Soonicorn Landscape (FY-23):-

- 112 Soonicorns In India
- $15BN+ Total Funding Raised by Soonicorns
- $40BN+ Combined Valuation of Indian Soonicorns
- 95+ Companies Acquired by Indian Soonicorns
- 1.26 LAKH+ Jobs Created by Indian Soonicorns

- The current Soonicorn club (112 unicorns) has 55 startups from the both E-Commerce and Fintech combined.

- Mr. Jeenendra Bhandari mentioned the following Key Traits and Indicators for Soonicorns:-

1. Rapid Growth

- Explosive growth in revenue, user base, or market share.
- CRED, which rapidly expanded its user base by offering exclusive rewards.

2. Disruptive Innovation

- Pioneering new technologies/models
- Ola & Uber leveraging technology to connect riders and drivers

3. Large Addressable Market

- Targeting markets with significant potential for growth
- Zomato and Swiggy capitalized on the growing demand for food delivery services

4. Strong Leadership

- Experienced and Visionary leaders are crucial
- Leadership at Zerodha, which democratized stock trading by offering discount brokerage services

5. Scalable Business Model

- Business models that can be easily replicated and expanded
- Delhivery, a logistics company, built a robust network that handles increasing volumes of deliveries

Mr. Jeenedra Bhandari also illustrated his talk with case studies on – Atomberg Technologies, Battery Smart.

Mr. Jeenendra Bhandari also mentioned the following changes faced by Soonicorns:-

- Strong Competition
- Regulatory Hurdles
- Talent Acquisition & Retention
- Funding Constraint
- Sustainable Models
- Geopolitical Risks

Mr. Deepak Lawale while proposing Vote of Thanks, thanked Mr. Jeenedra Bhandari and the Speakers - Dr. Vivek Tandon, Jitesh Dadlani, Amit Tandon, Vishnu Korde, Teja Edara, Param Chheda, Sachin Rane, Anshumaan Bansal, Ritesh Kumar and Ms. Maya Rao for accepting the invitation to make Presentations at the event.

Mr. Deepak Lawale also expressed gratitude to the Sponsors - Cello World Ltd. and Xpro India Ltd.

During the event the following Presentations were made:-

Sr. No.	Topic of Presentation	Speaker
1.	Chemical and Mechanical Recycling of PET Plastic: India the Global Leader	Dr. Vivek Tandon Founder, Revalyu
2.	Building an Innovation Driven Venture for Plastic Sector in India	Mr. Jitesh Dadlani Founder, Ishitva Robotic Systems
3.	Chemical Recycling: Paving the Path for a Circular Economy in India	Mr. Amit Tandon CEO, PolyCycl
4.	From Automation to Autonomy: The Rise of Intelligent Systems	Mr. Vishnu Korde Founder, DeCloud Labs
5.	The Future of Compliance in Manufacturing: Leveraging Technology to Turn Compliance into a Competitive Advantage	Mr. Teja Edara Co-Founder and CEO, BPR Hub
6.	The Startup Blueprint: From Idea to Execution!	Mr. Param Chheda - Director, Prince Multiplast Pvt. Ltd. and Founder and Director, Hekaté Industries Pvt. Ltd.
7.	Edge Over the Competition: Identifying Gaps for Market Domination	Mr. Sachin Rane CEO, Team24 Foods and Beverages Pvt. Ltd.
8.	"From Boardroom To Breakthrough: Navigating The Leap From Corporate Leadership To Entrepreneurial Success"	Ms. Maya Rao
9.	Balancing Tradition and Technology: How AI Can Amplify Your Business Strengths	Mr. Anshumaan Bansal Founder, YogaAmie
10.	Digitizing SME Manufacturing: A Mission Critical for India's Economic Ascent	Mr. Ritesh Kumar - Co-Founder & CEO, TranZact

Lighting of the Traditional Lamp – (L to R) M/s Jeenendra Bhandari, Madhusudan Jangid, Shirish Divgi, Vishnu Korde(in the rear) & C. Bhaskar.

Mr. C. Bhaskar, Managing Director & CEO, Xpro India Ltd. delivering his Welcome Address.

Mr. C. Bhaskar (Right) presenting a bouquet to Mr. Jeenendra Bhandari.

Mr. Jeenendra Bhandari making his Presentation on – "Identifying the Next Soonicorn"

(L to R) Mr. Jeenendra Bhandari receiving memento from Mr. Madhusudan Jangid, Mr. C. Bhaskar is in the Centre.

Mr. Shirish Divgi, CEO, Electro Pneumatics and Hydraulics (India) Pvt. Ltd. (with mic) chaired the First Session.

Dr. Vivek Tandon, Founder, Revalyu delivering his talk.

Mr. Jitesh Dadlani, Founder, Ishitva Robotic Systems addressing the audience.

Mr. Amit Tandon, CEO, PolyCycl making his Presentation.

Mr. Deepak Lawale falicitating Mr. Shirish Divgi.

(L to R) M/s Deepak Lawale, Jitesh Dadlani, Vivek Tondon, Shirish Divgi & Amit Tondon

Dr. Justin Paul, Provost & Dean, NMIMS University introducing the Speakers of his Session.

Mr. Vishu Korde, Founder, DeCloud Labs making his Presentation on – "From Automation to Autonomy: The Rise of Intelligent Systems".

Mr. Teja Edara, Co-Founder and CEO, BPR Hub spoke on – "Compliances in Manufacturing Indusrty".

(L to R) M/s Mukesh Kothari, COO, Cello World; Deepak Lawale, Secretary General, OPPI & Madhusudan Jangid, CFO Cello World.

Mr. Aryaman Vikamsey (Centre) chaired the Post-lunch Session

Mr. Param Chheda - Founder and Director, Hekaté Industries Pvt. Ltd. making his Presentation.

Mr. Sachin Rane, CEO, Team24 Foods and Beverages Pvt. Ltd. made a Presentation on – "Edge Over the Competition: Identifying Gaps for Market Domination.

(Left) Mr. Aryaman Vikamsey, Tibro presenting memento to Mr. Param Chheda.

Mr. Deepak Lawale presenting memento to Mr. Aryaman Vikamsey.

(L to R) M/s Deepak Lawale, Aryaman Vikamsey, Sachin Rane, Param Chheda.

Dr. Shreekant Diwan, Baerlocher India Additives Pvt. Ltd. speaking as Session Chairman.

Ms. Maya Rao delivering a Presentation on - "From Boardroom To Breakthrough: Navigating The Leap From Corporate Leadership To Entrepreneurial Success"

Mr. Anshumaan Bansal, Founder, YogaAmie making his Presenation on – "Balancing Tradition and Technology: How AI Can Amplify Your Business Strengths"

Dr. Diwan Presenting memento to Mr. Ritesh Kumar - Co-Founder & CEO, TranZact

(L to R) Mr. Vishnu Korde, Dr. Justin Paul, Mr. Teja Edara.

(L to R) Mr. Deepak Lawale, Mr. Ritesh Kumar, Dr. Shreekant Diwan, Ms. Maya Rao, Mr. Anshumaan Bansal

Mr. Chetan Solanki, Nilkamal Limited (Right) receiving his gift as Lucky Draw Winner.

Mr. Manpreet Singh, Cosmo Films Ltd. receiving his gift as Lucky Draw Winner.

AUTOTECH – SIRMAX INDIA Completes Expansion at Palwal Plant, Doubling Capacity to 30 kTPA

Autotech - Sirmax India Pvt. Ltd. (ASIPL), a dynamic joint venture between Tipco Group (since 1945) and Sirmax SpA (since 1961), a global leader in Polypropylene and Engineering Thermoplastics compounds has successfully completed its expansion at the Palwal plant, Haryana (NCR region).

With this expansion, the Palwal plant has doubled its production capacity from 15 kTPA to over 30 kTPA, reinforcing the company's commitment to supporting the increasing demand for high - performance thermoplastic compounds across various industries including automotive, EV, electricals & electronics, white goods and industrial applications.

Palwal Plant Expansion – A Step Towards Future Growth

The expansion project at Palwal included a comprehensive up-gradation and modernization of the existing plant, along with significant investments in new machinery, advanced manufacturing technology and infrastructure development.

The key highlights of the Palwal expansion project include:

- **Investment in state - of - the - art machinery –** Installation of a high-speed, high output twin-screw extrusion line with the latest mega-torque technology to manufacture advanced PP, PA6, PA66, PBT, PC/ABS, PC/PBT, Biopolymers, Long-Glass Fibre compounds and specialty blends.
- **Expansion of the production area –** Addition of 65,000 sq. ft. of new shop floor space to accommodate future capacity expansion with provision for four additional high-output extrusion lines.
- **New warehouse and automated material handling systems –** Enhancing supply chain efficiency and streamlining logistics to better serve customers.
- **Increased focus on sustainability –** Development of Circular Economy materials and Biodegradable Compounds to support OEMs in achieving their carbon footprint reduction goals.

- **Enhanced plant infrastructure** – Debottlenecking of existing processes, upgraded utilities and technology transfer from Sirmax Group to align with global manufacturing standards.

This expansion not only strengthens **Autotech-Sirmax India's** footprint in the Indian market but also reinforces its **commitment to delivering innovative, high performance thermoplastic compounds to customers in India, South-East Asia and global markets.**

Leadership Insights on the Expansion

Speaking about this milestone, **Mr. Achal Thakkar, Managing Director of AutotechSirmax India,** stated:

"We are proud to announce the completion of our Palwal plant expansion, which reflects our dedication to delivering world-class materials and solutions to our customers. This investment enables us to meet the rapidly growing demand for high-performance compounds in India and international markets, while also strengthening our capability to drive sustainable innovations."

The Palwal expansion also aligns with **Autotech - Sirmax India's broader growth strategy,** which includes its **greenfield expansion near Bengaluru-Hosur, South India,** further reinforcing its presence in key manufacturing hubs across India.

With the completion of this expansion, **Autotech-Sirmax India now operates with a total installed capacity of over 60 kTPA across its facilities in Valsad (Gujarat) and Palwal (Haryana),** making it one of the leading manufacturers of **engineering thermoplastics and polypropylene-based compounds in India.**

About Autotech - Sirmax India Pvt. Ltd. (ASIPL) – It is a leading manufacturer of Thermoplastics Compounds, Bio-Degradable Compounds, Elastomers, and Circular Economy materials, catering to industries such as Automotive, White Goods, Appliances, Building and Construction and Electricals and Electronics.

With a legacy of excellence, Autotech-Sirmax India continues to push the boundaries of innovation, sustainability and customer-centric solutions, offering premium thermoplastic materials for OEMs and industrial customers worldwide.

BC Jindal Group's JPFL Films Becomes India's First Packaging Manufacturer to Launch BOPA Nylon Films; Invests Rs. 120 crore

JPFL Films Private Limited, a subsidiary of India's biggest flexible packaging company, Jindal Poly Films Ltd, has announced that it has become the first player to launch Biaxially Oriented Polyamide (BOPA) Nylon films in India. JPFL Films Private Limited has invested Rs. 120 crore at its state-of-the-art facility in Nasik.

This unveiling of BOPA Nylon Films is in line with the Government's 'Make in India' initiative and a strategic move to bolster the company's growth. This new product launch mirrors the company's commitment to infuse technological advancement and innovation in manufacturing processes, enhance quality, optimize costs and ensure enhanced customer satisfaction. This investment also reiterates the strong commitment of the company to the Indian market.

Speaking on the launch, Dr. Mahesh N. Gopalasamudram, Deputy CEO (Growth Division), JPFL Films, "With the launch of BOPA Nylon Films, JPFL Films Private Limited has emerged as the first player to bring the innovation to the Indian market. This unique product offers improved mechanical properties and aroma barrier. This will also play a pivotal role in bringing solutions across pharma, medical, FMCG and food applications. It will be noteworthy to point out that 100% of these films were imported till recently."

One of the main characteristics of this unique offering is its isotropicity (same set of characteristics or properties in all directions) produced in exclusive Japanese double bubble film technology that promises dimensional stability puncture resistant and

homogeneity across the length and width of the product. In addition, the product is suitable for high speed printing and serves as an effective barrier for aroma and gases.

"BOPA films is also produced by our group company Jindal Nylon films in Italy. This experience will also help us in serving the Indian customers and bringing global innovation locally," Dr. Mahesh N. Gopalasamudram added.

About Jindal Poly Films Ltd & BC Jindal Group: Jindal Poly Films (JPFL) started the flexible packaging films business in 1996 and has grown into a >USD 500 million turnover company with 2500+ workforce. JPFL focuses on building trust with and creating value for all stakeholders through its scale, innovation, advanced technologies and cost efficiencies. The company has demonstrated growth via the execution of capital-intensive projects and multiple acquisitions. JPFL Films, a key subsidiary, is the largest flexible packaging films manufacturer in India and provides a one-stop solution to its customers across all segments. Its Nasik Plant is the world's largest single location facility for the manufacturing of flexible packaging films.

The US$ 2.5 billion BC Jindal Group is amongst India's leading business houses. Established in 1952, the group has a diverse workforce of more than 10,000 people across India, Europe, and the US. Key business verticals include flexible packaging films, energy generation and downstream steel products. The Group has a continuous growth agenda with a successful track-record of executing capital intensive projects and multiple global acquisitions.

(**Source:** Jindal / 04.03.2025)

ONGC's OPaL Exits from Dahej SEZ

ONGC PetroAdditions Ltd (OPaL) is set to exit the 'only - for - export' unit status by 2025 to focus on the domestic market, boosting its competitiveness and margins. The move aims to address financial challenges and leverage the lower corporate tax regime.

ONGC PetroAdditions Ltd., a subsidiary of the state-owned Oil and Natural Gas Corporation (ONGC), has relinquished its 'only-for-export' unit status as it aims to tap into the booming local petrochemical market to drive a turnaround. In a stock exchange filing, ONGC said OPaL has received the final approval for its exit from the Dahej Special Economic Zone (SEZ).

Accordingly, OPaL is operating as a Domestic Tariff Area (DTA) unit with effect from March 8, 2025,. Further, this exit from SEZ will improve the competitiveness of OPaL for supplies to be made to the DTA.

This essentially means primarily catering to the domestic Indian market instead of focusing on exports, which is the primary purpose of an SEZ unit. It will now not have to pay customs duty on products sold within India, helping improve margins.

The move is primarily to gain access to the wider domestic market and potentially benefit from the lower corporate tax regime.

ONGC's C2C3 project extracts ethane (C2) and propane (C3) from the liquefied natural gas (LNG) imported from Qatar. C2 and C3 - the basic building blocks of petrochemicals - are provided to OPaL which uses them to make polymers and chemicals like benzene and butadiene.

High debt and unlucractive exports had pushed OPaL into the red. It made a loss of Rs. 3,546 crore in the 2023-24 fiscal year and Rs. 2,392 crore loss in the first nine months of the current year.

To mitigate the situation, ONGC extended financial support. It infused additional equity capital upto Rs. 10,501 crore, converted back stopped compulsorily convertible debentures (CCDs) amounting to Rs. 7,778 crore and paid Rs 86 crore with respect to share warrants, totaling Rs. 18,365 crore. This has led to its stake in the company rising from 49.36 per cent to 95.69 per cent.

OPaL dealt with global geopolitical uncertainties "by focusing on the strategic pillars of cost-efficiency programs, innovation, brand building, and distribution in order to sustain growth and profitability and a judicious improvement in the petrochemical export market share," according to its latest annual report.

It achieved sales of 1.771 million tonnes during the financial year 2023 - 24. Of these, 1.237 million tonnes were polymer sales. Domestic share of polymer sales was down to 86 per cent in the financial year 2023-24 as compared to 91 per cent in financial year 2022-23 due to oversupply in the domestic market on account of entry of a new polymer producer and also regular imports at lower prices.

Overall market share of OPaL for polymers stood at 11 per cent in the financial year 2023-24; 1 per cent lower than last fiscal majorly on account of less production due to limited feedstock availability in some of the months, new capacity additions and intense competition in the domestic market, the annual report said.

During this FY 2023-24, total chemical sales was 0.534 million tonnes. OPaL sold around 64 per cent chemical products in the domestic market and 36 per cent in export markets.

Deepak Advanced Materials Inaugurates its New Polycarbonate Compounding Plant in Gujarat

DAML will manufacture high - quality Polycarbonate granules that can be customized in grades to suit the applications of diverse consumers.

Deepak Advanced Materials Limited (DAML), a wholly owned subsidiary of Deepak Nitrite Ltd., inaugurated its maiden state - of - the - art manufacturing unit at Manjusar, Savli GIDC to produce versatile Polycarbonates and engineering polymer compounds.

DAML will manufacture high-quality Polycarbonate granules that can be customized in grades to suit the applications of diverse consumers and offer an array of colours.

Polycarbonate is amongst the most versatile emerging polymer finding extensive applications in automotive segments including electric mobility, electronics and electrical, construction, appliances, medical devices and other sunrise sectors such as aerospace, aviation, drones etc.

Commenting on the development, Deepak C Mehta, Chairman and Managing Director of Deepak Nitrite Limited said, “This marks a historic kick - off to produce and serve India's burgeoning appetite for high quality engineering polymers. The tagline 'Made in India' coupled with world-scale capacities and formidable brand credibility, opens a new horizon of opportunities in the Advanced Materials front.”

(**Source:** Indian Chemical News / 03.03.2025)

Sustainable Plastic Manufacturing Landscape – Pallav Doshi

The plastics industry is undergoing a paradigm shift as sustainability becomes central to its operations. Traditionally reliant on pure plastic materials, the industry now faces increasing pressure to minimize its environmental footprint, opines, Pallav Doshi, Managing Director, Essen Speciality Films Limited.

India's ambitious Make in India initiative has emerged as a powerful catalyst for the nation's industrial and economic growth. Among the key sectors benefiting from this drive is the plastic manufacturing industry, particularly the subset focusing on sustainable practices. With increasing global emphasis on environmental consciousness and resource efficiency, India has the potential to become a global hub for plastic manufacturing. As global markets emphasize environmentally compliant

practices, India stands at the cusp of becoming a global leader in sustainable plastic manufacturing. However, this journey is fraught with challenges and opportunities that require a proactive, innovative, and resilient approach.

Sustainability: The New Imperative

The plastics industry is undergoing a paradigm shift as sustainability becomes central to its operations. Traditionally reliant on pure plastic materials, the industry now faces increasing pressure to minimize its environmental footprint. This shift is driven by multiple factors:

- **Consumer awareness:** Modern consumers are making informed choices, with growing preference for sustainable, high-quality products.
- **Stringent regulatory norms:** Governments worldwide are enacting laws to reduce plastic waste and encourage recycling, such as the European Union's Single-Use.

Plastics Directive

- **Corporate responsibility:** Businesses are adopting Environmental, Social, and Governance (ESG) frameworks, making sustainability a core component of their strategies.

India's robust infrastructure, skilled workforce, and advanced technologies position it to lead sustainable plastics manufacturing, provided it overcomes key challenges and seizes emerging opportunities.

Addressing core challenges

Despite its potential, the path to sustainable plastic manufacturing is fraught with several hurdles during the transition:

- **Limited availability of recycled materials:** The supply chain for recycled materials in India remains fragmented. Ensuring a consistent and high-quality supply of post-consumer recycled (PCR) materials is a significant hurdle, requiring investment in collection, segregation, and recycling infrastructure.
- **Customization complexity:** Catering to specific customer demands increases operational challenges, requiring significant innovation and agility.
- **High transition costs:** Adopting sustainable practices often involves significant capital expenditure. Investments in advanced machinery, renewable energy sources, and research and development (R&D) for eco-friendly materials can be prohibitive, particularly for small and medium enterprises (SMEs) that dominate the sector.
- **Global compliance requirements:** Indian manufacturers must meet stringent sustainability standards, such as the Global Recycled Standard (GRS) and the ISO certifications for environmental management. Achieving these certifications requires substantial financial and operational strategies.
- **Limited market awareness in India:** Limited domestic awareness and price sensitivity hinder the demand for sustainability-focused products in India.

According to government data, India's export levels were stagnant at approximately $500 million until 2020. However, significant progress has been made in the past two years, with exports now reaching the $776 million mark. By leveraging Free Trade Agreements, adhering to high standards, and fostering government - industry collaboration, the plastic industry can unlock new markets, create jobs, and strengthen India's global position.

Opportunities to revolutionize the industry

- **Embracing the circular economy:** Adopting a circular economy minimizes waste and reuses resources. Closed-loop systems allow manufacturers to recycle plastic waste into new products, reducing dependency on virgin materials. They showcase this by using post-consumer recycled (PCR) materials to balance sustainability and performance.
- **Investing in renewable energy:** The use of renewable energy in manufacturing processes is a critical step toward sustainability. Solar, wind, and biomass energy sources can reduce the industry's carbon footprint while lowering long - term operational costs. Government subsidies and incentives under the Make in India initiative further support this transition.

- **Developing innovative products:** Sustainability-driven innovations create globally appealing products. Few Indian companies focus on items such as artificial plants, yoga mats, and home décor that meet environmental and aesthetic standards.

- **Expanding into global markets:** Sustainability enhances a brand's appeal in international markets where eco-friendly products command premium pricing. Aligning with global certifications unlocks lucrative export opportunities for manufacturers.

- **Collaborating with government initiatives:** Programs such as the Production Linked Incentive (PLI) scheme provides financial incentives to manufacturers adopting sustainable practices.

Additionally, policies promoting waste management and recycling create a supportive ecosystem for growth.

Strategic focus area

- **Strengthening recycling infrastructure:** Investments in modern recycling facilities, coupled with public-private partnerships, can improve the availability and quality of recycled materials. Integrating technology for waste segregation and collection can streamline operations.

- **Fostering industry collaboration:** Collaboration between manufacturers, raw material suppliers, and industry bodies can drive innovation and scale sustainable practices. Platforms for knowledge sharing and joint R&D initiatives are essential.

- **Enhancing consumer awareness:** Educating consumers about the environmental benefits of sustainable plastic products can create demand in domestic markets. Awareness campaigns, labeling initiatives, and partnerships with retailers can accelerate this shift.

- **Promoting skill development:** Establishing training programs focused on sustainable manufacturing technologies can bridge the skill gap. Collaborations with academic institutions and industry associations can play a pivotal role in building a skilled workforce.

- **Leveraging technology:** Adopting Industry 4.0 technologies, such as IoT, AI and data analytics, can optimize resource use, reduce waste, and enhance operational efficiency. Real - time monitoring systems can ensure compliance with quality and environmental standards.

Conclusion: India's Make in India initiative presents an unparalleled opportunity for the plastic manufacturing industry to embrace sustainability and lead on the global stage. By addressing challenges through innovation, collaboration, and government support, the sector can turn obstacles into stepping stones. By aligning with Make in India and focusing on advanced, customer - driven manufacturing, ESFL is setting benchmarks in the industry. Through innovation and collaboration, the company embodies India's potential to become a global hub for responsible plastic manufacturing.

About the author: **Pallav Doshi serves as the Managing Director of Essen Speciality Films Limited,** with cross - functional expertise in New Product Development and Manufacturing Operations, Pallav oversees diverse areas within Essen, including financial operations and innovation initiatives. Recently awarded the prestigious Entrepreneurs Award, Pallav Doshi is celebrated for his outstanding achievements and leadership as an icon for New Generation Entrepreneurs. Recognized for his remarkable spirit of entrepreneurship, creative thinking, and dedication to positive change in the business environment, Pallav's commitment to encouraging innovation and empowering the team has been instrumental in Essen Speciality's success.

(**Source:** ASAPP INFO GLOBAL SERVICES / 21.02.2025)

Sintex - BAPL Acquires 100% Stake in Weetek Plastics for Rs. 85 cr

Welspun Corp Limited, part of Welspun World, through its subsidiary Sintex-BAPL Limited has announced the acquisition of 100% of the equity shares and non-cumulative redeemable preference shares of 'Weetek Plastics Private Limited' for an enterprise value of Rs. 85 crores. With this acquisition, Weetek will become a wholly owned step - down subsidiary of Welspun Corp, further expanding its footprint in India's plastics manufacturing sector.

Weetek Plastics operates a state-of-the-art facility in Raipur, Chhattisgarh, with an annual production capacity of 19,000 metric tons and Sintex will

investing to enhance the capacity and capability of this plant. The facility specializes in a wide range of products, including cPVC, uPVC, SWR pipes & fittings and water storage solutions. Welspun Corp will further enhance the facility's capability through a fresh round of investments to tap into new regional markets with immediate effect.

This acquisition is in line with Welspun's strategy to accelerate its market presence and scale up production ahead of its planned expansion of four additional plastic pipe manufacturing plants, to be located in Madhya Pradesh, Telangana, Odisha and Jammu & Kashmir.

Acquisition of Weetek Plastics with its advanced infrastructure provides a competitive edge to Sintex, enabling faster penetration into key markets such as Jharkhand, Bihar, Odisha, and West Bengal. The acquisition offers Welspun a ready platform to expand its product offerings and boost its capacity in India's growing plumbing and water management sectors.

Commenting on the acquisition, BK Goenka, Chairman, Welspun World, said: "The acquisition of Weetek Plastics aligns with our vision to become a leader in the building materials industry. This state-of-the-art facility will help us enhance our market presence and deliver superior products to customers across the country. It offers us a unique opportunity in accelerating our growth strategy on PVC pipes and fittings and fast-tracking our entry into new markets with an already operational facility."

(**Source:** Construction Times – 06.12.2024)

Extension of the Last Date for Filing Annual RoDTEP Return (ARR) for Financial Year 2023 – 2024

Directorate General of Foreign Trade has extended Filing Annual RoDTEP Return (ARR) from 31.03.2025 to 30.06.2025.

Similarly, the applicable grace period is also extended from 30.06.2025 to 30.09.2025.

(**Source:** Government of India - Ministry of Commerce and Industry / 19.03.2025)

Govt. to Set up SPV for Manufacturing Aircraft in India: Union Minister Naidu

The government is in the process of setting a special purpose vehicle for making regional transport aircraft, Civil Aviation Minister K. Rammohan Naidu said as he asserted that necessary policies are in place for India to manufacture planes and its components.

Replying to questions in the Rajya Sabha, the minister highlighted the steps taken by the government to promote aircraft component manufacturing and MRO (Maintenance, Repair and Overhaul) activities, including having a uniform IGST rate.

India is one of the world's fastest growing civil aviation markets and domestic carriers have placed orders for more than 1,500 planes as they expand their fleets to meet rising air traffic demand.

"We have changed the thought process that we have when it comes to manufacturing of aircraft. We are saying that India is at the stage right now where we can manufacture, we can design and we can maintain an aircraft," Naidu said.

Elaborating about the way forward, the minister said the government has adopted a holistic approach and is in the process of setting a Special Purpose Vehicle (SPV) for manufacturing regional transport aircraft.

"We have a plan to create an SPV for five years, which is going to bring in all the necessary stakeholders... study the existing picture in the country and create a road map...," he said and added that the idea is to make the aircraft in five years.

As the government pushes ahead with the Make In India initiatives, the TDP leader also emphasised that states are the key players. While stressing that skilling is also important, Naidu mentioned that

there are 58 working FTOs (Flying Training Organisations) and the focus is to create an ecosystem for manufacturing aircraft components.

In a written reply, Naidu said the development of the indigenous 19-seater Light Transport Aircraft Saras Mk2 is under progress at CSIR-NAL.

"The Saras Mk2 initiative has a collaboration and partnership with HAL. The aircraft has significant indigenous components and technologies like advanced composite wing, composite and light weight material airframe, avionics, display and communication system," he added.

Further, the minister said the production and manufacturing activities of aircraft with its indigenous content are envisaged to promote indigenous civil aircraft component manufacturing in the country.

India Adds 25.2 GW Solar Capacity in 2024

New power capacity added in 2024 stood at 34.7 GW, as per the data, of which, solar power accounted for 73% of the additions.

At the end of December, the country's cumulative rooftop solar installations reached 13.7 GW led by Gujarat, Maharashtra, and Rajasthan. (Reuters).

India added 25.2 gigawatt (GW) of solar power capacity in the calendar year 2024, significantly higher than 8.3 GW installed in 2023, as per Mercom's recent report on solar market. The market witnessed record installations last year surpassing annual capacity additions of all previous years.

During last year, 22 GW of large-scale solar projects were installed, registering an increase of as much as 235% from just 6.6 GW in 2023. The increase was attributed to commissioning of significant capacities from previously delayed projects.

Rajasthan, Gujarat, and Maharashtra saw the highest number of large-scale installations accounting for 32%, 27%, and 8% of the cumulative capacity additions.

New power capacity added in 2024 stood at 34.7 GW, as per the data, of which, solar power accounted for 73% of the additions.

During the Oct-Dec quarter of 2024, the country added 7.8 GW of solar power capacity, up 118% from 3.6 GW installed in the previous quarter. The country had installed 1.9 GW solar capacity in the fourth quarter of 2023.

As per the report, in 2024, tenders were announced for 79.3 GW of large-scale solar projects, the highest so far. Tender announcements grew by 39% from 57 GW in 2023, while auctions were consulted for 48.1 GW of projects, up by 117%, from 22.2 GW in 2023.

Additionally, rooftop solar installations grew by 86% to 3.2 GW in 2024 against just 1.7 GW in 2023 driven by record residential rooftop solar installations supported by the government's newly launched PM Suryaghar Muft Bijlee Yojana scheme.

As per another report by Mercom, residential consumers accounted for 74% of installations last year, the largest of all. Industrial, commercial, and the government sectors accounted for 19%, 6% and 0.8% respectively of the total capacity added.

Gujarat, Maharashtra and Kerala recorded the highest number of rooftop solar additions in 2024 accounting for 36%, 20% and 9% of the total capacity additions, as per Mercom.

Tenders for rooftop solar capacities issued last year totaled 2.8 GW, up 136% from last year. Tenders to add rooftop solar in government buildings in the country accounted for 43% of the total tendered capacity.

In the last quarter of 2024, the country added 1.3 GW of rooftop solar capacity, up 64% from 791.1 megawatt (MW) in 2023. In Q42024, the country had added just 406 MW of rooftop solar capacity.

Installations of rooftop solar during Oct-Dec 2024 surpassed all previous quarterly additions, Mercom said.

The firm highlighted that installations in the residential segment under the PM Suryaghar Muft Bijlee Yojana drove installations in the quarter, accounting for over 85% of the capacity additions.

At the end of December, the country's cumulative rooftop solar installations reached 13.7 GW led by Gujarat, Maharashtra and Rajasthan.

(**Source:** Financial Express / 10.03.2025)

Haier India to Boost AC, PCB Production with Rs. 800 Cr Investment

Haier India expands with a third plant, boosting local production and reducing import dependence.

Haier India is set to invest Rs. 800 crore to expand its air-conditioner (AC) production and establish a printed circuit board (PCB) manufacturing unit. The investment will increase AC production capacity from 1.5 million to 2.5 million units annually, strengthening Haier's presence in India's growing home appliance market.

Haier India's new AC & PCB plants underway

A major part of the investment, Rs. 700 crore, will go towards setting up a new AC plant in Greater Noida, while Rs. 100 crore will be allocated to the PCB unit, expected to begin production by October 2025.

These PCBs will be used in ACs, washing machines, and refrigerators, reducing import dependence.

Strategic expansion and future plans

Haier recently invested Rs. 200 crore in injection moulding for in-house plastic component production, bringing its total India investment to Rs 1,600 crore.

Additionally, the company is considering selling a stake in its Indian entity to secure funding for a potential third manufacturing plant in Tamil Nadu or Andhra Pradesh.

(**Source:** Manufacturing Today India / 10.03.2025)

MBA Polymers Investing €10m to Expand Operations into India

Dr. Felix - Michael Weber, CEO, MBA Polymers

December 4th to 6th highly successful Plastic Recycling Show India, which far exceeded expectation in regard to both conference and show attendance, offered domestic and internationally operating plastics recyclers a platform to come together and present themselves as an industry.

And, as the Mumbai show amply demonstrated, India today presents unexplored opportunities for plastics recyclers as the plastics recycling industry grows and evolves. The country is increasingly attracting global attention from international companies who see the vast potential driven by a combination of legislation and regulations and a rising awareness of the need to address the problem of plastic waste pollution.

Among the international exhibitors was MBA Polymers, headquartered in New Jersey but active around the world. It has been in India since 2017 when it signed the first cooperation agreements with various Indian waste management companies. Sustainable Plastics talked with CEO Dr. Felix-Michael Weber about the company's ambitious plans for expansion in India.

Weber revealed that MBA Polymers would be opening multiple plastics recycling sites in India over the next five years, through 2030, with the first engineering plastics recycling site to be located near Pune (based in the Western Indian state of Maharashtra).

“We are planning to invest € 10 million in phases in setting up the various sites, with this first one around Pune having the capacity to recycle 20,000 tonnes of

engineering plastics waste annually," said Weber. The plant is scheduled to go into operation by the end of 2025. Pune is one of the key automotive hubs in India.

MBA Polymers' patented plastics recycling technology has been developed over the past 25 years. The technology recovers pure plastics from plastics-rich shredder residue, producing post-consumer recycled resins—including ABS, PC/ABS, BS/HPS and PP 8 HDPE—used in applications ranging from appliances 'to consumer products and industrial parts.

Commenting on the potential of the Indian plastics recycling market, Weber noted that 'India generates tremendous amounts of plastic waste, is the third largest producer of plastics and is regarded as a promising market to grow'.

According to new research, India tops the list of plastic polluters, generating plastic waste of 9.3 million tonnes annually, which roughly amounts to a fifth of global plastic emissions.

MBA Polymers currently has an administrative office registered as MBA Polymers India Pvt. Ltd., which opened at Pune in 2023. Since 2001, the company has opened and now operates five clean-tech sites based in Germany, Austria, China, UK and the USA, with a processing capacity of over 150,000 tonnes annually.

(**Source:** Sustainable Plastics – 09.12.2024)

Henkel Strengthens its Electronics Footprint in India

On 27th February 2025, Henkel announced the launch of a state-of-the-art Application Engineering Center in Chennai, Tamil Nadu, further strengthening the leadership of its Adhesive Technologies business in the electronics sector. The company will also be setting up an adhesive materials manufacturing plant for the electronics sector at its multi-technology manufacturing site in Kurkumbh, near Pune. These investments underscore Henkel's commitment to localization, innovation, and accelerated product development to meet the rapidly evolving demands of the region's electronics industry. As India's electronics industry is projected to grow exponentially in the next few years, fuelled by government initiatives such as Make in India and PLI (Production-Linked Incentive) schemes, Henkel's expanded footprint positions it to strongly support this rapid growth.

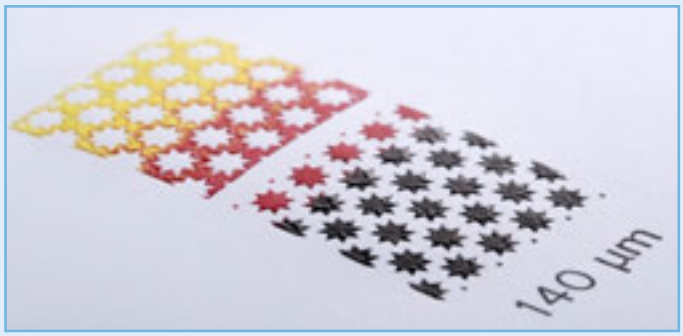
"As the country solidifies its position as a global electronics manufacturing hub, Henkel is proud to reinforce its 'Make in India' commitment, and be a key partner in this journey," said S. Sunil Kumar, Country President - India, Henkel. "These new facilities in Chennai and Kurkumbh align with this growth, strengthening regional self-sufficiency and supply chain resilience. This marks an exciting milestone in our journey to better serve our global customer base while expanding our footprint in the region. It demonstrates our commitment to fostering long - term partnerships, driving innovation and creating value for our customers."

Located in Tamil Nadu—a key hub for global electronics manufacturing—the 17,000 sq. ft. Chennai facility is designed to accelerate new product introductions (NPIs) and reduce time-to-market for customers. The center houses five specialized labs dedicated to advanced adhesive solutions and thermal management materials, essential for enhancing the reliability, durability, and sleek designs of smartphones, wearables and other consumer electronics. Equipped with state-of-the-art dispensing systems, vacuum impregnation technologies for device waterproofing and high-precision material analysis tools, the center enables rapid prototyping, proof-of-concept testing, and product validation. This center will enhance Henkel's global innovation footprint, complementing its existing sites in Germany, the US, China, Singapore, Japan, Korea and Vietnam. With these investments, Henkel further strengthens its role as a key innovation partner for electronics manufacturers worldwide.

Wen Zhou, Corporate Vice President - Electronics, Henkel Adhesive Technologies, shared that these investments are a natural progression of the company's growth in India and the electronic market's supply chain diversification. "Henkel meets our customers where they are," said Wen. "We have had established Indian operations for a long time, and with customers intensifying their operations in the region, we are investing in additional local capabilities to deliver collaborative NPI and product validation expertise with more immediacy."

Covestro Unveils Autentium® : An Innovative Step towards the Future of Currency Printing

- Autentium® a mono-polymer solution for currency printing industry
- Recyclable printing substrate offers a more sustainable solution
- Combining advanced security features with durability and printability
- Debuting at Intergraf Currency + Identity, 2025 in Milano

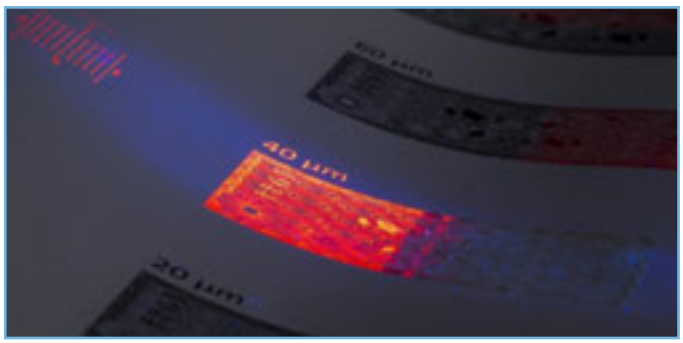


Precision-crafted intaglio printing on Autentium®, a new polymer substrate for currency printing. © Covestro

The first polymer banknotes made their debut in the late 1980s. They reformed cash transactions with their modern design, allowing for new security features that were impossible with paper. Over time, countries such as Australia, Canada, and the United Kingdom have fully transitioned to polymer banknotes as their primary currency medium. Despite this progress, most banknotes worldwide are still made from paper and cotton composites, materials with inherent limitations such as a comparable short lifecycle and limited recyclability.

In response to the growing demand for sustainable solutions in currency printing, Covestro is introducing Autentium®, an innovative polymeric printing substrate. Designed exclusively for currency printing applications like banknotes, Autentium® combines cutting-edge anti-counterfeiting technology with a recyclable mono-material design.

"The launch of Autentium® represents a significant breakthrough in currency printing, offering an innovative, recyclable polymeric substrate that excels in printability, durability and is more sustainable, " says Daniel Hentschel, Global Segment Manager for ID & Security Printing at Covestro.



Tactile, fluorescent micro-printing on Autentium®, the innovative polymer substrate. ©Covestro

Key Features of Autentium® include:

- **Exceptional printability:** It supports secure printing techniques such as intaglio and offset, enabling embossed structures and therefore tactile security features that differ from traditional paper and existing polymer substrates.
- **No coatings or primers needed:** Its secondary properties as a hot-melt adhesive contribute to superior ink adhesion without requiring additional primers or coatings, streamlining the printing process and improving durability.
- **Water & Stain Resistance:** The polymer absorbs only minimal moisture, which contributes to a low static charge, while at the same time being resistant to contamination.
- **Advanced laser engraveability:** It allows precise micro - engravings, providing advanced anti - counterfeiting measures and enhancing currency security.

As a single - polymer solution, Autentium® is recyclable, addressing the demand for sustainable materials in banknote production. Its high tear propagation resistance and excellent ink adhesion contribute to extend the lifespan of printed currency and can help reducing the environmental impact and conserving resources.

Furthermore, its durable composition can translate into long - term costs savings by minimizing replacements, making it an ideal choice for governments and the public sector that prioritize security and environmental responsibility.

About Covestro: Covestro is one of the world's leading manufacturers of high - quality polymer materials and their components. With its innovative products, processes and methods, the company helps enhance sustainability and the quality of life in many areas. Covestro supplies customers around the world in key industries such as mobility, building and living, as well as the electrical and electronics sector. In addition, polymers from Covestro are also used in sectors such as sports and leisure, telecommunications and health, as well as in the chemical industry itself.

The company is geared completely to the circular economy. In addition, Covestro aims to achieve climate neutrality for its Scope 1 and Scope 2 emissions by 2035, and the Group's Scope 3 emissions are also set to be climate neutral by 2050. Covestro generated sales of EUR 14.2 billion in fiscal year 2024. At the end of 2024, the company had 46 production sites worldwide and employed approximately 17,500 people (calculated as full - time equivalents).

Forward - Looking Statements

This news release may contain forward-looking statements based on current assumptions and forecasts made by Covestro AG. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Covestro's public reports which are available at www.covestro.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

(**Source:** Covestro / 25.02.2025)

COVESTRO has further Increased its Global Capacity for Polycarbonate (PC) Specialty Films in Thailand

- Investment in the higher double-digit million Euro range
- Construction completed on schedule
- Meets growing demand of customers worldwide

With the mechanical completion of new production lines at the Map Ta Phut Industrial Park in Thailand, Covestro has further increased its global capacity for polycarbonate (PC) specialty films. The investment is in the higher double-digit million Euro range, the project has been completed on schedule. A total of around 40 new jobs will be created.

"The new production facilities are equipped with state-of-the technology to enable an efficient production and thereby reduce our CO2 emissions," says Thorsten Dreier, Chief Technology Officer of Covestro. “With the expanded capacity, we can meet our customers' growing demand for innovative specialty films, especially in medical technology, in the region Asia-Pacific and strengthen our Solutions & Specialties segment."

Covestro has been operating a production facility for Specialty Films in Thailand since 2007. The range comprises polycarbonate films from the Makrofol® range and Bayfol® products made from polycarbonate blends. These high-performance specialty films are used in many applications across multiple industries, such as healthcare, mobility and Identification Documents.

"The new production facilities are important to us because it enables faster time to market and at the same time expands our market access in Asia-Pacific." says Aukje Doornbos, Global Head of the Specialty Films business entity. "With market focused innovations and a stronger customer orientation we want to drive growth for Covestro."

Since 2022, the Map Ta Phut site is ISCC PLUS certified, enabling it to manufacture and supply mass-balanced products. With the mass balance approach, bio-based or recycled raw materials are fed in at an early stage of raw material extraction and mathematically allocated to the finished products. This saves fossil raw materials and reduces CO2 emissions, while the quality of the mass-balanced products remains identical to that of purely fossil-based products. With this drop - in solution, manufacturers can continue to use their proven formulations, equipment and processes.

ISCC is an internationally recognized sustainability certification for biomass and bioenergy. The standard covers all stages of the value chain and is used worldwide. Customers can use these products in their established processes and apply them to meet their sustainability goals. In addition, Covestro already offers a range of films made partly with plant-based raw materials or partly from recycled plastics.

(**Source:** Covestro / 04.03.2025)

Berry Introduces High - Quality PCR Plastic for Homecare and Industrial Packs

Berry Global is introducing a high - quality post-consumer recycled (PCR) plastic polymer for non-contact-sensitive packaging, specifically aimed at the homecare and industrial sectors.

Source: Packaging Speaks Green

Utilizing many of the same processes used to produce Berry's proprietary contact - sensitive PCR, CleanStream® Home and Industrial is suitable for a wide variety of applications with exacting technical specifications. The purity degree of the recycled polymer enables it to be included in greater percentages in all types of packs and in areas which demand a high degree of functional performance, for example trigger spray heads and the lid, ring and handle of paint containers.

"Much of the current industry output of recycled plastic for non-contact-sensitive products is used for items such as plant pots, drainage products, automotive parts, and furniture," explained Mark Roberts, Circular Economy Director at Berry's Consumer Products International division.

"However, increasing consumer demand for more sustainable packaging, combined with our customers' own ambitious sustainability commitments and targets, have driven the need for a recycled polymer with higher purity that is suitable for more challenging applications, and which can also maximize the use of PCR content. CleanStream Home and Industrial has therefore been introduced to provide high quality material to meet vital aesthetic, safety and functionality requirements."

One of CleanStream's major benefits is that it can operate within existing waste management infrastructures. This can provide a closed - loop solution that delivers a more reliable and consistent supply chain. The CleanStream process replaces simple material-based sorting with multiple sorting steps, using AI technology, including automated identification, sorting and decontamination, to deliver very high levels of polymer purity.

Berry's production facility in Leamington Spa, UK, has the capacity to recycle nearly 40% of all PP waste collected from domestic recycling bins in the UK, producing significantly lower-carbon recycled plastic at scale.

An in-depth life-cycle analysis carried out by Quantis found that packaging made with CleanStream has around 35% lower carbon dioxide (CO2) emissions than virgin plastic - a reduction of about 36,000 tonnes of CO, annually. This equates to the production of around 26 million five litre paint containers.*

According to Euromonitor's Voice of the Industry: Sustainability Survey, 60% of global corporates plan to launch new products with sustainable packaging claims, The Sustainability Quarterly SKU Count and Price Tracker reported a 13% increase in SKU count for global laundry care products with sustainable packaging claims from Q4 2022 to Q4 2023.

“It is clear that the need for high-quality non-contact-sensitive recycled polymers will continue to grow across homecare and industrial markets,” said Mark Roberts. “We look forward to working with our customers to help them develop packaging that includes high levels of PCR, providing circular solutions with no compromise on performance.”

(**Source:** Berry / 28.02.2025)

Amcor Unveils Industry-First 2 oz Retort Bottle for Nutritional Shots with StormPanel™ Technology

Innovative StormPanel™ Technology Opens Doors for 12 - Month Shelf Stability with High Product Performance

Amcor, a global leader in responsible packaging solutions, has partnered with Insymmetry® to develop an innovative 2 oz retort bottle, addressing growing demand for durable, shelf-stable packaging. Designed to meet the needs of brands seeking high - performance packaging for low-acid, shelf-stable products like coffee and dairy-based beverages, this breakthrough packaging solution is the first to leverage Amcor Rigid Packaging's (ARP) proprietary StormPanel™ technology. Designed to withstand high-pressure retort sterilization processes while maintaining product integrity and market-ready aesthetics, the bottle provides manufacturers with a reliable and scalable alternative to aseptic processing.

Stellify™, a beverage brand owned by Insymmetry®, is the first company to take advantage of this StormPanel™ technology with their energy nootropic Dulce de Leche Energy and Espresso Energy wellness beverage shots, which will be spotlighted at Natural Products Expo West 2025.

Filling Industry Needs

The StormPanel™ bottle responds directly to evolving market demands for durable, shelf-stable packaging solutions that meet stringent performance requirements for nutrition standards, including the Real California Milk seal. This 2oz product not only caters to the health-conscious consumer but also provides a convenient option for on-the-go lifestyles.

"At Amcor, we are committed to driving innovation that addresses the evolving needs of the food and beverage industry,” said Greg Rosati, VP of Strategy and Marketing of ARP. “Our StormPanel™ innovative packaging allows beverage brands to elevate shelf-stable, low-acid products in a compact, ready-to-use bottle.”

While an ideal product for the end-user, the retort process also offers a more cost-effective and time-efficient solution for manufacturers compared to aseptic processing, reducing upfront equipment investment and streamlining production timelines while maintaining product integrity.

“Amcor's expertise in packaging innovation enabled us to develop a solution that meets our unique needs,” said Josh Cua, Chief Innovations Officer of Insymmetry®. “By leveraging their advanced manufacturing technology and material science capabilities, we were able to create a bottle that not only performs exceptionally in the retort environment, but also aligns with growing consumer demand for preservative - free nutritional shots.”

Revolutionizing Retort Packaging

Engineered with StormPanel™ technology, the bottle maintains shape and structural integrity under the extreme heat and pressure fluctuations of retort sterilization, ensuring reliable protection and an

extended 12-month shelf life with no refrigeration. The design incorporates features that preserve the round shape, while other areas are specifically designed to flex.

“This collaboration is a testament to Amcor's ability to combine deep industry expertise with advanced engineering to address complex challenges,” said Mikey Tom, Business Development Manager at ARP. “We are proud to deliver a solution that provides manufacturers and consumers with uncompromising quality and functionality.”

A Collaborative Approach to Innovation

ARP's close collaboration with Insymmetry® was key to developing the innovative retort polypropylene bottle. Utilizing finite element analysis (FEA) and ARP's virtual reality capabilities to streamline the process, the teams refined the StormPanel™ design to maintain structural integrity during the retort sterilization. By selecting a co-polymer resin and optimizing a one-step molding system, they ensured efficiency and scalability. The project's proximity to Insymmetry's California operations enabled rapid prototyping and promises of accelerated commercialization.

"As a smaller company, we are truly grateful for Amcor's trust, time and confidence in us,” said Cua. “Partnering with a global leader like Amcor has been invaluable, and we greatly appreciate the dedication of the entire team for making the impossible possible.”

About Amcor: Amcor is a global leader in developing and producing responsible packaging solutions across a variety of materials for food, beverage, pharmaceutical, medical, home and personal-care, and other products. Amcor works with leading companies around the world to protect products, differentiate brands, and improve supply chains. The company offers a range of innovative, differentiating flexible and rigid packaging, specialty cartons, closures and services. The company is focused on making packaging that is increasingly recyclable, reusable, lighter weight and made using an increasing amount of recycled content. In fiscal year 2024, 41,000 Amcor people generated $13.6 billion in annual sales from operations that span 212 locations in 40 countries.

(**Source:** Amcor / 03.03.2025)

POLYPLASTICS Launches New Eco-Friendly PLASTRON® LFT with Reduced Weight, Higher Rigidity and Strong Damping

In January 2025, we released PLASTRON® LFT (Long Fiber Reinforced Thermoplastics) RA627P long cellulose fiber reinforced polypropylene (PP) resin. PLASTRON® LFT RA627P is a new grade that is a composite of PP resin and cellulose fiber which is a biomass material. Its main properties are low density and high specific rigidity 1, though it is also notable for having excellent damping properties due to its large loss coefficient. These properties make it well suited for use in audio components such as speaker diaphragms and for uses such as housings of industrial components that require strong damping. Using PLASTRON® LFT RA627P results in products that are lighter in weight and at the same time eco-friendly and also makes it possible to design products with excellent damping properties.

Specific rigidity: The resulting value when tensile modulus is divided by density

Background behind the development of PLASTRON® LFT RA627P

PLASTRON® LFT is a resin composite of uninterrupted reinforcing fibers of the same length and oriented in the same direction inside of pellets. It is a material that offers both high rigidity and high impact strength. Glass and carbon fiber have conventionally been used as reinforcing materials. However, through our commitment to offering the market materials with lower environmental impact and bringing about a sustainable society, we continue to develop grades made from cellulose fiber, a biomass material. PLASTRON® RA627P is a new grade that is a composite of PP resin with 30% long cellulose fiber.

Properties of PLASTRON® LFT RA627P

1. Physical properties

PLASTRON® RA627P is a material that reinforces low-density large-loss-coefficient PP resin with regenerated long cellulose fiber*2 to boost the rigidity of the resin while keeping density from increasing and loss coefficient from declining. The regenerated cellulose fiber used here is manufactured as high strength, high elasticity fiber by choosing the appropriate spinning conditions and degree of polymerization for the raw cellulose materials. As shown in Table 1, PLASTRON® RA627P has the properties of roughly 10% lower density than 30% short glass fiber reinforced PP resin, while maintaining roughly the same flexural modulus. We have also achieved the result of a specific rigidity that is higher than that of 30% short glass fiber reinforced PP resin, with a large loss coefficient at the same time. The properties of high specific rigidity and large loss coefficient have an inverse relationship, but PLASTRON® RA627P is a material with an excellent balance of those properties, making it perfectly suited for usage applications in components of audio equipment such as speaker diaphragms which require this balance.

- Regenerated cellulose fiber: Extracted as continuous fibers by putting natural cellulose through a wet spinning process.

2. Eco-friendly

PLASTRON® RA627P is a long cellulose fiber reinforced PP resin with extremely low product carbon footprint (PCF) made from regenerated cellulose fiber. Its PCF*4 being roughly 30% less (roughly 38% per material volume) than that of 30% short glass fiber reinforced PP resin is another very significant property.

Table 1. Comparison of the physical properties of PLASTRON® LFT RA627P and 30% short glass fiber reinforced PP resin.

Properties	Testing Method	Unit	RA627P	30% short glass fiber reinforced PP resin
			30% long cellulose fiber reinforced PP resin	
Density	ISO1183	g/cm³	**1.02** (10% low)	1.12
Flexural Modulus	ISO178	MPa	**6,100**	6,000
Specific rigidity		MPa/(g/cm³)	**6,000**	5,400
Loss coefficient (2,000Hz)	Central exciting method (room temperature)		**0.052**	0.033
Biomass content*3		wt%	**30**	0
Cradle-to-gate PCF*4		kg-CO_2/kg	**1.7** (30% down)	2.4
Cradle-to-gate PCF*4		kg-CO_2/1000cm³	**1.7** (30% down)	2.7

Our testing methods conform to each of the respective testing standards, but different specifications and procedures are used in some cases.

- Value for RA627P natural color variant not containing the color masterbatch

- Cradle-to-gate Product Carbon Footprint: Values are calculated from our own results over a set period of time and values in our databases based on the GHG Protocol and ISO 14067 and are not guaranteed values. Includes biogenic carbon removal. (Values current as of November 2024)

Future outlook

We have released PLASTRON® LFT RA627P PP resin reinforced with low PCF cellulose fiber. Due to its properties as a structural material with a large loss coefficient, we consider this material ideally suited for components of audio equipment such as speaker diaphragms and of musical instruments. It is also an excellent choice for the housings and structural components of equipment with rotors or vibrating parts, or of equipment made to vibrate (such as peripheral components for EV motors, housings for head-up displays, various types of fans, and housings for MRI machines). We will make materials propositions for products in various fields with this grade. In addition, we are also developing new grades based on recycled PP resin to further reduce PCF. Moving forward, we aim to expand our portfolio of PLASTRON® LFT products to meet the increasing demands of the market and accelerate the realization of a circular economy in collaboration with our customers.

About DURACIRCLE®: As a leading engineering plastics company, we launched our DURACIRCLE® initiatives for every solution that helps to achieve 100% circularity for engineering plastics. Keep looking to Polyplastics for more sustainable solutions.

(**Source:** POLYPLASTICS / 12.02.2025)

INNOVIA Launches Next Generation RayoFloat™ High Shrink Polyolefin Sleeves

- Shrinkage of up to 73% fits most packaging shapes
- Fit for recycling: Low density polyolefin (PO) sleeves detach automatically during recycling process
- PO sleeves are a match for PET, HDPE and PP rigid packaging

INNOVIA Films, a material science pioneer and major producer of BOPP films, has announced the wider launch of the next generation shrink sleeve made out of recycling-friendly polyolefin (PO) material.

High - shrink version allows the transition from unsustainable sleeves

"The improvement of this high-shrink version of our RayoFloat™ shrink sleeve enables our customers to switch from PVC or PET-G shrink sleeve that are detrimental to recycling, to a recycling-proof and more sustainable option made from polyolefin. This material is certified by recyclers and has been endorsed by RecyClass in Europe and APR in the United States", says Lucija Kralj, Business Unit Director Labels EMEA.

Polyolefin material was traditionally thought to have lower shrinkage compared to other materials. However, with up to 73% controlled TD shrinkage, the new generation sleeves are now compatible with most packaging formats, particularly bottles, in the market. The shrink sleeves feature a high-gloss finish, excellent clarity, scuff resistance and are compatible with both steam and hot air shrink tunnels, says Jonathan Hewitt, Global Strategic Innovation Projects Manager.

The sleeve is also available in a low-density white version. RayoFloat™ WAPO is an opaque film that contributes to the light blocking properties of the shrink sleeves that later can be applied to containers for light sensitive products. This was developed for light-sensitive products such as dairy, supplements or vitamins. Enabling brands to switch from a white HDPE bottle or opaque PET bottle that are generally not recycled back into food grade packaging to a transparent PET bottle that is widely food grade recycled. The light blocking barrier is moved to the printed sleeve itself.

How does the sleeve perform in recycling?

The sleeve is crafted from a low-density polyolefin material that floats, facilitating the essential sink/float separation process in PET recycling. During this process, the heavier PET flakes sink to the bottom of the container, while the floatable sleeve material rises to the top, where it can be easily collected and removed. This efficient separation results in high-quality, clean PET flakes suitable for recycling back into food grade packaging for the dairy and other industries.

(**Source:** INNOVIA / 27.02.2025)

ColorForm – Painting Directly in the Mold!

ColorForm is based on the principle of multi-component injection molding, which has been proven for many years. The notable aspect of this is that the basic carrier is flow-coated with polyurethane (PU) or polyurea (PUA) as a surface material in the second cycle after injection molding of the thermoplastic base body. This provides an exceptionally high-quality, scratch-resistant surface.

Flooding eliminates the need for subsequent painting and this work step is completely substituted - one of the main advantages of ColorForm.

ColorForm system from KraussMaffei

Combination of 4 KraussMaffei key competences for individual customer serial production:

Injection Molding Machinery

+

Reaction Process Machinery

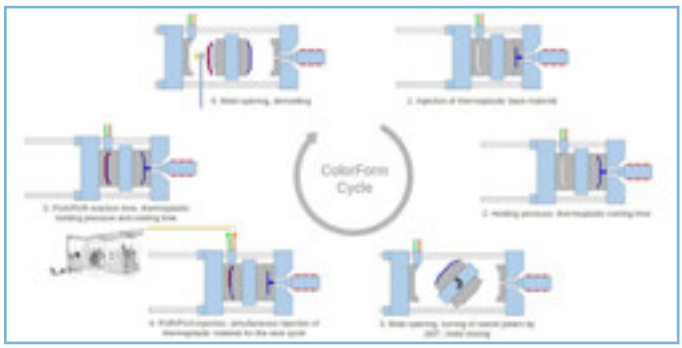
+

Automation / Post Processing

=

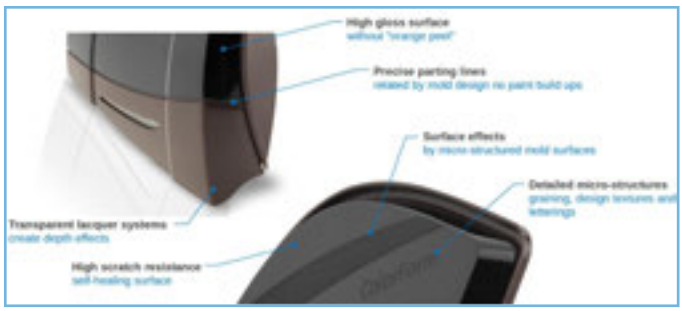
KraussMaffei as a turnkey supplier for ColorForm applications

ColorForm process – Integrated PUR coating inside the injection molding machine



Painting in one-step – ColorForm cycle

ColorForm parts – One surface, three effects – high gloss, depth and structure



High quality surfaces with ColorForm

ColorForm from KraussMaffei in a nutshell

KraussMaffei acting as a turnkey supplier

Most important points from a customer view currently

- Cyle-time reduction (high out-put rate) for finished painted parts
- Reduction of production steps and improved part handling
- Flexibility of production equipment (one machine for different projects)
- New material combinations and parts design possibilities
- Turnkey ColorForm solution out of one hand > no 3rd parties > clear responsibilities
- Improved environmental aspects (elimination of spray-painting) and related Co2 emission

LYB Launches Pro-Fax EP649U: A New Solution for Rigid Packaging with Recycled and Renewable-Based Options

LyondellBasell, a leader in the global chemical industry, today announced the launch of Profax EP649U, a new polypropylene impact copolymer designed for the rigid packaging market. This innovative product is specifically formulated for thin-walled injection molding, making it ideal for food packaging applications.

Pro-fax EP649U features high low properties and fast crystallization, enabling the efficient production of thin-walled containers while enhancing both productivity and product quality. The additive package in Pro-fax EP649U facilitates easy mold release, reduces static and improves downstream handling on high-speed filling lines. Additionally, the high lexural modulus of this product provides superior stack strength for containers, which can allow for reduced container wall thickness and part lightweighting without sacrificing impact resistance.

A key attribute of Pro-fax EP649U is its improved organoleptic properties compared to other commonly used grades. It does not contain controlled rheology byproducts that can transfer unwanted taste and odor to packaged goods.

This new product has broad food contact compliance for the U.S. and other countries, as well as a non-phthalate catalyst for resin production and exclusively non-animal derived additives.

Pro-fax EP649U is also available in the LYB CirculenRenew and CirculenRevive portfolios, which enable customers to meet their sustainability goals for recycled content and carbon footprint reduction.

CirculenRenew and CirculenRevive are polyolein products linked to renewable or recycled content using a mass-balance approach, certified under the International Sustainability and Carbon Certiication PLUS (ISCC PLUS) standard. CirculenRenew is produced from bio-based wastes and residues, while CirculenRevive utilizes pyrolysis oil made from plastic waste feedstock, both on a mass-balance basis.

“At LYB, our purpose is creating solutions for everyday sustainable living,” said James Deaton, commercial manager at LYB. “Pro-fax EP649U exemplifies our commitment to sustainable innovation by providing our customers with choices to meet their sustainability objectives without compromising on performance.”

Key benefits of Pro-fax EP649U include:

- High Flow Rate
- Excellent Organoleptics
- High Flexural Modulus
- Nucleated Anti-stat

(**Source:** LyondellBasell / 06.03.2025)

IIT Guwahati Develops Sustainable Geopolymer to Transform Industrial Waste into Eco-Friendly Building Material

The breakthrough opens new opportunities for industries, municipalities, and governments to embrace sustainable construction while tackling industrial waste management challenges.

A research team at Indian Institute of Technology Guwahati led by Prof. Anil K. Mishra from the Department of Civil Engineering, has developed an innovative solution to two major global challenges: industrial waste management and sustainable construction. Their research focuses on creating a geopolymer using industrial byproducts and waste materials, such as water treatment sludge (WTS), fly ash (FA), and ground granulated blast furnace slag (GGBS).

With the rapid pace of urbanization and industrialization, managing industrial waste has become a critical global issue. Among the various types of industrial waste, water treatment sludge poses significant challenges due to its high water content and organic components. Water treatment plants worldwide generate approximately 100,000 tons of sludge daily. Traditional disposal methods, like landfilling or using sludge as soil additives, have proven to be costly and environmentally risky, as heavy metals can leach into groundwater.

Speaking on the research, Prof. Anil K. Mishra said, "Our research provides a solution by converting WTS and industrial byproducts like fly ash and GGBS into a geopolymer. Geopolymers are renowned for their high strength, durability, and minimal environmental impact. Through the process of geopolymerisation, silicon and aluminum from these materials react with alkaline activators to form a three-dimensional alumino-silicate structure. This results in a material that matches traditional cement in performance while significantly reducing carbon emissions and energy consumption."

The findings of this study were published in the prestigious journal Construction and Building Materials, co-authored by Prof. Anil K. Mishra and his research scholars Mr. Alok Bijalwan and Mr. Bitupan Sonowal from IIT Guwahati.

One of the key applications of the WTS-FA-GGBS geopolymer is in road construction. The research team evaluated the mechanical properties of the geopolymer, specifically its suitability as a subgrade material for roads and pavements. The subgrade layer forms the foundation of roads, determining the pavement's strength and longevity. Using the WTS-based geopolymer as a stabilizer was found to significantly enhance road performance, particularly in soft or weak soils.

In addition to WTS, the team is also focused on geopolymerising construction and demolition (C&D) waste, which exceeds 10 billion tons annually and constitutes over 35% of global waste. They have developed applications for C&D waste, including base and subbase layers for road pavements and paver blocks, contributing to effective waste management and reduced environmental impact.

Furthermore, the team is investigating the treatment of landfill-mined fine fractions from old municipal solid waste dumpsites, offering promising solutions while supporting circular economy initiatives. They are also exploring the stabilization of petroleum sludge by incorporating fly ash and GGBS, aiming to immobilize hazardous heavy metals and prevent environmental leaching.

Tests conducted by the IIT Guwahati team, including Unconfined Compressive Strength (UCS) and California Bearing Ratio (CBR) assessments, revealed that the WTS-FA-GGBS geopolymer exceeds the minimum strength requirements for cement-stabilized subgrade materials. Durability tests confirmed its ability to withstand extreme environmental conditions, making it a reliable choice for infrastructure projects across diverse climates.

Crucially, the geopolymer is non-toxic. Leaching tests demonstrated that heavy metal concentrations in the geopolymer leachate are well within the safety limits set by the U.S. Environmental Protection Agency (USEPA), ensuring that it poses no risks to the environment or human health, even in large-scale applications.

Engel and Cannon Integrate Technologies to Speed Up Production and Improve Part Quality With PUR Flooding

Combining Engel's injection molding technology with Cannon's precise metering and mixing technology is designed to ensure maximum process stability and flexibility, speeding up production and improving the final product's overall quality.

Engel is partnering with Cannon to optimize technologies for polyureuthane (PUR) flooding (or inmold painting) to enable industrial applications to achieve even higher quality and efficiency. This partnership brings together Engel's expertise as a manufacturer of injection molding machines with Cannon's capabilities in mixing and metering technology for reactive processes such as PUR or resin transfer molding (RTM).

The focus of the collaboration is Engel's clearmelt process, which combines traditional thermoplastic injection molding of a substrate, which is then coated with a durable PUR surface via a separate reaction injection molding (RIM) process in the same machine. The companies say the addition of Cannon's precise metering and mixing technology will optimize the process's reliability and efficiency.

(Left to right) Marco Volpato, Cannon Group president and chairman, and Stefan Engleder, Engel Group CEO, stand in front of the world's largest injection molding cell with a PUR system located at the Engel Technical Center in Saint Valentin, Austria.

Now, customers can utilize clearmelt with a coordinated technology that enables the efficient and economical integration of PUR into industrial manufacturing processes to produce high-quality surfaces from polyurethane.

An Engel spokesperson told Plastics Technology that one example of this partnership is the full integration of the Cannon PUR system with Engel's CC300 and CC300 plus control units. This means that operators don't have to jump between two control units when setting up a process. Also, when all the processes happens in one unit, it makes it easier to handle the correlating data.

The companies collaborated on Engel's duo 5500 combi M, which may be the world's largest injection molding cell with a PUR system for clearmelt. It was commissioned last year at the Engel technical center in Saint Valentin, Austria, where customers can conduct practical tests with various PUR color variants. According to Cannon, this partnership offers further benefits as its dosing machines and high-pressure mixing heads are well suited for applying high-quality transparent or colored RIM coatings.

The combination of Engel's duo 5500 combi M and the precise metering and mixing technology from Cannon is designed to ensure maximum process stability and flexibility. Cannon's PUR system provides precise and efficient material supply, which is now is integrated into Engel's CC300 machine control system to ensure ease of use and maximum automation of the process. This not only speeds up the production chain but also improves the overall quality of the final products.

In addition to technological capability, the companies say the collaboration also emphasizes customer service to ensure comprehensive support in all key global markets. Customers can benefit from strong after-sales and application support, which can assist in integrating the technology into existing production processes.

Engel says the partnership builds on its decades of injection molding experience by working with Cannon to combine their expertise and leverage synergies to further develop new solutions for their customers utilizing PUR technology. In addition, Cannon notes that it is also still able to attach other supplier PUR systems to its machines in production cells.

(**Source:** Plastics Technology / 18.03.2025)

Molding and Material Handling Solutions Advance Moldmaking Capabilities

Globeius and Plastixs jointly demonstrated their latest technologies together in the U.S. for the first time at PTXPO March 18-20, in Rosemont, Illinois.

Plastic solutions supplier Globeius and its new acquisition Plastixs are both celebrating anniversaries while highlighting their latest technologies together in the U.S. for the first time at PTXPO 2025, March 18-20, in Rosemont, Illinois. Globeius, whose originating company Plastec USA is celebrating its 40th anniversary, and Plastixs, marking its 25th year, plan to exhibit a variety of solutions for injection molding, material handling and other plastics processes.

Source: Globeius

Two Globeius offerings include the Mouldpro mold splitter tables and molding part separator trials using Crizaf demo machines. Mouldpro mold splitting tables are designed for easily handling molding tools. The tables simplify maintenance tasks by opening and closing molds in seconds, enabling quick access to different parts. The tables also feature a wide range of customizable options to adapt for any type of mold.

According to the company, choosing the right injection molding part separator can be overwhelming. That's why Globeius is offering free separation trials to help molders find the best solution for their unique parts. Molders can send sample injection molding parts to Globeius and receive a video of the results.

Plastixs is offering a variety of new technologies to optimize moldmaking capabilities, including fluids, tools and monitors. The Paratherm heat transfer fluids are a range of specialized fluids for temperature control in molding, extrusion, press heating, line tracing and coating rolls, as well as a liquid cleaner for hot-oil units.

Barb-Tech hose assembly tools are versatile tools that can be used with any type of hose. Portable, efficient and easy to use, they can accommodate many types of fittings, including straight and elbow. Users can benefit from safe hose assembly in injection molding, robotics, automation, pneumatics and other industrial applications. The Model V is a hose - gripping system, while the Model PQD is

available in two kits — the PQD-CM for custom mold-style push-lock hoses and the PQD-PM for Moldmate-compatible push-lock hoses.

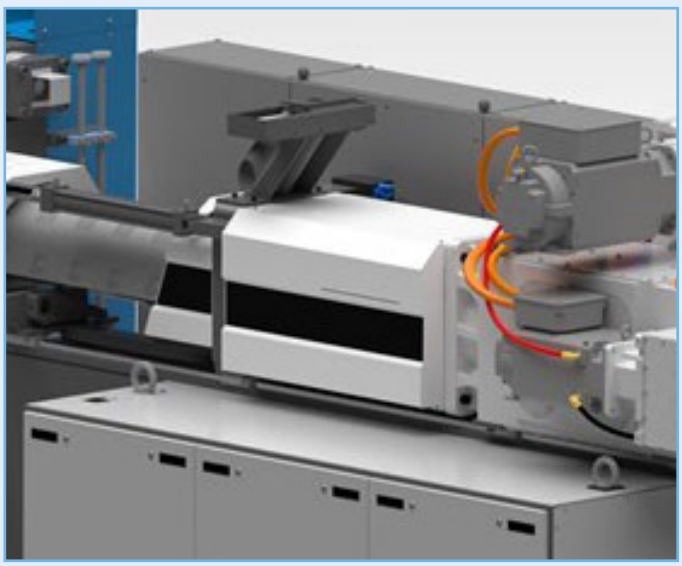
The Nitto Kohki flow monitors include the Nitto Kohki FMC-30 Flow Monitor which is an easy and convenient method for checking stable and accurate coolant flow rate. The FMC enables operators to check the flow of cooling water at a glance. Users can check the flow with the rotating two-colored impeller, operating at a fluid flow rate as low as 0.55 to 5.25 gpm.

(Source: Plastics Technology / 17.03.2025)

All - Electric Injection Machines Enable More Sustainable, Energy - Efficient Processing

Stork's all-electric injection molding machines include a breaking energy feedback system in which recovered energy can be fed back into the customer energy grid.

Stork Plastic Machinery BV (Stork IMM) — a Dutch manufacturer of injection molding machines for the packaging market — has expanded its machine product range with an all-electric line developed to deliver greater sustainability and the same high-performance capabilities of standard Stork IMM machines.



Rendering of Stork IMM all-electric. Source: Stork IMM

The all-electric injection molding machine offers lower energy consumption, a novel rack-and-pinion drive system and customized process tailoring for a range of applications in thin-wall food packaging and industrial paints / buckets.

The all-electric series enables flexible, customized solutions for customers by pairing clamping units from 250 to 700 tons with a range of injection units with screw sizes from 45 to 84 mm. The company says this line was developed to satisfy customer demand for high-performance injection molding machines that meet sustainability goals for the packaging market and support a circular economy.

Some of its performance features include high output, maximum uptime and a favorable total cost of ownership. The all-electric units are said to achieve 15% greater energy savings compared to similarly specified hybrid machines and operate at injection speeds suitable for thin-wall packaging applications. The machines also feature a breaking energy feedback system in which recovered energy can be fed back into the customer energy grid.

The units feature a heavy-duty, rack-and-pinion drive which is highly rigid, energy-efficient and provides reduced wear and longer life. The drive is said to provide higher speed forces for the clamp and injection units compared to ball bearing and spindle drives.

The high-speed injection molding machinery is well suited for the production of food-grade, thin-wall packaging made of polyolefins (PE and PP). Stork machines are designed to provide maximum performance at minimum operational costs, with lower material cost, reduced energy consumption and shorter cycle times. Key applications include closures, tubs, containers and cups along with flower pots, paint pails and buckets.

(**Source:** Plastics Technology / 21.03.2025)

Unilever is Testing Refill Solutions to Tackle Plastic Waste

Unilever is running refill pilot projects globally, seeking ways to reduce virgin plastic use and tackle plastic sachet waste. Learn how insights from three emerging markets are helping us understand the barriers to scaling reusable packaging models.

- Unilever is working to ensure that 100% of our plastic packaging is reusable, recyclable or compostable, by 2030 for rigid plastic, and by 2035 for flexibles.

- Since 2018, we've run more than 50 refill and reuse pilots around the world Supportive regulations and industry collaboration are essential for reuse solutions to grow at scale.

Unilever has run over 50 refill and reuse pilot projects since 2018, seeking ways to help reduce our virgin plastic use. Learnings from these trials are helping to shape our strategies for reducing single-use plastic packaging, including flexible plastic sachets.

We spoke to our teams in Indonesia, Bangladesh and Sri Lanka to find out how they are evolving refill solutions within their respective markets.

Building on our waste bank network in Indonesia

In 2020, we piloted a refill machine, selling home and personal care brands like Dove, Rinso and TRESemmé, in a packaging-free store in Jakarta. We also introduced two digital machines in an apartment building and a general trade kiosk. These trials taught us that affordability, convenience and dosage control matter most to our Indonesian consumers. We then tested an even more convenient refill model, with motorcycle drivers selling door-to-door from large jerrycans. This was more popular than either machine, but high operational costs made scaling this model challenging. However, the simple pouring system worked well.

To build on this, we began working with local partners like Alner, a TRANSFORM enterprise, introducing scalable manual refill stations to local stores (warungs) and our growing network of waste

banks across Indonesia. Today, we serve an estimated 6,000 customers at 1,000 refill stations, saving approximately 6 tonnes of plastic per year.

Designing refill solutions customized for consumers in Sri Lanka

In 2019, we worked with sustainable technology provider Vega Innovations to install two large high-tech refill machines in modern trade outlets. Each machine offered set amounts of personal and home care products, from brands like Dove, Sunlight and Sunsilk.

Initial responses to the pilot were promising. However, we wanted to expand our reach to include general trade, which accounts for the majority of the market, and increase access for low-income customers who tend to buy smaller quantities of products more regularly, so we broadened our approach.

We redesigned our machines to eliminate fixed volume options, allowing consumers to choose the exact amount they purchase, according to their needs and budgets. We also placed machines in more convenient locations like railway stations and apartment buildings for better accessibility. Offering savings of up to 20% compared to prepackaged prices, the refill machines help cater to consumer expectations of affordability, convenience and quality.

Bangladesh: Innovating with the local market in mind

In 2021, we tested self-service refill machines in modern trade stores in Bangladesh. Despite the machines' advanced features, they proved challenging to service and maintain. We wanted to develop a lower-tech solution that is more scalable, requires less maintenance and better serves the general trade market in Bangladesh.

After a year of prototyping with Bopinc, another TRANSFORM-funded organization, we created a user-friendly, cost-effective machine that fits on store counters. Dispensing multiple products including Sunsilk, Dove and Lifebuoy, in varying amounts, our machines offer the premium experience of prefilled bottles at lower prices.

Bopinc's expertise in early consumer engagement, innovative distribution models and creative behaviour change campaigns was instrumental in helping to bring the machines to market. The machines provide real-time sales data, helping us understand consumer preferences and price points to develop more valuable product offers. Approximately 43% of users are now returning customers.

Testing, learning and scaling sustainable packaging solutions

We're working to ensure 100% of our plastic packaging is reusable, recyclable or compostable, by 2030 for rigid plastic and 2035 for flexible plastic. Every pilot offers fresh insights to help us find new ways to do this and reduce our virgin plastic footprint.

We know we can't scale alternative reusable packaging models alone. It requires commitment across every level of the supply chain, from manufacturers and retailers to the waste management industry and governments. It is also clear that concerted voluntary efforts can only go so far, which is why supportive regulations will be essential for reuse solutions to grow at scale.

Unilever is advocating for enabling policies with the Business Coalition for a Global Plastics Treaty and working pre-competitively with our peers and partners, like the World Economic Forum and Ellen MacArthur Foundation, to agree on a common set of reuse definitions and metrics. Only by working together can we help drive the infrastructural change needed to transition from small single-brand pilots to multi brand reuse models at scale. Based on the 91,000 liters of products sold in 2023.

(**Source:** Unilever / 07.02.2025)

TRINSEO Introduces Recycled Polystyrene for Direct Food Contact Applications

TRINSEO is proud to introduce the first and only transparent dissolution recycled polystyrene (rPS) product in the European market, specifically designed for direct food contact applications. Starting February 2025 TRINSEO can sell food contact approved rPS compliant with the EU Regulation 2022/1616, which governs the use of recycled plastic materials intended to come into direct contact with food.

This achievement required rigorous preparation, as TRINSEO, alongside the Fraunhofer Institute prepared an "EFSA Novel Technology Dossier" to demonstrate

the decontamination efficiency of its dissolution installation and to validate the food contact safety of the finished product. TRINSEO proved the decontamination efficiency of its proprietary technology through a "Challenge Test" where contaminants were added to the feedstock and the final product analyzed.

The results of the "Challenge Test" confirmed that TRINSEO's rPS resins meet European food contact regulatory requirements, making it safe for various direct food contact applications, such as dairy containers, hot and cold drink cups, food trays, and refrigerator parts. TRINSEO is dedicated to monitoring of the rPS resin quality to ensure consistent compliance with EU Regulation 2022/1616.

Produced in Germany, at TRINSEO's Schkopau facility, these resins contain 30% recycled materials and are available immediately for sale. The feedstocks come from selected sources of pre- and post-consumer polystyrene, provided by Heathland, TRINSEO's recycler. This development results in a product carbon footprint reduction of approximately 18% compared to the virgin product.

“Polystyrene has long been the material of choice for various food contact applications, and we are very proud to be the first to launch recycled polystyrene for direct food contact using dissolution technology. This technological innovation gives our customers a broader choice of sustainable solutions helping them to achieve recycled content targets such as those set forth by the European Packaging and Packaging Waste Regulation (PPWR)”, said Alain Minelli, Global Product & Marketing Director, TRINSEO.

94% Plastic Recycled in 4 Hours: Scientists Develop New Method Powered by Air Moisture

This new more sustainable technique offers a promising path towards a circular economy for plastics.

An inexpensive catalyst initiates the process by breaking down bonds in PET, the most common polyester plastic. (Representational image)

In what could be a fix to the world's plastic problem, researchers have developed a simple new method of harnessing moisture from air to breaking down the waste.

The process begins with an inexpensive catalyst that breaks down the bonds in polyethylene terephthalate (PET), the most widely used plastic in the polyester family. Once broken, the material is simply exposed to ambient air to transfer PET into monomers—the essential building blocks of plastics.

Researchers believe these monomers could then be recycled or up cycled into more valuable materials.

The new technique, which is safer, cheaper and more sustainable than current plastic recycling methods, offers a promising path toward creating a circular economy for plastics.

“What's particularly exciting about our research is that we harnessed moisture from air to break down the plastics, achieving an exceptionally clean and selective process,” Yosi Kratish, who is also the co-corresponding author of the study said in a press release.

Sustainable solution

The researchers utilized a molybdenum catalyst and activated carbon — both of which inexpensive, abundant and non-toxic.

To begin the process, they combined PET with the catalyst and activated carbon and then heated up the mixture. Polyester plastics consist of large molecules with repeating units linked by chemical bonds. Within a short time, these bonds broke apart.

Next, the researchers exposed the fragmented material to air. With just a trace of moisture, it transformed into terephthalic acid (TPA), a highly valuable precursor for polyesters. The only byproduct was acetaldehyde, an easily removable industrial chemical with commercial value.

“On average, even in relatively dry conditions, the atmosphere holds about 10,000 to 15,000 cubic kilometers of water,” Naveen Malik, the study's first author, said.

“Leveraging air moisture allows us to eliminate bulk solvents, reduce energy input and avoid the use of aggressive chemicals, making the process cleaner and more environmentally friendly.”

Kratish stated that the system worked flawlessly but failed when extra water was added, as the excess disrupted its function. Maintaining the right balance was crucial, and ultimately, the natural moisture in the air provided the perfect amount.

The plastic problem

PET plastics —widely used in food packaging and beverage bottles — account for 12% of global plastic consumption. It is a major contributor to plastic pollution due to its resistance to natural degradation. After use, it either ends up in landfills or degrades into tiny microplastics or nanoplastics, polluting wastewater and waterways.

Recycling plastic remains a key focus in research, but existing methods often rely on extreme conditions—such as high temperatures, intensive energy use and harsh solvents—that produce toxic byproducts.

Moreover, catalysts like platinum and palladium are expensive and contribute to the waste problem. Once the reaction is complete, researchers must separate the recycled materials from the solvents—a process that is both time-consuming and energy-intensive.

“Instead of using solvents, we used water vapor from air. It's a much more elegant way to tackle plastic recycling issues,” Kratish said.

Fast and efficient

The process is both fast and efficient, recovering 94% of the possible TPA within just four hours.

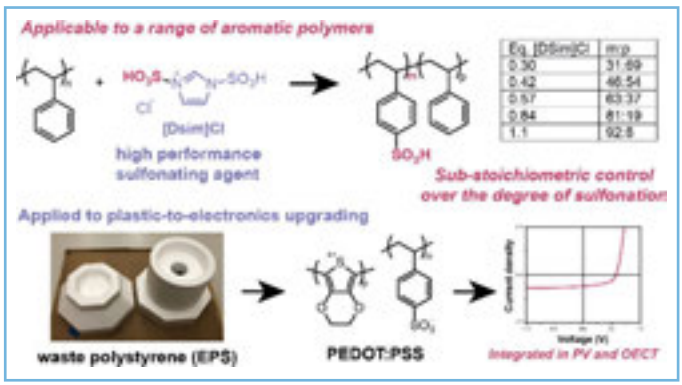
The catalyst is not only durable but also recyclable, maintaining its effectiveness through repeated use. Moreover, the method is designed to work with mixed plastics, selectively targeting polyesters for recycling. This selectivity eliminates the need for pre - sorting, offering a significant economic advantage to the recycling industry.

When tested on real-world materials such as plastic bottles, clothing, and mixed plastic waste, the process remained highly effective, even breaking down colored plastics into pure, colorless TPA.

Moving forward, the researchers aim to scale up the process for industrial applications, ensuring it can efficiently manage large volumes of plastic waste.

The study was recently published in Green Chemistry, a journal published by the Royal Society of Chemistry.

Waste Styrofoam can now be converted into Polymers for Electronics



University of Delaware and Argonne National Laboratory have come up with a chemical reaction that can convert Styrofoam into a high - value conducting polymer known as PEDOT: PSS. In a new paper published in JACS Au, the study demonstrates how upgraded plastic waste can be successfully incorporated into functional electronic devices, including silicon - based hybrid solar cells and organic electrochemical transistors.

The research group of corresponding author Laure Kayser, assistant professor in the Department of Materials Science and Engineering in UD's College of Engineering with a joint appointment in the Department of Chemistry and Biochemistry in the College of Arts and Sciences, regularly works with PEDOT: PSS, a polymer that has both electronic and ionic conductivity, and was interested in finding ways to synthesize this material from plastic waste.

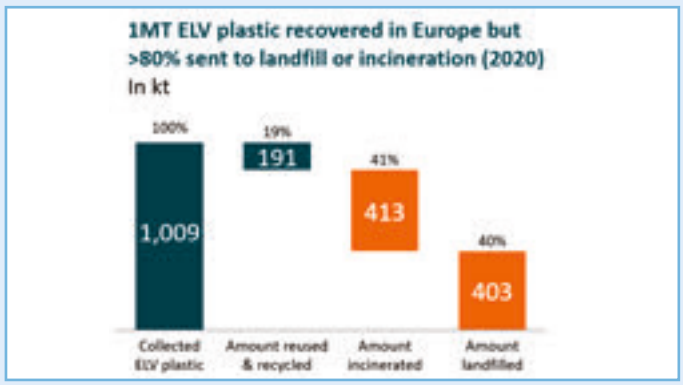
After connecting with Argonne chemist David Kaphan during an event hosted by UD's research office, the research teams at UD and Argonne began evaluating the hypothesis that PEDOT:PSS could be made by sulfonating polystyrene, a synthetic plastic found in many types of disposable containers and packing materials.Sulfonation is a common chemical reaction where a hydrogen atom is replaced by sulfonic acid; the process is used to create a variety of products such as dyes, drugs and ion exchange resins. These reactions can either be "hard" (with higher conversion efficiency but that require caustic reagents) or "soft" (a less efficient method but one that uses milder materials). In this paper, the researchers wanted to find something in the middle: "A reagent that is efficient enough to get really high degrees of functionalization but that doesn't mess up your polymer chain," Kayser explained.

(**Source:** Waste Advantage / 24.07.2024)

Global Industry Leaders Join Forces to Launch Groundbreaking Automotive Plastics Circularity Pilot

A Global Impact Coalition initiative set to revolutionize automotive plastics recycling.

The Global Impact Coalition (GIC), a CEO-led collaborative platform originally incubated at the World Economic Forum, launches the world's first Automotive Plastics Circularity pilot together with seven global leaders in the chemical and recycling industries—BASF, Covestro, LyondellBasell, Mitsubishi Chemical Group, SABIC, SUEZ and Syensqo. This groundbreaking pilot will address the critical challenge of recycling plastics from End-of-Life Vehicles (ELVs).



Each year, over 800 million metric tons of ELV plastics in the EU alone are incinerated or landfilled, resulting in significant environmental and economic losses. This pilot is a key first step to transform this waste into valuable resources, enabling the automotive industry to significantly increase the rate of closed-loop recycled plastics.

"This collaboration represents a turning point for the industry," said Charlie Tan, CEO of the Global Impact Coalition. "Recycling ELV plastics has long been a challenge, with less than 20% of these materials recycled today. By uniting players from across the automotive value chain—from auto makers to dismantlers, sorters, recyclers and the chemical industry—we are connecting the links to close the loop on plastics."

A Bold Step Toward Circularity

The pilot, taking place in the Netherlands and Germany, will dismantle, shred and sort plastic fractions, clustered into 10 types of polymers and automotive parts from 100 end-of-life vehicles. These sorted plastic fractions will then be recycled by the collaborating companies with each of their specific technologies. Focusing on bulk aggregation of ELV plastics, the pilot will serve to test and optimize a new approach to dismantling, sorting and recycling plastic fractions under real-world conditions.

To ensure success, the project partners have engaged dismantlers, shredding companies and sorting facilities to create a robust and interconnected network. By pooling demand for a wide variety of ELV polymers, the initiative seeks to demonstrate the economic feasibility of large-scale closed-loop recycling systems. Project members collectively represent a significant portion of the global plastics industry, making this pilot extremely relevant for Europe and other key regions of the world.

"Automotive sustainability hinges on addressing materials that have long been overlooked," said Yves Rannou, Co-CEO of SUEZ & Chief Operating Officer of Recycling & Recovery, "Recycling ELV plastics isn't just a technical challenge—it's a chance to redefine how we view waste as a resource and ensure we can make it economically sustainable for each party involved. This pilot is the beginning of a transformative journey for the entire automotive and plastics value chain."

"GIC members collectively represent a significant portion of the global plastics industry," said Torsten Heinemann, Head of Group Innovation & Sustainability at Covestro. "Their expertise and commitment are crucial for unlocking the potential

of recycled ELV plastics as feedstock for new materials. This pilot project will help us overcome longstanding challenges such as high manual processing costs, inefficient sorting methods, and limited recovery expertise."

Meeting Growing Regional Sustainability Mandates

The Automotive Plastics Circularity project aligns with evolving regulatory frameworks, including the EU's proposed ELV regulations, which currently mandate that by 2030, 25% of plastics in new cars must come from recycled materials, with 25% of those derived from closed-loop recycling (from end-of-life vehicles). This pilot aims to validate the scalability of solutions capable of achieving these targets, ensuring significant impact and reducing the current reliance on landfilling and incineration.

By optimizing processes and achieving purer polymer fractions, the pilot will provide actionable insights into meeting regulatory requirements. Additionally, it will showcase the potential for a scalable, sustainable business model that can be applied globally.

"The goal of this pilot is to move beyond theoretical discussions and test real-world solutions for ELV plastics recycling. By focusing on advanced sorting and recycling technologies, we aim to prove that high-quality, closed-loop systems are not only possible but scalable for global impact," commented Dr. Lars Kissau, President, Net Zero Accelerator, BASF.

The pilot is expected to yield valuable data to guide broader industry adoption. Following its conclusion, the project will focus on scaling up efforts regionally in Europe and expanding to other key markets for ELV plastics recycling and production.

"This initiative demonstrates that innovation flourishes when industries collaborate toward a common goal. By combining expertise across the automotive and chemical value chains, we are developing solutions that create value for our stakeholders while contributing to a circular economy and making a positive impact on society and the environment," commented Fiona Van Den Brink, Senior Director Innovation Platforms and Net Zero Technologies at LyondellBasell.

Thomas Canova, Head of Research and Innovation at Syensqo said, "To make tangible progress, we must work collaboratively. Joining forces through the GIC allows us to pool resources, share knowledge and tackle common challenges more effectively, generating actionable insights that can redefine our industry."

The Global Impact Coalition invites stakeholders across the automotive and recycling value chains to join this transformative effort. For more information, please contact GIC.

(**Source:** Global Impact Coalition)

TORAY Innovates Nylon 66 Chemical-Recycled Technology that Boosts Plastic Recycling Rates

TORAY Industries, Inc., announced a breakthrough in recycling nylon 66. The company recently deployed a proprietary depolymerization technology using subcritical water (see note 1) to depolymerize this resin uniformly and efficiently in just minutes and recover it as a raw monomer material.

Demand for nylon 66 is estimated at 100,000 metric tons annually in Japan and 1.3 million tons worldwide. Its high heat resistance and strength make it essential for automotive and industrial applications. These include automotive textiles such as airbags and tire cords and plastic components such as radiator tanks, cylinder head covers and oil pans. Tighter recycling regulations for automotive and other plastics in Japan have made it mandatory to collect used nylon 66-based airbags, making it a promising material for chemical recycling.

Chemical - recycled nylon 6 (note 2) for which demonstration efforts are underway, entails recovering a monomer called caprolactam. Contrastingly, the process for chemical-recycled nylon 66 requires recovering hexamethylenediamine and adipic acid monomers. TORAY drew on its expertise in nylon 6 chemical - recycled technology to assess the depolymerization reaction of nylon 66 in subcritical water. It developed a proprietary technology to

suppress side reactions, making it possible to efficiently recover high yields of those two monomers and regenerate nylon 66 through repolymerization. Using TORAY's technology to make nylon 66 should halve carbon dioxide emissions compared with production from petroleum-based sources.

TORAY looks to initially target automotive materials, establishing technologies to separate other materials in such used equipment as airbags and technologies to depolymerize nylon 66 and separate and refine monomers. By 2025, the company plans to set up a framework to verify quality and evaluate customers through sample work. It will prepare for full-fledged mass production in around 2030, when stricter plastic recycling regulations are enacted.

The company will develop a comprehensive nylon recycling technologies for both nylon 6 and nylon 66. It plans to broaden its chemical - recycled technologies beyond apparel and automotive materials to other industrial applications to help create a circular economy and contribute to carbon neutrality.

One goal of the TORAY Group Sustainability Vision for 2050 is to contribute to a world where resources are sustainably managed. The company will keep undertaking R&D to realize a sustainable, recycling-oriented society, as part of ongoing efforts to realize its corporate philosophy of “contributing to society through the creation of new value with innovative ideas, technologies and products.”

Kaneka Belgium Green Planet Beads Officially Recognized as Microplastic-Free Under Commission Regulation 2023/2055

Kaneka Belgium NV is proud to announce that its Kaneka Biodegradable Polymer Green Planet™ Expanded Beads - type L40N - has been officially excluded from the definition of synthetic polymer microparticles under EU Commission Regulation 2023/2055.

Kaneka Green Planet™ is a 100% biomass-derived biodegradable biopolymer developed by Kaneka, as part of the company's commitment to providing environmentally friendly solutions that do not rely on petroleum resources. It has shown excellent biodegradability in various environments and decomposes easily in soil and seawater, where it converts into CO2 and water.

Green Planet™ Expanded Beads are the result of integrating Kaneka's long - established Eperan™ particle foam technology with the development of Biodegradable Polymer Green Planet™. This innovative material is used in a wide range of lightweight, shock-absorbing applications, such as cushioning materials for home electric appliances, transportation containers for fresh food, and materials used in the automotive and transport industries. The foam particles can be processed with existing molding equipment and their characteristics are similar to those of polyolefin foams.

The microplastic-free recognition of Kaneka's Green Planet™ Expanded Beads follows a comprehensive assessment conducted by Normec OWS, an external verification laboratory. During the verification process, the product's aqueous aerobic biodegradability was evaluated based on CO2 evolution. The results indicated that the material achieves a mineralization level of +60% over a period of 28 days according to OECD test method 301 B. These results confirm that the product fully degrades without leaving any synthetic residues, reinforcing its role as a sustainable alternative in the foam applications industry and contributing to the fight against microplastic pollution.

"We are proud that Kaneka Green Planet™ Expanded Beads L40N have been officially recognized as microplastic - free in line with the highest environmental standards set by EU Regulation 2023/2055. This milestone reflects our dedication to protecting the planet and delivering eco-friendly particle foam solutions without compromising performance and quality. It will enable us to engage further with brand owners, molders, and consumers, and help us work towards a microplastic-free foam industry," said Luc Point, General Manager of Foam & Residential Techs EMEA for Kaneka Belgium.

Brand owners, molders or other industry key holders interested in partnering up and learning more about Kaneka Green Planet™ Expanded Beads are invited to contact the expert team in Europe at http://www.kaneka.be.

Kaneka Biodegradable Polymer Green Planet™ Expanded Beads as cushioning materials for home electric appliances, transportation containers for fresh food, and materials used in the automotive and transport industries. (Photo: Kaneka Belgium NV, PR004)

About Kaneka Belgium NV: Kaneka Belgium NV is a subsidiary of Kaneka Corporation, a leading technology-driven chemical company headquartered in Osaka and Tokyo, Japan. Founded in 1970 in Westerlo, Flanders, Kaneka Belgium was the company's first subsidiary outside Japan and the first production site of a Japanese chemical company in Belgium. Since its establishment, Kaneka Belgium has expanded its business and research activities to include a variety of functional and foamed plastic solutions, focusing on the development and manufacturing of specialty materials for end applications in the industrial, automotive, building and construction, packaging, consumer, DIY and residential sectors.

(**Source:** KANEKA)

The RECLAIM Project Improves Waste Management with AI-Powered Robotic Material Recovery Plant

The RECLAIM project has developed a low-cost, portable, AI-powered robotic material plant that is designed to help with waste management in remote areas or locations where large-scale infrastructure is unjustifiable. The solution will be deployed initially in the Greek Islands.

Using multiple robots with various pickers, the RECLAIM solution works by collecting and handling different types of waste depending on their composition. With the addition of AI-powered computer vision, waste can be accurately identified, maximizing sorting effectiveness. Added portability ensures the solution can be deployed anywhere, allowing for material recovery close to the source and the promotion of recycling and a circular economy for plastics.

AIMPLAS, the Plastics Technology Centre, ensures the plant's equipment's operational requirements are defined ahead of the launch. This entails the evaluation of technological options in the market, ensuring the most suitable components are selected. Additionally, the company evaluates available technological options in the market (selecting the most suitable components), monitoring key performance indicators (KPIs), and presenting solutions and adjustments that help achieve objectives.

“Remote islands, hard - to - reach rural areas, or regions with limited infrastructure are just some scenarios where this equipment can make a significant difference,” said Javier Grau, A Researcher in Mechanical Recycling at AIMPLAS. “Additionally, the equipment also serves as an ideal solution for large-scale events such as festivals, concerts, or sports competitions, where massive waste generation in one place requires immediate treatment. It can also complement existing recycling plants in tourist areas that face significant population fluctuations during peak seasons.”

AIMPLAS

Future application expansion

With its compact design that's easily transportable in a container, the solution can be quickly deployed almost anywhere.

Grau added, "As recycling needs evolve, this portable equipment promises to unlock new possibilities. For example, it could facilitate marine waste management in port areas, improving material sorting and separation while reducing environmental impact. Another relevant application is its potential to assist existing sorting plants in processing bioplastics, whose presence is increasing. These materials pose a challenge to current recycling streams, but their recovery could have a significant impact in the future."

Funded by the EU's Horizon 2020 program, the project consortium is led by FORTH (Foundation for Research and Technology) – Hellas (Greece) and includes:

- AIMPLAS
- Axia Innovation (Germany)
- ION (Greece)
- IRIS (Spain)
- HRRC – Hellenic Recovery and Recycling Corporation (Greece)
- KU Leuven (Belgium)
- Robenso – Environmental Robotic Solutions (Greece)
- ISWA – International Solid Waste Association (Netherlands)
- UoM – University of Malta (Malta)

(**Source:** Interplas Insights / 03.03.2025)

Axil Named the Fastest - Growing UK Waste Management and Recycling Company

Axil has been named the fastest-growing UK waste management and recycling company in the ninth edition of The Financial Times FT 1000 Europe's Fastest Growing Companies 2025. Made in partnership with Statista, this award ranks Europe's companies based on their compound annual growth rate (CAGR) and analyses those with the highest revenue growth between 2020 and 2023.

Axil is the only UK company in the FT 1000's waste management and recycling category. It has been recognised for its fast, sustainable, and organic growth. The waste management company prioritises a hands - on approach to optimising waste management and sustainability for its customers, including measures like putting dedicated waste operatives on - site.

"Being named in the FT 1000 is a testament to our team's dedication and the trust our customers place in us," said Ed Pigg, Managing Director of Axil. "We're not just managing waste - we're transforming it into opportunities for efficiency, cost savings, and sustainability. This recognition, along with our recent EcoVadis Gold Standard placing us in the top 5% globally for sustainability, reinforces our commitment to driving real impact for businesses across the UK."

Axil aims to create practical solutions with the foundations of integrity, teamwork, and environmental stewardship. By promoting waste prevention, Axil empowers its customer to make informed, data-driven decisions, to set new industry standards while reducing their environmental impact.

Axil's achievements

To be included in the FT 1000 rankings this year, companies must have achieved a growth rate of 34.8%. Axil ranked above this mark at 44.3%. Since 2018, the company has experienced:

- Over £40 million in revenue growth.
- An employee growth increase from 35 to over 200.
- Collaborations with renowned UK brands like CBRE, Beko Europe, Lush, LEVC, and BMW Group.
- Expansion into new industries including aerospace, automotive, food, manufacturing, and pharmaceuticals.

Recommendations for Bringing Recycling Industry to Pay GST under Reverse Charge Mechanism

The industry faces significant challenges due to unregistered scrap dealers, and compliance issues, leading to disruptions in the supply chain and increased operational costs for recyclers. Many waste aggregators supply without compliance.

Implementing Reverse charge mechanism (RCM) ensures that tax liability is shifted from the eWaste aggregator and suppliers to registered recyclers, creating a streamlined and transparent system, while assuring the government of tax collection.

Supporting the setup of a robust eWaste and Lithium-Ion battery recycling industry is vital for achieving national objectives related to sustainability, economic independence, and critical mineral security. Sectors, such as metal scrap have successfully implemented RCM to ensure that the tax collection is better managed. This sets a precedent for applying similar support to the eWaste and Lithium - Ion battery recycling industry, recognizing its unique challenges and contributions which are similar to that of the metal scrap space.

CII has recommended that:

- RCM be introduced for purchase of recyclable materials (e.g., e-waste, lithium-ion batteries) by registered persons from unregistered scrap dealers.
- Registered suppliers to be responsible for depositing GST directly to the government.

(**Source:** CII Confederation of Indian Industry)

Direct Connections for a Better Recycling System

Colorado's Direct Polymers formed Brave Industries to link recycling collaborators.

In Colorado, recyclers and converters of plastics material are fewer and further apart than operations might be in a typical eastern state. This arrangement has influenced the development of Direct Polymers, a hybrid waste consolidator and recycler in Denver. By necessity, Direct Polymers works with the feedstocks available in the region. The supply made it impossible to focus on a particular niche, because no particular niche had enough volume. Instead, Direct Polymers takes on nearly every type of waste plastic from a variety of industrial sources. In some instances, Direct is acting as a redistributor of materials, the company also shreds, de-metals and grinds postindustrial plastic materials and also compounds polyolefins.

Reclaimed industrial scrap awaits reprocessing at Direct Polymers' Denver recycling facility. Source: Trash Club Ventures

“We take everything. Initially, we were forced to get into every type, but that's been extremely beneficial for both the processing and the brokerage,” says Adam Hill, CEO and founder of Direct Polymers. According to Hill, Direct has found competitive advantage in reducing logistics, handling and consolidation costs because of its hybrid recycling and waste consolidation model.

In the past year, Direct has been in the process of upgrading its Denver facility with a $1.6 million investment in capital equipment. The processing capacity was increased from 25 million pounds to 100 million pounds per year. Equipment includes Herbold grinders, an SSI shredder and Davis-Standard extruder.

Direct is setting itself up as a recycling hub for Colorado and surrounding states, but its vision doesn't end there. The company looks to spread its “hub and spoke” model in collaboration with other companies, under Brave Industries. Brave was founded late last year with the goal of expanding strategic collaboration among recyclers, putting to use the knowledge gained from managing logistics of plastic flowing from place to place in the reclamation and recycling networks.

Brave Industries on Building Recycling Cohesion

With a few notable exceptions, most recyclers in the U.S. are small businesses (despite processing tens of millions of pounds of reclaimed material every year, nearly all fall below the employee headcount threshold). Our recycling system exists as a network of these recyclers, along with waste management, scrap producers, other brokers and suppliers, and customers that convert the recyclate back into products. The model has both limitations and advantages.

The scale of participants makes the network flexible and resilient. Just in the past decade it has weathered the disruption of China's Operation National Sword, the surge in demand during the COVID-19 pandemic, the subsequent collapse of that demand and, more recently, the oversupply of virgin and wide-spec material. Amid all the ups and downs there are resourceful and agile companies remaking plastic waste.

The recycling system is successful in reducing waste (both in the material sense and in the resources to make the materials) by remaking some percentage of plastic materials. The percentages do not change much over time, which could be seen as a miracle or a disappointment.

Size can be a limiting factor when it comes to timely deployment of capital, information sharing among constituent companies, and building deep experiential knowledge in specialized functions. Brave Industries is aimed at these limitations.

“We have to build better efficiencies on the front end by expanding this hub-and-spoke model to use more infrastructure that is close to the generation points for the scrap,” Hill says. “Small business owners tend to be salespeople, advertising specialists, insurance agents — they do everything themselves, and so there's a lot of inefficiency in that.” Brave is based on the idea that small business infrastructure can be optimized if the owners can access the right resources, combining the advantages of a small company with the capabilities of a large one.

Direct Polymers processes a variety of recycled materials including polyolefins, producing this natural HDPE regrind among other products. Source: Trash Club Ventures

An example is quality management and testing services. Quality control is a challenge for some recycling plants and they often have to outsource testing. If a technological solution can provide box-level transparency, it improves confidence across the network.

“The crux is really to find similar-sized businesses run by like-minded people and utilize, enhance and optimize the existing infrastructure,” says David Seeling, COO at Direct Polymers.

One of the ways Brave companies will collaborate is by using shared resources. A mobile shredder is about to be deployed for the network. When bulky items collect at one site, the shredder can be moved there temporarily and process them down to facilitate shipping. “We're providing an option that currently doesn't exist,” Hill says, “so instead of 10 companies trying to buy 10 shredding units, you share one or two units within the network.”

Some early wins have come from shortening supply chains. An assessment done on a cart manufacturer in the Pacific Northwest shaved off 10-15 cents per pound simply by having the carts disassembled and bailed by a company in that region before shipping to Denver. Opportunities like this are expected to increase as the network grows: The recent addition of Alternative Plastics extends Brave Industries into Arkansas and Texas.

Getting Ready for Extended Producer Responsibility

Colorado is one of several states that have passed legislation to set up extended producer responsibility organizations (EPRO), which require producers to support end-of-life management for their products after their distribution. The proposed plan for Colorado's EPRO was recently submitted by the Circular Action Alliance and is currently under review by the Colorado Producers Advisory Board.

This development is expected to bring new players into the recycling system, including brands seeking ways to incorporate recycled material. “Big companies that need to use recycled content are kind of lost, because historically the industry has operated without transparency,” Hill says. “Our job with Brave is to help plants recycle regionally. We can provide technical assistance, and connect them with the right compounders to help them utilize recycled content. We're going in to act as a combination broker, consultant and infrastructure company.”

With Brave Industries, Direct Polymers plans to extend its model beyond the region. Left to right: Mitchell Best, Direct Polymers chief growth officer; Lillyann H. and Peter Calfee, founders of venture capital firm Trash Club Ventures; and Adam Hill, Direct Polymers CEO. Source: Trash Club Ventures

This has already happened with a supplier of commercial trash can material that Direct grinds. The molder had been attempting to incorporate 30% recycled content in their product, without success. "We said, 'Here is a compound we work with, try running it at 100%,'" says Mitch Best, chief growth officer at Direct Polymers. "They were able to replace their virgin resin and lower their cost by about 30%. That's the model right there."

By building known solutions among partners and spreading them across the network, Brave Industries will also be aiming to de-risk the scale-up of recycling infrastructure. "Being part of the Brave Network increases our ability to deploy capital into that company, because it de - risks the entire opportunity," says Peter Calfee, co-founder of Trash Club Ventures.

Capturing Institutional Knowledge in Recycling

An advantage of closer connections between companies engaged in or adjacent to recycling is the preservation of knowledge. Solutions born from experience rather than theory and formalized research can be endangered when a business closes or a founding member retires. Part of what Brave hopes to achieve is to find a way for these transitions to proceed while keeping the businesses intact, and while capturing what Mitch Best calls the "ancient wisdom" for the benefit of the recycling industry.

"We learn as much from the people on the floor as we do from the people coming in with the machinery, because there are all these little nuances — this ancient wisdom from the industry always comes out. People like to say, 'Oh people do things this way because that's how they've always done it,' but actually there are really good reasons for that," Best says.

Caution can make business leaders reluctant to come together and share their solutions, but this can be overcome when opportunities arise. "When companies we work with see that we bring those sales and send them feedstock through Brave, they become more willing to be transparent and share information," Hill says. "Collective optimization always beats self-interest."

(**Source:** Plastics Technology / 14.03.2025)

Microplastics :

Microplastics are plastic particles smaller than 5 mm, classified as :

Primary Microplastics – Directly manufactured as microbeads, industrial abrasives, or resin pellets.

Secondary Microplastics – Formed from the degradation of larger plastics due to UV exposure, mechanical wear, and chemical oxidation.

They originate from packaging waste, synthetic textiles, tire wear, and cosmetic products.

Human Exposure Pathways

1. **Ingestion –** Contaminated food (seafood, salt, bottled water).

2. **Inhalation –** Airborne microplastics from textiles, industrial emissions.

3. **Dermal Absorption –** Personal care products containing microplastics.

Material Composition and Degradation.

- **Microplastics are made from common polymers:**

PE (Polyethylene) – Found in plastic bags, bottles.

PP (Polypropylene) – Used in food containers, caps.

PVC (Polyvinyl Chloride) – Present in pipes, medical devices.

PET (Polyethylene Terephthalate) – Bottles, synthetic fibers.

They degrade through photodegradation (UV light), oxidative aging, hydrolysis, and mechanical stress, releasing additives (phthalates, bisphenol A, flame retardants) that may pose health risks.

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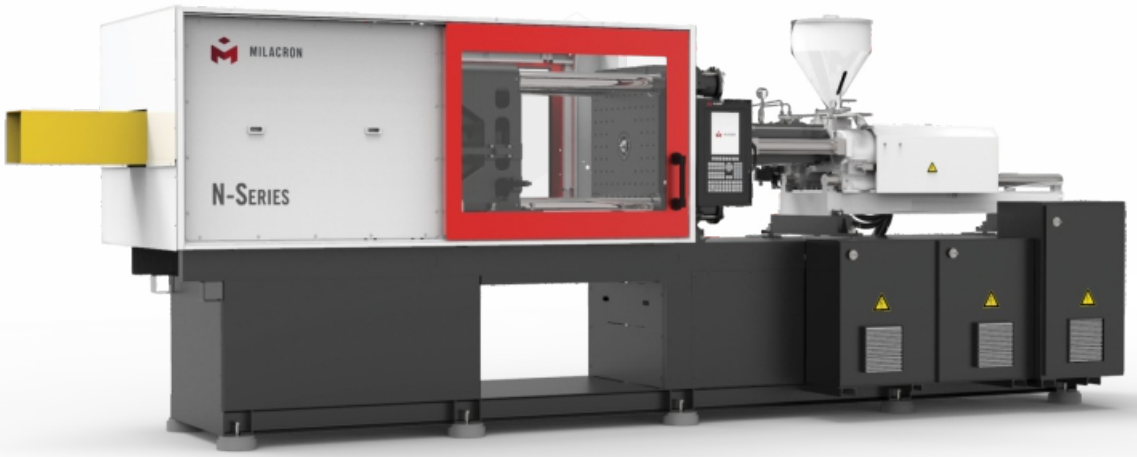

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