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• December 2022



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FROM THE PRESIDENT'S DESK

Mr. Dilip Parekh



Dear Members,

Greetings from Organization of Plastics Processors of India!

At the outset, I wish you all A Very Happy, Prosperous, Peaceful and Healthy New Year – 2023.

PLASTINDIA 2023 is just few weeks away. I am certain that those of you participating in PLASTINDIA as Exhibitors must be busy preparing for the same. Even the members not participating as Exhibitors should visit PLASTINDIA 2023 and engage with the Plastic Fraternity. I hope to meet most of you during PLASTINDIA 2023.

Many Economists and Business Leaders are of the view – “2023 Could Be Anything” May be the world will see the breakout of peace in Ukraine, the taming of inflation, lowering of interest rates globally and, hence, a fabulous stock market boom. On the other hand, may be the Ukraine war will escalate, inflation will surge again, and a deep global recession will send stock markets crashing. We have to prepare ourselves for both the scenarios.

The Union Budget 2023-24 will be presented on 1st February 2023. I hope that there are lots of Budget Proposals favorable to the Indian Plastic Industry. We had meetings with the policy makers and also gave them representations on the issues being faced by the Plastic Industry. I hope that the Union Budget incorporates our suggestions.

Goods and Service Tax (GST) collection kept its momentum in December nudging Rs.1.5 lakh crore, establishing a strong support level despite an expected deceleration in growth. GST has shown itself as a solution to several layers of policy infirmity. Less clutter in tax rates and exemptions ease the burden on litigation. Finally it sends out a very strong signal on policy continuity. Let us hope that GST on plastic products gets reduced.

With Best Wishes,

Dilip Parekh
President

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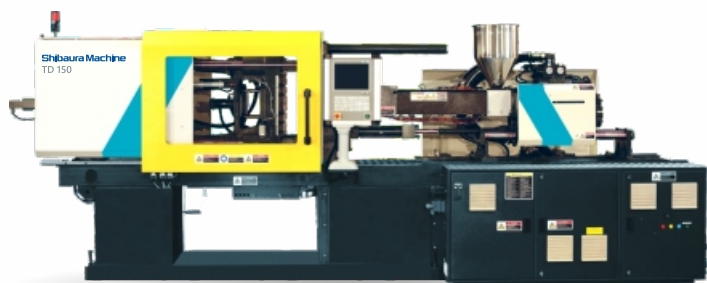
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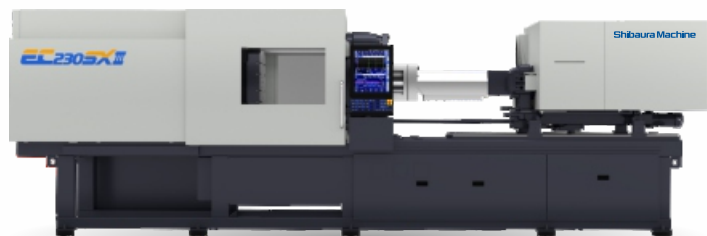
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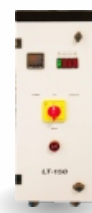
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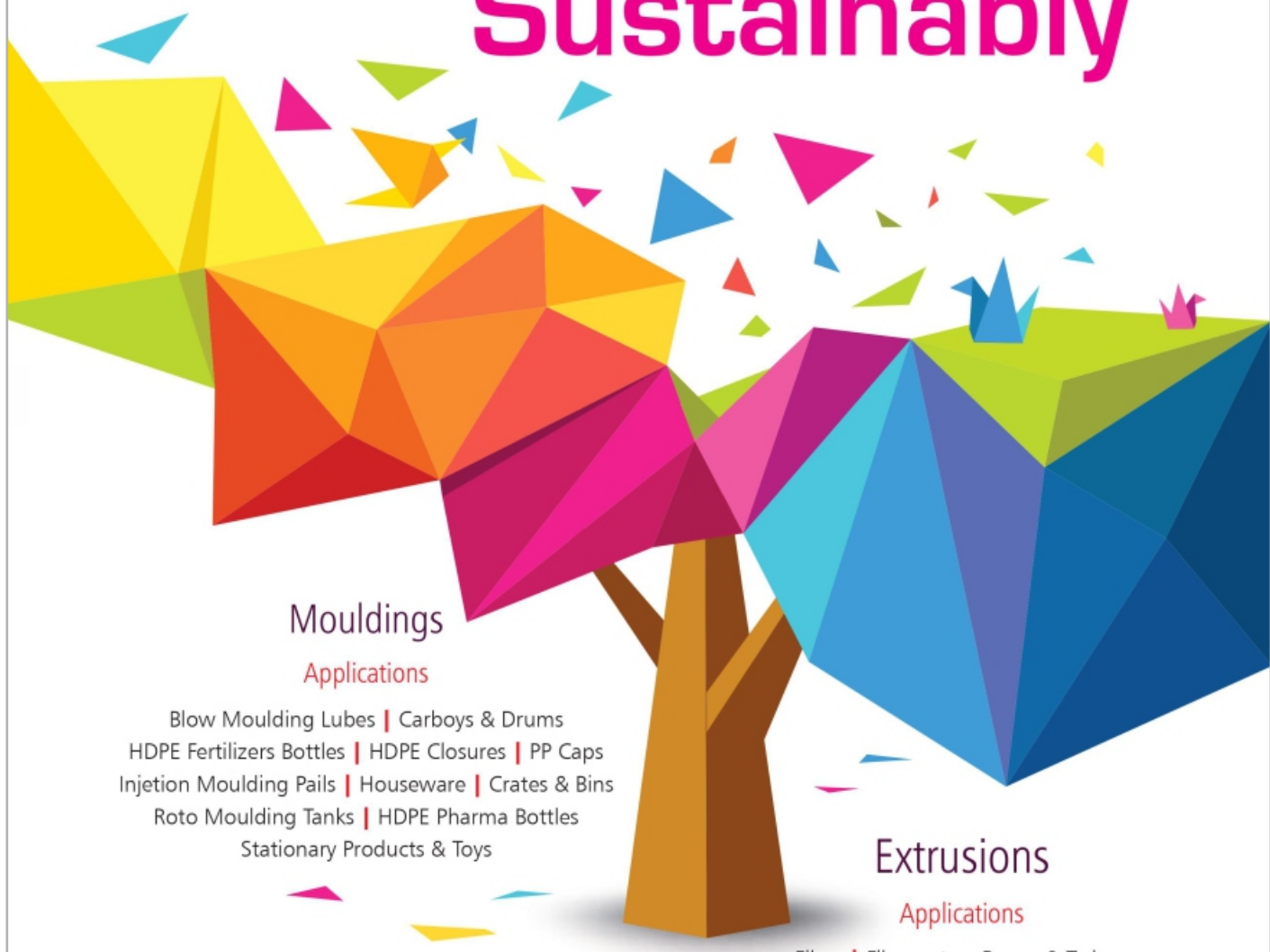


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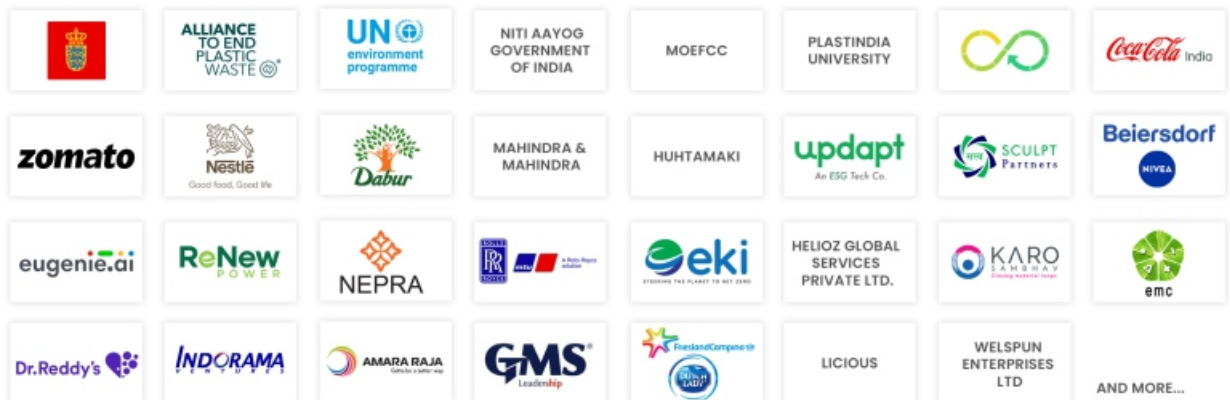
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NEWS FROM INDIA

IOC Clears Plans to Set - up Rs 4,000 Crore PVC Plant in Gujarat



State-run Indian Oil has decided to invest more than Rs 4,000 crore into building a PVC (poly vinyl chloride) manufacturing facility in Gujarat as India's largest oil refiner and fuel retailer seeks to reduce the country's dependence on imports of the resin with wide - ranging applications — from making buckets to pipes, building homes, medical packaging to cellphones and automobiles.

The company board approved the investment proposal recently, sources said, adding the move is part of a strategy to focus on the downstream petrochemical and polymer business with a view to capitalising the supply gap amid rapid growth in demand.

India is the world's largest importer of PVC resin, followed by the US and China. The country imports

more than 2 million tonne, or half of the over 4 million tonne annual demand in 2021. Most of the imports are made from Taiwan, South Korea and Japan.

The import dependence is expected to rise as the demand is forecast to exceed 7 million tonnes by 2030, posting a compounded annual growth rate of over 6% until then.

“The petrochemical market size in India is about \$190 billion but the per capita consumption of petrochemical segments is significantly lower than in developed economies. This gap offers substantial space for demand growth and investment opportunities,” oil minister Hardeep Singh Puri told a petrochemical conclave in Delhi.

“The petrochemical sector supports the prime minister's 'Make In India' and 'Make for the World' initiatives. One of the most important actors driving the growth of petrochemical Industry is the increasing demand for petrochemical products from a growing population and a rapidly expanding economy. India would contribute 10% to the incremental growth of global petrochemical demand,” Puri said.

The government has instituted several policies to boost this sector and improve the ease of doing business, including 100% foreign direct investment through the automatic route, he said.

UFLEX - Circularity in Multi - layered Plastics

Mr. Ashok Chaturvedi, Chairman and Managing Director, Uflex Ltd., shared his insights to build circularity in multi - layered plastics packaging at the Alliance to End Plastic Waste (AEPW) board meeting, held at the New York Stock Exchange (NYSE), New York. Uflex Ltd., is credited to be the first company in the world to recycle mixed plastic waste (since 1995) from its recycling facilities in Noida, NCR-India and has been recognized for its efforts by the Davos Recycling Forum and by the Government of India.

At the AEPW board meeting in New York, Mr. Chaturvedi made a strong case for the continued and ubiquitous use of Multi-Layer mixed Plastic (MLP) that provide a barrier that is required for packaging of a number of essential items including food products; enable high - speed packing; are cost-effective, and are 100% recyclable.



Mr. Ashok Chaturvedi

Mr. Chaturvedi's presentation to the AEPW Board included a virtual walkthrough of the UFlex recycling facilities at Noida, Poland and Mexico to recycle and upcycle post-consumer Multi-Layer mixed Plastic Waste into value-added household and industrial plastic products such as dustbins, outdoor furniture, and more. UFlex runs an advanced injection moulding facility at its Noida site and this was established to recycle granules and to demonstrate various possibilities to the moulding industry. Today, decorative, functional, engineering parts, household and office products, and hundreds of other articles are being manufactured with recycled granules at UFlex's recycling facilities.

Uflex has recycled more than half a million tons of Multi-Layer mixed Plastic Waste (MLP) so far and has spent more than 20 million US dollars in the last financial year at its Poland and Mexico sites.

As an industry leader in building sustainable flexible packaging solutions, UFlex runs a global sustainability initiative called 'Project Plastic Fix'. This initiative is aligned with the company's sustainability approach of 4 R to tackle the challenge of reducing stock and flow of plastic waste in the environment, i.e. Reduce plastic at source by

manufacturing and using films made from PCR | Recycle via upcycling and downcycling of MLP (Multi-Layer mixed Plastic) and PET containers, covers, other articles and bottles | Reuse as source substitution via Pyrolysis | Return to the planet in the form of biomass, if the plastic waste remains uncollected.

Mr. Chaturvedi volunteered to provide technical knowledge and related support to any organization or country that would like to replicate and scale recycling infrastructure to pivot to a circular economy. He urged brand owners and civic bodies across regions and countries to collaborate and strengthen the recycling value chain.

Blast at Jindal Poly Films' Plant in Igatpuri



At least two people died while 17 others grievously injured in a massive fire triggered by a blast in a boiler of a chemical factory in Maharashtra's Nashik district on Sunday 1st January 2022 police said, adding that a few workers are still trapped inside the manufacturing unit's premises.

Maharashtra chief minister Shri Eknath Shinde visited the injured in the hospital and announced ex-gratia of ₹5 lakh each to the kin of the deceased workers.

According to the police, the incident occurred in the Jindal Poly Films factory, located at Mundhegaon industrial area in Igatpuri taluka — around 130km from Mumbai — at 11.30 am on 1st January 2023 after a blast in the boiler. Fire brigade, police, and disaster response force teams rushed to the spot to launch a rescue operation.

The explosion was so loud that it was heard in 20-25 nearby villages, said a senior police officer, adding that a helicopter of Indian Air Force unit in Nashik district was activated to rescue those trapped and assist the fire brigade in their rescue operation.

"A blast led to the fire in which two women have died. Another 17 people are injured and admitted to hospitals. Condition of four of them is stated to be serious," said divisional revenue commissioner Shri Radhakrishna Game.

"Normally, 20 to 25 people work in the plant. But, as it was the first day of the New Year, the number was less on Sunday," said Shri Game. "As inflammable materials are lying everywhere, our first aim is to control the fire. The exact reason behind the blaze is yet to be ascertained. It will take some time."

Nasik Range Inspector General Shri B J Shekhar Patil said, "Efforts are on war-footing to douse the flames, but since it is a chemical factory, things are a bit challenging before the firefighters on the ground. There was initial vapourisation, which led to the fire and the incident took place around 11.30 am."

Meanwhile, chief minister Shri Shinde instructed an enquiry to find out the exact reason for the explosion.

“The expense of treating the injured will be borne by the government. Ex-gratia of ₹5 lakh each will be given to families of the deceased. A high - level inquiry of the incident will be conducted,” he said. “This was an automatic plant and hence human resources were less, so fortunately not many trapped when the fire broke out.”

According to Jindal Group website, the manufacturing plant at Nasik district is the one of the largest facilities for the production of BOPET and BOPP films.

Union minister of state for health Dr Bharati Pawar, who also visited the spot, said, “Unfortunately many people have been injured and some have died. The State Disaster Response Force and National Disaster Response Force also arrived to assist the people on ground in fire-fighting operations. All the government officers are present at the spot.”

A factory worker said the whole area was covered in smoke. “Pressure leakage led to sudden fire. All we could see was smoke and so ran to safety,” said a labourer, declining to be named.

Coca - Cola and Zepto to collect, recycle PET bottles in Mumbai

In the 'return and recycle' initiative, consumers can access the 'Return PET Bottles' feature on the Zepto app, where they

can opt to return up to four empty PET bottles across any brand. The bottles will then be collected by Zepto riders during delivery..



Beverages major Coca-Cola India has partnered with grocery delivery service, Zepto, for a 'return and recycle' initiative for PET bottles. According to a joint statement, the initiative seeks to establish an organized process of collection of PET bottles with 100 per cent traceability, to ensure effective plastic waste management.

Consumers can access the 'Return PET Bottles' feature on the Zepto app, where they can opt to return up to four empty PET bottles across any brand. The bottles will then be collected by Zepto riders during delivery. The initiative has been launched in select locations in Mumbai and will further be scaled to other markets in India soon, the statement added. Zepto has already been leading a movement for paper bag collection on its app where customers have the option to help reuse bags by returning them to the delivery partner.

According to Coca-Cola India, the company's partnership with Zepto in India aims to create a circular economy for plastic by connecting all participants in the PET recycling value chain. "Leveraging the Zepto two-wheeler distribution network, Coca-Cola India seeks to 'collect back' empty PET bottles of any brand from consumers.”

Rs.3500-cr Toy PLI on Cards, Govt may Allow Imported Parts



New Delhi: The government is working to extend Rs 3,500 crore worth of production linked incentive PLI benefits to toys, which are compliant with the norms of Bureau of Indian Standards (BIS), with an aim to make domestic manufacturing globally competitive, attracting investments and enhancing exports an official said. The official said that the measures announced by the government for the toys industry like introduction of quality control orders and increasing customs duties from 20 per cent to 60 per cent has helped in cutting down sub - standard imports and promoting domestic manufacturing in the country.

"Now we are working to extend PLI (production linked incentive) benefits for toy. but it will be given to BIS-compliant toys only. PLI benefits can be given according to different investment slabs which can range from Rs 25 crore to Rs 50 crore or Rs 100-200 crore," the official added.

The proposal is to give the incentives on the full product and not on components as the industry still needs to import certain components which are key to make toys and are not manufactured in India.

BIS is the national standards body of India. It develops and publishes Indian standards and implements conformity assessment schemes, recognise and run laboratories for conformity assessment, implement hallmarking, conduct capacity building programmes on quality assurance.

India - made toys are not only supplied to global brands but they are also creating their own place in the global markets.

Besides toys, the government is also looking at extending these benefits to other sectors such as bicycle, footwear, some vaccine materials, shipping containers and certain telecom products.

Little Genius Toys Pvt Ltd CEO Naresh Kumar Gautam has earlier said that although support measures announced by the government are helping the industry, the PLI scheme and a council would give further impetus as it holds huge potential for creation of jobs.

The government is considering proposals to extend the Rs 3500 - crore PLI scheme to different sectors including toys.

Inter - ministerial discussions are underway on these different proposals.

The government has already rolled out the scheme with an outlay of about Rs 2 lakh crore for as many as 14 sectors, including automobiles and auto components, white goods, pharma, textiles, food products, high efficiency solar PV modules, advanced chemistry cell and specialty steel.

The objective of the scheme is to make domestic manufacturing globally competitive and also to create global champions in manufacturing.

The PLI scheme is also aimed at making Indian manufacturers globally competitive, attracting investment in the areas of core competency and cutting-edge technology; ensuring efficiencies; creating economies of scale; enhancing exports and making India an integral part of the global supply chain.

MTL, IISc Bengaluru Collaborate to Develop 'Innovative & Sustainable' Plastic Packaging Solutions

The primary aim of this MoU is to replace a variety of non-recyclable packaging materials with recyclable monolayer materials, which would assist in making transport affordable and decrease breakage and damage.

A Memorandum of Understanding (MoU) has been signed between India's largest rigid plastic packaging company - Manjushree Technopack Ltd (MTL), and the country's top-ranked university - Indian Institute of Science (IISc), Bengaluru, to develop solutions to change garbage into plastic packaging that enables repeated recycling of products. The association will work together to devise a recyclable elastomeric material for all plastic pumps / triggers. They will also collaborate to strengthen the caps of Polyethylene Terephthalate (PET) bottles, which are made of 100 per cent recyclable plastic.

Creating Plastic Packaging Solutions

MLT, the rigid plastic packaging solutions provider, announced that it had signed an MoU with the Bengaluru - based IISc to develop "innovative & sustainable" plastic packaging solutions, reported NDTV. According to a statement released by MTL, as part of the MoU, the education institute will set up a Centre of Excellence for recycling and upcycling thermoplastics. It is utilised in a broad spectrum of rigid plastic packaging in daily life, ranging from cleaning products such as washing tablets to soft drink bottles.

What Can All Be Expected From This Collaboration?

Thimmaiah Napanda, the managing director (MD) and chief executive officer (CEO) of MTL, said, "This is a significant development which will enable us to explore opportunities in existing technologies developed by IISc in the polymer segment."

Shriji Polymers buys Parekhplast India Limited

Shriji Polymers (India) Limited, manufacturer of packaging solutions in rigid plastics for the pharma industry, announced that it has invested in Parekhplast India Limited and bought a controlling stake in the company. Parekhplast is engaged in manufacturing rigid plastic packaging for various consumer goods sectors – paints, construction chemicals, FMCG, pharma and nutraceuticals sectors.

Industry sources indicate that the deal has been consummated for a majority stake and the valuation could be in excess of Rs. 200 crore. According to industry insiders, Parekhplast India has a top line of Rs 200 crore. Most recent deals in the plastics sectors, including the sale of Hitesh Plastics to Advent-backed Manjushree Technopack was consummated at a valuation of one-time of the total revenue.

The transaction will enable Shriji to expand its presence in the rigid plastic packaging space and diversify its portfolio of verticals to which it caters. Parekhplast has a rich portfolio of clients like Asian Paints, Ajanta Pharma, Berger Paints, Pidilite Industries with multiple manufacturing facilities across three states in India. It will help Shriji access the fast-growing consumer goods sectors and a broader range of pharma and nutraceuticals businesses. Many of these clients have large aspirations for growth, and Shriji sees a great fit between their business and the Parekhplast business, with synergies available to both companies.

Parekhplast's business has grown consistently for many years and is poised for considerable growth with several opportunities and new projects available for growth in years to come.

Commenting on the transaction, Mr. Vishnu Jajoo, Executive Director Shriji Polymers Limited, said, "A significant chapter in our company unfolds today, as we take another meaningful step of expanding our footprint in the rigid packaging business, where we have proven and well-established capabilities and

competencies. This acquisition will also diversify our presence in verticals like consumer goods, paints, food products, domestic-pharma and nutraceuticals, where we see considerable opportunities for growth. The deep client relationships of Parekhplast will assist in this strategic direction of change. We believe that the team and the organization that Mr Charul Ghia, the promoter of Parekhplast, has built have created a strong base which we can add to in a significant manner.

Mr Charul Ghia, Managing Director, Parekhplast India Limited said "The investment by Shriji as a strategic partner has come at the right time when Parekhplast is poised for growth, and the funds brought in will lead to critical debottlenecking and help expand capacities to cater to our wide range of clients with a new and expanded product range focused on the growing consumer needs of the country."

UP Looks for Right Formula to Use Plastic Waste

Striving to increase the use of plastic waste in the construction of roads, the government agencies in UP understood the correct formula for ensuring long-term durability of the roads prepared using such technology.

Head and principal scientist, flexible pavement divisions, CSIR-CRRI (central road research institute), Ambika Behl, gave a detailed presentation on the research studies conducted by the country's apex institute during the Indian Roads Congress annual conclave in Lucknow.

Sharing details of the performance evaluation studies conducted on the road stretches constructed through plastic waste and other material, Behl said the research work has shown that the quality and durability of the road stretches was found satisfactory when using 8% waste plastic by weight of bitumen.

The agencies were cautioned about the size of the shredded waste being used to prepare the aggregate and maintain size under 2.36 millimetre for desired results. "Larger size waste plastic and shredded pieces will not be able to coat the aggregates and presence of unmelted and uncoated waste will hamper the performance," said the principal scientist.

Adding more takeaways from the research work, experts from CRRI told the engineers who had collected at Indira Gandhi Pratishthan for the third day of the IRC's annual conclave that the melting point of plastic waste shall not be more than 140 degrees Celsius, and more importantly, the temperature of the waste plastic asphalt mix below 110 degrees Celsius.

Principal Secretary, Uttar Pradesh public works department, Narendra Bhooshan, said, "We have noted the key points from the CRRI's general report on the research work. The research of the institutes will be studied, and cost-effective and quality-oriented measures will be implemented, including the one on correct usage of the plastic waste in road construction."



PLASTIC PRODUCTS

Eco Flexibles' Monomaterial Packaging LCA Confirms Sustainable Benefits



Eco Flexibles, a sustainable flexible packaging company based in the UK, shared information from detailed lifecycle assessment (LCA) conducted by packaging sustainability specialist Ecoveritas.

The audit found that its monopolymer film solution, EcoFlow, has an environmental footprint 35% lower than standard mixed plastic and paper equivalents when used in typical flexible packaging applications.

The analysis measured key metrics through the full lifetime of packaging, including raw materials, packaging, material and substrate transportation, assembly, distribution, and disposal.

Using a customer's sausage packaging for the project, Eco Flexibles redesigned the pack to

utilize EcoFlow, which offers brands a more sustainable and lightweight monopolymer alternative to traditional flexible packaging substrates. The result found EcoFlow to be significantly more eco-friendly in terms of the carbon footprint, than typical paper, PET, and polyethylene (PE) structures. Tracking the environmental footprint through a measurement of carbon dioxide equivalents (CO₂e) per pack, the review found that at each stage of the product's lifecycle, EcoFlow provided improvements ranging from 28% to 57%.

“We're proud to work with the talented team at Ecoveritas and share more data surrounding our innovative packaging range,” says Simon Buswell, director at Eco Flexibles. “Ecoveritas is a business that mirrors our own in a lot of ways. It has a strong commitment to improving the long-term sustainable future of packaging, as well as a desire to make the often-complex arena of sustainable packaging simpler.”

The Ecoveritas assessment, which is a valuable deep dive into sustainability that any brands or retailers can do for their packaging lines, highlights the key strengths of the packaging. The largest CO₂e advantage was seen in raw material use,

principally due to the pack's lower overall weight compared with the previous film used and less losses in manufacturing.

Triple Expertise: Tesa, Vulkan Technic, and Liebherr Elevating Battery Pack Assembly for Electric Vehicle to a New Level

Launch of a new partnership: Tesa, the international manufacturer of innovative adhesive tapes and self-adhesive system solutions, application equipment expert Vulkan Technic, and Liebherr, the professional for automation systems, combine their core competencies and bring a joint and fully automated assembly line for battery packs on the market. Battery packs represent the heart of every vehicle that is powered electrically. Previously, many individual companies / contacts were necessary for bonding and assembling these battery systems. Now, with an adhesive tape producer, a material manufacturer, and a general contractor working closely together, customers can get everything from a single source.

Battery production is thus simplified by implementing an automated and tape - based solution.

Perfect interaction of individual components

Thanks to its suppleness and flexibility, the reliable adhesive tape solution from tesa can be attached to battery packs with lids as well as to battery packs that are directly connected to the underbody of a vehicle. tesa® ACXplus 76730 Box Seal does not require any curing times and can be applied easily and automatically without high demands on ambient temperature or humidity. Moreover, health and safety risks for users are minimized.

The AZEK® Company Announces New Sustainable Outdoor Living Products, Including Furniture Debut, from TimberTech® and StruXure™



"AZEK" or the "Company"), the industry - leading manufacturer of beautiful, low - maintenance and environmentally sustainable outdoor living products, including TimberTech® decking, Versatex® and AZEK® Trim, and StruXure™ pergolas, announces a new suite of offerings from its TimberTech and StruXure brands. These products, which include a debut

furniture collection, new decking colors, new railing offerings and a new cabana model, will be available in 2023 and will premiere at the 2022 TimberTech Championship, a PGA TOUR Champions event.

"At AZEK, we continue to innovate throughout our portfolio of brands and are committed to revolutionizing the outdoor living industry by providing homeowners with sustainable, high performance and low-maintenance products," said Jesse Singh, CEO of The AZEK Company. "The new offerings from TimberTech and StruXure give homeowners more design options to better reflect their personal style, while beautifying outdoor spaces to create a seamless extension of the home. We are excited to offer a preview of these new products to our distributor, dealer and contractor partners who are attending events being held in conjunction with this year's TimberTech Championship in . Boca Raton, Florida."

The unveiling of these products at the TimberTech Championship will be part of a history-making event for the second year in a row, as it is the first and only tournament in PGA TOUR Champions history with a commitment to achieve Zero-Waste - to - Landfill. The AZEK Company will also be collecting plastic bags from tournament attendees during the week, then processing and turning them into new TimberTech decking.

TimberTech Furniture – The Invite Collection

TimberTech introduces the Invite Collection™, low - maintenance outdoor furniture with an

emphasis on beauty, longevity, comfort and sustainability. TimberTech partnered with Loll Designs to craft the Invite Collection, which is comprised of complementary furniture pieces that are the perfect combination of design and engineering and built to last without regular upkeep.

The collection includes the Aside Table, the Lounge Adirondack, the Mingle Bench and the Conversation Table, all made in the USA from a minimum of 25% post-consumer recycled material and available in a range of colors to fit any style preference.

TimberTech Decking – The Landmark Collection™ Extension

New to the Landmark collection is Boardwalk®, an on-trend gray color that resembles hardwoods like aged white oak or cypress as homeowners continue to seek weathered wood aesthetics. This addition was inspired by worn boardwalks on the coast and includes cascading highlights and lowlights that create unique board-to-board variation, as well as a crosscut cathedral grain pattern for a soft, textured look.

The Landmark Collection currently includes three colors – Castle Gate™, American Walnut® and French White Oak®. This collection is part of the TimberTech advanced PVC decking line, using innovative technology to deliver real-wood aesthetics without harming the environment. It is made from approximately 60% recycled materials and takes otherwise landfill-bound trash, like PVC pipes and old vinyl siding, and turns it into beautiful decking that looks good and does good.

Association of Plastics Recyclers Recognizes Cavitated PE Technology

Void Technologies announced it has received Critical Guidance recognition from the APR for its proprietary process to create low density cavitated films, confirming its compatibility with PE film recycling in the US.

The VO+ technology creates micro and nano-scale air pockets in plastic, creating a film with a reduced environmental footprint.



Void's film technology supports downstream recyclability.

VO + films are produced by blending the masterbatch with PE as part of the film extrusion process. The orientation process causes the VO+ additives to separate from the primary polymer to create a non-breathable voided structure. The combination of **MDO** and cavitation leads to improved film performance including puncture resistance, toughness, and high opacity.

PE films produced using Void's new process offer a 35% material savings from density reduction and down-gauging.

The APR recognition comes after laboratory testing confirmed that the technology is compatible with current, industrial-scale, film to film recycling processes. Thanks to the low density of VO+ PE films, they will float in

separation systems. During the recycling process, VO+ films will turn from white to clear and will retain similar properties to recycled PE resins.

Void's VO+ PE masterbatch technology was developed for use in a range of applications such as laminates, frozen food, wicketed bags, and flow wraps for confectionery.

Nutrioli Partners with Aptar Food + Beverage in Mexico to Bring Breakthrough Packaging to the Edible Oil Market



In the food market, brands are continuously seeking innovative and sustainable packaging solutions for their products. Aptar Food + Beverage partners with brands to improve everyday life for consumers through packaging solutions that further enhance the consumer experience and address safety, health and wellness, convenience, and sustainability.

Nutrioli, a leader in providing edible oils in Mexico, partnered with Aptar Food + Beverage to improve consumers' experience, through a convenient and innovative dispensing solution that aims to make oil dispensing spill-proof, enabling a more hygienic and clean experience with a crisp cut-off of oil flow as consumers stop squeezing the bottle. Not only does the new

solution improve convenience and hygiene, it also adds a safety element and helps reduce food waste.

Nutrioli chose to convert part of its portfolio to Aptar's Tapered 33-100 with SimpliSqueeze® flow control valve, a lightweight solution that is ideal for inverted packaging. Besides the directional dispensing and clean product cut-off, the SimpliSqueeze valve is manufactured from Swimming Silicone, a unique material that allows for the valve to be separated from the closure in PET recycling stream. This means that the valve will rise to the surface of the float tank during the recycling process for easy removal, allowing the remainder of the packaging to be recycled. Nutrioli is the first brand in Mexico to use this innovative and sustainable solution.

For consumers, dispensing is fast, easy, and hygienic. "Chop! Chop! Chop!" has been Nutrioli's jingle since 2005 and now the brand is using it as a motto that replicates the action a consumer takes when squeezing the bottle of soy oil to apply to food or cooking utensils, demonstrating the ease of dispensing. This unique approach is being used in the advertising and promotion materials that Nutrioli specifically developed to educate consumers about the benefits of the oils and the drip-free closures that make their use even more pleasant.

Covestro and TMT Launch their 1000th Polyurethane Wind Rotor Blade

Under its current five-year plan, China aims at doubling its wind and solar power output by

2025. That is why also the drive for technological progress in the field of renewable energies has never been stronger. Polyurethane (PU) resin, an innovative manufacturing solution for wind turbine blades, has penetrated the epoxy-dominated market in recent years. Covestro and Zhuzhou Times New Material Technology (TMT), a pioneering PU wind turbine manufacturer, recently announced the launch of their 1000th PU wind turbine blade.



PU in wind-blade production is a transformative innovation delivered by Covestro teams around the globe. With better mechanical properties, an efficient production process, and a more cost-effective production solution than conventional fiberglass-reinforced epoxy blades, PU blades are opening a new chapter in the wind blade industry.

Covestro and TMT signed a memorandum of cooperation about a year ago, based on which the significant commercialization results have been achieved. PU wind turbines are now being used in commercial wind farms throughout China.

TMT produces PU wind blades ranging from 59.5 meters to 94 meters in length with different blade designs and layup structures to meet the growing

demand for longer and larger wind blades. The 94-meter wind turbine blade, capable of generating 8 MW of energy, is the largest PU application for Covestro so far. Multiple TMT factories manufacture these blades under different temperatures, humidity, and altitude, proving the wide applicability of PU resin in the manufacturing process.

In addition to wind turbine development, Covestro and TMT have jointly developed PU railway sleepers, which are more durable and cost-effective in maintenance than traditional wood and concrete sleepers. Covestro, an integrated PU solution provider, will cooperate with TMT to provide various PU resins, coatings, and PU machinery solutions.

MCC Partners With Extrupet and Coca - Cola to Bring Recyclable Shrink Sleeve to The South African Market



RecycLABEL floatable is a Polyolefin film shrink sleeve label that easily separates at the container grinding stage. The separation allows for easier recycling using a wet recycling process. The floatable label rises to the surface while the PET sinks, allowing clean PET to be recycled.

Highlights

- Low density – floatable solution for the recycling of PET containers
- Superior Gloss and Transparency for “no label look” sleeve labels
- Low Shrink Force to avoid containers squeezing during full or empty labelling process
- Excellent print quality

Industry Collaboration

With a goal to bring sustainable solutions to the local market, MCC joined forces with Extrupet, the largest and most advanced recycler of PET (polyethylene terephthalate) bottle materials on the African continent, to develop a solution that provides superior performance in the recycling stream.

Extrupet applaud MCC for this development. PVC and PET shrink sleeve labels on PET bottles pose serious challenges to recyclers worldwide and do not in their own right have a recycling solution for end of life. We would encourage more brand owners to support these developments by making the change to their packaging design and look forward to celebrating announcements of the same. Congratulations to the MCC team in South Africa for going the extra mile to get this over the line.” says Chandru Wadhvani, Joint Managing Director at Extrupet (PTY) LTD.

Berry Superfos' Paint Containers Win PIA Award

Paint containers manufactured by Berry Superfos using recycled plastic collected as part of a

closed loop system have been named Best Recycled Plastic Product in the Plastics Industry Awards 2022.

This is the second award for the containers, which in September also won the RECOUP Award for Best Development or Innovation to Enhance Recyclability or Re-use.

Berry's Closed Loop Recycled Paint Containers are being produced as the result of a circular partnership that enables used paint containers to be collected and recycled by ensuring that enough of the residue paint in the containers is removed.

The waste paint is collected and re-engineered into new paint by paint recycling and recovery social enterprise organisation Paint360. The containers are then reprocessed into recycled pellets by Berry Circular Polymers. According to the company, the new circular plastic performs as well as current PCR material to provide an additional source of feedstock to meet the demand for recycled plastic pack solutions.

The company believes the entire closed loop project delivers significant environmental benefits. It reduces the overall impact of both the paint and its packaging through the reduction of waste product sent to landfill and the carbon emissions associated with incineration. The Paint360 project, is already saving more than 70 tonnes of embedded carbon per month, the company claims.

ALPLA Develops New Carbon - Optimised Bottle

Packaging and recycling company ALPLA has developed a new carbon - optimised prototype solution.



Newly Developed Bottle

The ultralight packaging system with a bottle made entirely of recycled HDPE, (rHDPE) underscores the company's global sustainability strategy.

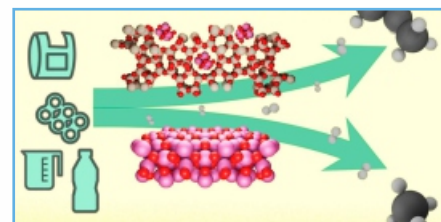
The company claims that the carbon - optimised packaging, designed to be used in beauty care, has 71% less carbon consumption compared with packaging types. The bottle and cap are completely recyclable and it has total weight of approximately 14 grams. The bottle is made entirely of recycled HDPE (rHDPE) sourced from the company's own plants in the EU. It is also produced exclusively using renewable energy.

The product carbon footprint (PCF) comprises all the emissions throughout a product's life cycle, including its disposal. The areas of package contents. However, retail and use phase were not considered as these are not relevant to the climate impacts of packaging. As no clear standards currently exist for climate - neutral products and offsetting certificates, ALPLA is focusing on reducing emissions within its own sphere of influence.

The company is investing 50 million euros a year in recycling activities to this end. ALPLA already widely uses renewable energies and recycled materials at its plants and is minimising transport journeys with in-house plants directly at the customers' premises.

MIT Scientists Develop New Chemical Process to Break Down Plastics

According to new research from MIT and elsewhere a chemical process using a catalyst based on cobalt has been found to be very effective at breaking down a variety of plastics, such as polyethylene (PET) and polypropylene (PP), the two most widely produced forms of plastic, into a single product, propane.



Chemical Process

Propane can then be used as a fuel for stoves, heaters, and vehicles, or as a feedstock to produce a wide variety of products, including new plastics, thus potentially providing at least a partial closed-loop recycling system.

The finding is described in the open access journal JACS Au, in a paper by MIT professor of chemical engineering Yuri Román-Leshkov, postdoc Guido Zichitella, and seven others at MIT, the SLAC National Accelerator Laboratory, and the National Renewable Energy Laboratory.

Recycling plastics has been a difficult problem, according to Román - Leshkov. Because the long-chain molecules in plastics are held together by carbon bonds, which are “very stable and difficult to break apart.” Existing techniques for breaking these bonds tend to produce a random mix of different molecules, which would then require refining methods to separate out into usable specific compounds. Leshkov added: adds: “there's no way to control where in the carbon chain you break the molecule.”

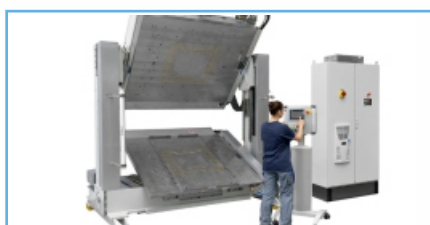
A catalyst made of a microporous material called a zeolite that contains cobalt nanoparticles can selectively break down various plastic polymer molecules and turn more than 80 percent of them into propane.

Although zeolites are riddled with tiny pores less than a nanometer wide (corresponding to the width of the polymer chains), a logical assumption had been that there would be little interaction at all between the zeolite and the polymers. However, the opposite turned out to be the case: Not only do the polymer chains enter the pores, but the synergistic work between cobalt and the acid sites in the zeolite can break the chain at the same point.

The materials needed for the process, zeolites and cobalt, “are both quite cheap” and widely available”. Although today most cobalt comes from in the Democratic Republic of Congo. Some new production is being developed in Canada, Cuba, and other places. The other material needed for the process is hydrogen.

The researchers tested their system on a real example of mixed recycled plastic, producing 'promising' results. But more testing will be needed on a greater variety of mixed waste streams to determine how much fouling takes place from various contaminants in the material.

BBG Supplies Aircraft Interior to American Aerospace Company



BBG, the German based systems partner for the plastics processing industry, has supplied an electric composite press for aircraft interior parts to a reputed aerospace company in the USA. Convinced of the production technology, the company ordered a pilot plant including the moulds for the production of lightweight components.

Relying on decades of experience in the development and manufacturing of mould carrier systems and composite presses, BBG is especially well positioned in the field of composites. Hydraulic presses continue to be the standard today but a US customer has intentionally chosen a system that is equipped with an electric drive. One of the main advantages of the electric composite press is the high level of efficiency of the electric drive concept, which reduces energy consumption by around 35Wh per production cycle. Further benefits include particularly quiet

operation and high dynamics, which contribute to shorter cycle times. Moreover, an electric drive is much easier to maintain than the hydraulic variant.

All systems are manufactured at Mindelheim / Germany and shipped worldwide from there. The current composite press is specifically configured for use in aircraft construction. The mould is manufactured by BBG North America and then shipped at the same time as the press.

The mould mounting plates are 2,200 x 1,500 mm, and molds can be moved and positioned without any effort thanks to integrated pneumatic roller bars. The angle of traverse of the lower carrier plate is 0 to 27 degrees, and that of the upper plate is 0 to 75 degrees. This opens the press wide enough for operators to access the mould comfortably. Maximum capacity is 3,500 kilograms for the lower plate, and 3,000 kilograms for the upper plate.

Intelligent pressure control allows for a press force of 60 US tons — which corresponds to about 53 kN — and an infinitely variable adjustment option from 50 kN onwards.

Easy Control 2.0 ensures ease of handling

The composite press is operated via the Easy Control 2.0 user interface developed by BBG itself. The man-machine interface simplifies the programming and operation of the press while increasing productivity and improving process reliability at the same time. For most of BBG's customers, this is a core concern: Just as in aircraft

manufacturing, production must deliver reliable results while being simple and manageable. The user interface shows functions and workflows of the press and the mould, users can operate the machine quickly and easily without PLC knowledge.

BBG is currently very successful in the US market. In addition to aerospace company, various longstanding customers have also ordered machines and molds.

New Pepsi Goal Would Deliver 20% of Beverage Servings Via Reusable Models by 2030

PepsiCo will pursue multiple strategies to reduce proportion of single use packaging.

Pepsico announced a goal to increase the proportion of beverage servings delivered in reusable packaging to 20% by 2030.

Pepsico acquired the reuse platform SodaStream for \$3.2 billion in 2018. Sodastream devices use tap water and carbon dioxide cylinders to deliver carbonated drinks in the home, office, or school setting.

Pepsi plans to introduce Sodastream to workplaces and universities.

PepsiCo has also set a goal to reduce the amount of virgin plastic per serving by 30% by 2030 and to reach “Net Zero” by 2040.

The company will pursue four approaches to achieve its new packaging goal, including expanding its Sodastream

business, building out its refillable PET and glass bottle offerings, growing its fountain drinks business with reusable cups, and accelerating growth in powders and concentrates.

PepsiCo currently has refillable and returnable glass and plastic programs in Mexico, Guatemala, Colombia, Chile, Germany and the Philippines.

New Technology Bonds Aluminum with Polyamides

With many benefits for numerous potential applications, including in the burgeoning electric vehicle market, Celanese's Zytel Bonding Technology achieves stronger bonds than overmolding or welding.

Celanese Engineered Materials has developed a new chemical bonding technology for joining its Zytel polyamides and aluminum—a common design challenge in numerous automotive and industrial applications. Zytel Bonding Technology works via application of a liquid solution to an aluminum surface that is then activated via hot plate welding or overmolding. The resulting structural bond leads to higher burst, tensile and shear strength than conventional adhesives, mechanical interlocking and mechanical assembly methods. In burst pressure testing, the joint held while the plastic showed a cohesive failure.

With the ability to be added at room temperature, the coating can be sprayed, brushed, dipped or applied to a substrate in an injection mold, and it features a shelf life of up to 3 years.

Compatible with multiple polyamide chemistries, this new bonding technology can join PA6, PA610, PA612, PA66, and PPA with aluminum. Celanese notes that all of these materials are available within the Zytel and Zytel HTN portfolios.

The disparate materials are joined in a three-step process, starting with the removal of aluminum oxide from the aluminum part surface via water sanding, wet blasting, or plasma/laser treatments. Next, Zytel Bonding Technology is applied via spray, brush, dip or other methods at room temperature. The coating is activated in the third step by overmolding plastic onto an aluminum insert or by hot plate welding a previously molded Zytel part to the aluminum component. The chosen method depends on the geometry of the final hybrid aluminum-plastic component.

At K 2022, Giacomo Parisi, marketing director automotive electrification at Celanese (formerly Dupont), discussed development of the technology and an early potential application — a hybrid cooling plate for an electric vehicle battery module.

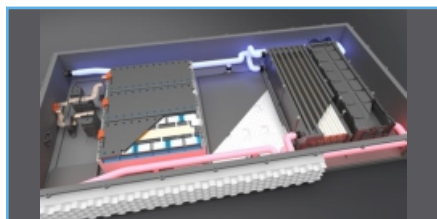
“Hybrid” in this case because the two-part component features a plastic bottom and aluminum top. In an electric vehicle, these plates sit below the battery modules with water glycol cycling through them to ensure the batteries stay within the optimal operating range between 20 and 40°C.

At present, most cooling plates are monomaterial metal-on-metal constructions that experience the

dissipation of heat through the bottom of the part. By utilizing a Zytel polyamide, the hybrid plate features better insulative properties. The company undertook testing to ensure the plastic/metal component could withstand the pressures and water-glycol exposure to be experienced in the field by the part. In the end, a 30% glass-filled Zytel HTN family of polyamides based on PPA was chosen. In addition to its robust mechanical properties and strong chemical resistance, this material was picked on the basis of its high dimensional stability—requisite in what has to be a flat part.

From a stress perspective, the water-glycol within the cooling plate reaches pressures of approximately 10 bar (145 psi). In terms of application temperatures, on the high side, the cooling plates work to keep the battery modules from overheating and cascading into a thermal runaway situation. In colder environments, the plates work to keep the battery modules from dropping below freezing.

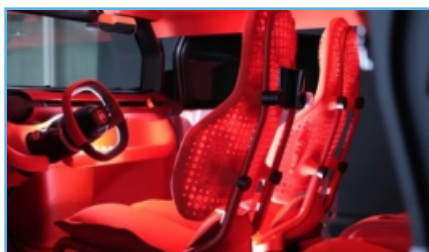
In addition to the cooling plate, Celanese sees potential application of the technology in EV battery plugs; structural components, like beams, brackets, pillars, and mounts; noise and vibration reduction components; filters; modules; housings; clips; quick connectors; and flow leads, among others.



The cutaway in the center shows the combined polyamide / aluminum cooling plate that sits

beneath battery modules in electric vehicles. Photo Credit: Celanese Engineered Materials

Wonderfully Versatile: Plastics Shape the Car of The Future



The versatility of plastic is one of its strongest characteristics, and it makes it particularly popular amongst designers. Once you have found the right plastic for a project, you have endless design possibilities. Plastic is also a favored material for BASF's design team: in collaboration with Citroën, the chemical company rethought the classic car - with plastic as the central building block that made the implementation of the innovative concept possible in the first place.

Alex Horisberger: In many aspects, the concept car answers questions that are directed at the mobility of tomorrow: How can I simplify my commute? Can a vehicle save resources and be fun at the same time? How can it look good at the same time? The result is a particularly lightweight yet robust and durable automobile - without frills, unnecessary luxuries and well thought out down to the smallest detail.

What challenges arise in such a development? What requirements have to be met?

Horisberger: Durability, recyclability and simplicity play a crucial role in the novel

concept. At the same time, the aim was to make sustainability look good. And in terms of production technology, the simplification principle was also consistently implemented; for example, the driver and passenger doors are identical. During development and design, we worked closely with Citroën to select the right materials from BASF's broad portfolio.

To what extent can plastics help meet these challenges?

Horisberger: Plastics are incredibly versatile and can therefore contribute to the functionality and functional integration of many vehicle components. Our polyamides have also proven their long-term durability many times over under typical automotive conditions without aging or corrosion. Of course, the sustainability aspect is also crucial: BASF is developing plastics that enable both mechanical and chemical recycling to support the industry in its transition from a linear to a circular economy. In addition, these engineering plastics can be made from renewable or recycled raw materials.

Bend it like PU – Plastics in Sport

Today, no one can imagine leather balls, wooden rackets, bamboo poles or cinder tracks in sporting competition. Natural materials have now been almost completely replaced by other materials: plastics. They are light, robust and highly functional. Thanks to intensive research, they are also becoming more and more efficient – and ultimately lead to new world records.

Today, sport and plastics are inextricably linked. But that was not always the case: billiard balls used to be made of ivory. To meet the demand, about 120,000 elephants were killed every year. Then, in 1863, Michael Phelan offered a prize of \$10,000 for an alternative to ivory. A few years later, John Wesley Hyatt developed one of the first plastics: celluloid. Billiard balls were never made of celluloid, but of phenolic resin, but table tennis balls were.

A world record with plastic

Even though plastics have long since found their way into our everyday lives, they were far from being commonplace in sport. In the 1980s, the Swede Björn Borg was still an ace on the tennis court with his wooden racket with strings made of natural gut. Today's tennis rackets are made of carbon fibre reinforced plastics (CFRP). They are lighter, more manoeuvrable and at the same time more robust than their predecessors – and are partly responsible for the fact that the serve of today's tennis professional is about 28 km/h faster than that of a tennis professional of that time. The fastest measured serve was achieved by the Australian Sam Groth in May 2021 and amounted to 263 km/h.

Many sporting world records would not have been possible without plastic. At the 1952 Olympic Games, the American Bob Richards jumped 4.55 metres with a bamboo pole. In 2021, the Swede Armand Duplantis reached over 6 metres – with a pole made of CFRP. Also at the 1952 Olympics, a wooden javelin flew 73.78

metres, which won American Cy Young a gold medal. Today's world records are just under 100 metres – set with javelins made of glass-fibre reinforced plastics (GRP).

Balls, boats and pools – durable thanks to plastic

A famous example of a piece of sports equipment made of plastic is the football. In the past, people played with a ball made of sewn-together leather honeycombs filled with a rubber bladder. Today, that is hardly conceivable. For fair competition, it is important that the ball does not absorb rainwater and that it returns to its original shape after a kick, which enables a precise trajectory. This is achieved thanks to polyurethane (PU), the material from which official match balls are made today. In most cases, nothing is sewn any more, but is heat-bonded in a special process called thermal bonding. This makes the ball not only durable but also highly symmetrical.

Natural materials have now also been replaced by plastics in water sports. Today, sailing yachts are largely made of CFRP or GRP. The hulls of the yachts can thus be made particularly light and robust at the same time. Special antifouling films made of silicone protect the hull from algae and mussel deposits.

In swimming pools, the material – in addition to contact with water – is exposed to chlorine for a long time. Plastics such as the copolymer Polystone from Röchling not only withstand this over the long term, but are also easy to clean and UV-resistant.

Plastics from head to toe

Today, sportsmen and sportswomen are dressed in plastic almost from head to toe. This is because functional clothing made of plastic fulfils an elementary requirement: it is warming in the cold and cooling in the heat. In addition, the breathable, lightweight synthetic fibres ensure that perspiration is not absorbed but released to the outside. Friction is also reduced thanks to functional clothing. They fit the body like a second skin and provide optimal freedom of movement.

For winter sportsmen and women, the head is also made of plastic: professional helmets are usually made of the very light material carbon on the outside. On the inside, expanded polystyrene (EPS), for example Styrofoam, is used. This can deform in the event of a fall and compensate for the impact forces.

Today, sports shoes hardly contain any natural fibres or leather. Upper materials, soles, insoles – all components of a sports shoe must be light, durable and efficient. Plastics meet all these requirements. Silica technology, which also helps car tyres to grip better, provides a firm hold. And thanks to the cushioning properties of certain rubbers, joints are relieved and protected.

Material research: faster, higher, greener

Research is constantly being conducted into new plastics and technologies to provide even more comfort and performance for the wearers of shoes. BASF has

developed a foam made of a new expanded thermoplastic polyurethane (E-TPU). According to the manufacturer, Infinergy is elastic like rubber, but resiliently light. The material is used in the adidas Boost. The midsole of the running shoe consists of 2,500 E-TPU capsules, which pop up like corn kernels when you run and increase their volume tenfold. With the help of this technology, the runner receives an energy recovery and thus a boost.

Sustainability also plays a role in the new developments. Adidas, for example, spent almost a decade researching to finally bring a running shoe to market with the UltraBoost DNA Loop that is completely recyclable for the first time – true to the motto "Made to be remade". It consists entirely of TPU – from the sole to the laces. By the way: BASF's Infinergy material is also used in this model.

Plastic – a material that is revolutionising sport

The list of sports equipment made of plastic is, of course, much longer. Whether in tennis, football, water sports or athletics – today's sports equipment has very little in common with what it used to be. Thanks to plastics, rackets, balls, clothing and co. are becoming lighter, more flexible and at the same time more robust. This increases the performance and comfort of the athletes. Plastics have made today's world records possible in the first place.

Or as the German 400 - metre hurdler Harald Schmid aptly summarises: "Plastics have revolutionised sport!"

First Boeing 777 with AeroSHARK Takes off on Passenger Flights

- Surface technology developed jointly by Lufthansa Technik and BASF
- Fuel and emissions savings of around one percent calculated
- Modified aircraft now begins validation of savings potential in daily flight operations



The first Boeing operated by Swiss International Air Lines (SWISS) took off on a passenger flight with the AeroSHARK surface technology jointly developed by Lufthansa Technik and BASF. The fuselage and engine nacelles of the aircraft were recently fitted with approximately 950 square meters of so-called Riblet films, which replicate the flow - efficient properties of shark skin in order to reduce drag.

Flow simulations have already identified a savings potential of just over one percent for this type of aircraft. The first scheduled flights with the aircraft registered as HB-JNH will now serve to validate this savings potential in daily flight operations.

Thanks to its special surface structure of microscopic ribs - known as Riblets - AeroSHARK reduces the frictional resistance of this aircraft's outer skin by just over one percent, according.

to the calculations and flow simulations. As a result, fuel consumption and CO2 emissions are also reduced by the same order of magnitude. For this Boeing 777-300ER of SWISS, this would equate to annual savings of around 400 tons of kerosene and more than 1,200 tons of carbon dioxide.

The AeroSHARK modification of the HB-JNH began at the end of August and culminated in several test flights on September 8 and 9. During these flights, it had to be demonstrated in detail that the AeroSHARK modification had no negative impact on the operational safety and handling of the Boeing 777.

As soon as the calculated savings potential has been validated in actual flight operations, the full-scale roll-out at the launch customers SWISS and Lufthansa Cargo is planned to begin.

Further Boeing 777s will then receive the AeroSHARK modification as part of regular maintenance layovers . Both airlines plan to have all their Boeing 777-300ERs and 777Fs successively fitted with AeroSHARK.

This would make them the first passenger and cargo airlines worldwide to optimize a complete sub-fleet with this technology. When all of the current eleven Boeing 777s at Lufthansa Cargo and twelve at SWISS have received their AeroSHARK modification, they will reduce the Lufthansa Group's carbon footprint by more than 25,000 tons annually.



PLASTIC RAW MATERIALS

ExxonMobil Doubles Polypropylene Production at Baton Rouge

- Startup of new polypropylene unit increases capacity to meet growing demand for high-performance products
- Polypropylene is used in everyday products, including lightweight auto parts that improve fuel efficiency
- Expansion project generates economic development and jobs

ExxonMobil announced the successful startup of its new polypropylene production unit at the Polyolefins Plant in Baton Rouge, Louisiana.

The unit increases polypropylene production capacity along the Gulf Coast by 450,000 metric tons per year, meeting growing demand for high-performance, lightweight and durable plastics, particularly for automotive parts that can improve fuel efficiency and reduce vehicle emissions. Polypropylene, a polymer with several applications, is also used to improve the safety and efficiency of everyday products like medical masks and food packaging.

ExxonMobil maintained its investments in this advantaged project through the COVID pandemic and related economic downturn. The total capital investment was more than \$500 million. ExxonMobil's extensive mega-project management experience and unrivaled technology capability enabled the unit to start up according to planned cost and schedule.

Aramco and TotalEnergies to Build a Giant Petrochemical Complex in Saudi Arabia

The Saudi Arabian Oil Company ("Aramco") and TotalEnergies have taken the final investment decision for the construction of a world scale petrochemical facility in Saudi Arabia. The "Amiral" complex will be owned, operated, and integrated with the existing SATORP refinery located in Jubail on Saudi Arabia's eastern coast. The investment decision is subject to customary closing conditions and approvals.

The petrochemical facility will enable SATORP to convert internally produced refinery off-gases and naphtha, as well as ethane and natural gasoline

supplied by Aramco, into higher value chemicals, helping to advance Aramco's liquids to chemicals strategy.

The complex will comprise of a mixed feed cracker capable of producing 1.65 million tons per annum of ethylene, the first in the region to be integrated with a refinery. It will also include two state-of-the-art polyethylene units using Advanced Dual Loop technology, a butadiene extraction unit, and other associated derivatives units.

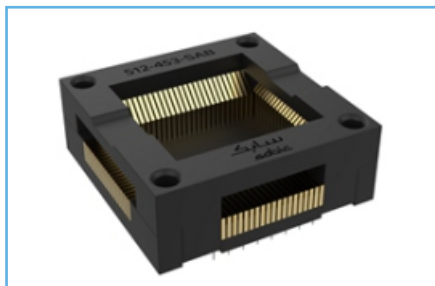
The project alone represents an investment of around \$11 billion, of which \$4 billion will be funded through equity by Aramco (62.5%) and TotalEnergies (37.5%). Its construction is scheduled to begin during the first quarter of 2023 with commercial operation targeted to start in 2027.

Eventually, the complex will provide feedstock to other petrochemical and specialty chemical plants, located in the Jubail industrial area, which will be built, owned and operated by globally renowned downstream investors, entailing an estimated additional \$4 billion of investments. This will support the establishment of key

manufacturing industries such as carbon fibers, lubes, drilling fluids, detergents, food additives, automotive parts and tires.

The overall complex, including adjacent facilities, is expected to create 7,000 local direct and indirect jobs.

Sabic's New LNP™ KONDUIT™ Compound Delivers Exceptional Thermal Conductivity & Flow in Complex Ddr Memory Ic Test Socketsenvision



SABIC has introduced LNP™ KONDUIT™ 8TF36E compound, a new specialty material that helps address the stringent demands of burn-in test sockets (BiTS) used to stress-test double-data-rate (DDR) memory integrated circuits (ICs). As the number of pins and the testing temperature for DDR ICs increase and their dimensions shrink, materials used in BiTS components must deliver enhanced properties. SABIC's new compound provides very high flow to help enable complex, miniaturized BiTS designs; excellent dimensional stability and high temperature resistance to enhance BiTS functionality during testing; and high thermal conductivity to rapidly dissipate heat afterwards.

Compared to incumbent materials such as thermally conductive filled nylon, LNP KONDUIT 8TF36E compound delivers higher flow and better dimensional stability. Customers could benefit from using this new material, which can potentially address the full range of their requirements.

Putting Performance To The Test

Double-data-rate memory ICs, which fetch data twice per processor clock cycle, accelerate data transfer to meet the high throughput demands of gaming, artificial intelligence and other data-intensive applications. This technology is putting greater pressure on test socket manufacturers, whose products must accommodate higher voltages, higher - temperature environments, ever-smaller form factors and an increased number of pins. For these reasons, BiTS designs for DDR ICs require high precision, high durability and workability.

LNP KONDUIT 8TF36E compound features high flow to help enable miniaturized and complicated designs with many pin points. During the testing process, it can easily withstand typical testing temperatures of 150°C while maintaining good dimensional stability to help improve the accuracy of measurements. This high heat capability can potentially permit BiTS to be re-used repeatedly without degrading. Further, LNP KONDUIT 8TF36E compound can handle extreme temperatures up to 260°C, building in capability to address higher-heat BiTS requirements in the future. Finally, to quickly dissipate heat after testing, the

new product provides high thermal conductivity of up to 4.5W/m.k.

The new SABIC compound is well suited for fixed, structural parts, including latches and adaptors, in BiTS assemblies.

New LNP KONDUIT 8TF36E compound is globally available.



Trillium's New Funding Advances it to Next Phase of Commercialization of Plant-Based Feedstocks for ABS and More

Hyosung and HELM AG funded the new investment round to support Trillium's aim to commercialize bio-acrylonitrile.



Back in April 2021, it was reported son new startup company Trillium Renewable Chemicals (TRC), Knoxville, Tenn., and its announced plans to make chemicals from renewable feedstocks, including acrylonitrile (Bio-ACN) for ABS with a net-zero footprint. Trillium was jointly

created by Belgium - based venture capital and Belgium-based independent investment firm Capricorn Partners and Southern Research – an independent nonprofit, scientific research organization with more than 400 scientists and engineers working across three divisions: life science, engineering, and energy & environment.

Headquartered in Birmingham, with additional laboratories and offices in Frederick, Md., and Houston, SR supports related industries with independent research on behalf of commercial and government clients, objectively assessing new technologies and providing process development support. It also pursues entrepreneurial and collaborative initiatives to develop and maintain a pipeline of intellectual property and innovative technologies that positively impact real - world problems. SR has exclusively licensed its patented chemical manufacturing platform to Trillium to accelerate commercial development of this new technology which converts renewable feedstocks, such as sugar or glycerol to chemical products like acrylonitrile, propylene glycol, and acrylic acid.

Trillium recently announced that the company had raised a \$10.6M Series A financing round. The first closing totaled \$5.5M and was led by South Korea's Hyosung Advanced Materials Corporation. Current investor Capricorn Partners also participated. Germany's Helm AG has agreed to join the Series A round to bring the total to \$10.6M. This funding builds on the company's non-dilutive award of \$2.5M from the U.S.

Department of Energy. Following a successful pilot program, the funding advances Trillium to the next phase of commercialization – the construction and operation of a market demonstration unit.

Trillium's innovative Bio-ACN process sustainably converts plant - based feedstocks into valuable chemicals like acrylonitrile and acetonitrile. Acrylonitrile is currently manufactured from oil and gas derivatives to make a diverse range of consumer and industrial goods including plastics such as ABS, carbon fiber, textiles, flocculant, synthetic rubber, and other valuable materials. These materials are used in finished products such as auto and aerospace parts, consumer announced electronics, sporting goods, apparel, medical gloves, toys, personal care products, and water treatment chemicals.

Halogen - Free Flame Retardant Masterbatch Series for Electrical Cables From Gabriel - chemie

Gabriel-Chemie has held a leading position in the production of flame retardant masterbatch for many years.

One of the main objectives of the group is sustainability. Which is why gabriel - chemie has successfully developed a series of halogen - free flame retardant masterbatches for the electrical tube conduits market.

After the launch of “Maxithen” CO2-reduced white masterbatch, Gabriel-Chemie presents a new series of flame retardant halogen - free masterbatch for the electrical conduits and tubes market. This new portfolio of products emphasizes the importance of sustainability in the group. The safe use of many everyday products is guaranteed only through the addition of flame retardant additives. Whether in vehicles, electrical equipment and wiring, consumer electronics, furniture, textiles or in high - rise and underground structures: flame protection is essential for ensuring maximum safety.

The use of halogen - free masterbatch is essential for several reasons. It helps avoiding the corrosion phenomena of electronic equipment and extruder machines. It reduces emissions of toxic gases in case of fire and keeps outdoor properties from harmful external influences. The improved recyclability of the plastic product helps reducing the group's carbon footprint.

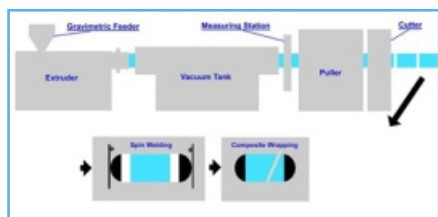
Gabriel - Chemie offers a valid technical and advantageous economical solution for tubes and electric conduits. The halogen - free masterbatch not only complies with the flame retardant norm EN 61386, but also with the halogen-free norm according to EN 50642 and the low smoke norm IEC 61304-2. The new series is available in a full product range with more than 10 masterbatch.



PLASTIC MACHINERY

Fully Automated Extrusion Process Enables Use of Composites for Manufacturing Pressure Tanks

The greatest challenge of the project was how to extrude large diameter thin wall polypropylene tube accurately and without distortion. This was a rare engineering application that has only been accomplished in a few cases around the world. The pipe can be as much as 26 inches in diameter with wall thickness from 0.1 to 0.15 inch. The final product must be capable of maintaining pressures exceeding 150 psi. As if that wasn't enough of a challenge, this was Amtrol's first experience with extrusion and a critical portion of the project development happened during the depths of the Covid epidemic.



Tubes are extruded in a closed-loop control process and transferred to a spin-welding station to attach the injection

molded caps and then the unit is wrapped with composite fabric for greater strength.

The entire process is this: The vessel walls are extruded and cut; injection molded caps are spin welded to enclose the vessel; an OD steel band is attached as reinforcement for internal components; and the assembly is then transferred to a composite winding machine to add strength to the assembly. This all occurs in a highly automated production process with the extrusion portion all under a single control system that automatically adapts process parameters based on in-line measurements of the tube.



To manufacture to Amtrol's quality standards all components of the extrusion line must be under integrated control. Real-time measurement data is critical to automatically making in-process adjustments when required.

Precise control of the extruder is a central requirement, and for a completely automated line, every major component had to be looped into a single control system. Essential to closing the loop was to get inline process measurements that are used to dynamically control line or haul-off speeds. This enables Amtrol to optimize the entire process and then automatically adapt to process drifts when required.

Finding a Solution

After a great deal of research Amtrol chose KraussMaffei to provide the extruder and serve as the system integrator for the project. KraussMaffei in turn brought in industry-leading European technology partners including iNOEX which has deep experience in gravimetric feeders, measurement, and closed-loop control systems that adaptively control processes based on measurement data. Sica was brought in to build the haul-off and cutoff stations.

Very few processors have ever built an extrusion line with a scope like this one, making it a learning experience for all involved. Great engineering, implementation, and collaboration efforts ultimately helped achieve Amtrol's objectives.

Gravimetric Feeding to Integrated Haul - Off



The gravimetric feeding system provides precise dosing and its control plays an essential role in system integration.

While the consistency of the extrusion process is important, what's happening on both ends of the extruder is equally critical to achieving fully automated production. The advantages of gravimetric feeders and blenders are well known. Controlling the amount of material entering the extruder by weight rather than volume is inherently more accurate, particularly in handling variations in the bulk density of the material. And material feed consistency was certainly important in this application. But especially critical is the connective capability of the iNOEX Saveomat feeder control. It integrates perfectly with the KraussMaffei extruder control with the ability to set control loops, based on weight per length, in which the haul-off speed can be dynamically adjusted to generate the proper wall thickness, or by mass throughput, which is managed by increasing or decreasing line screw speed.

The Sica puller has an anti-crush sensor to maintain proper traction without excessive deformation of the tube.



Further downstream, the Sica pullers are equipped with anti-crush sensors designed for working with thin-wall pipe. Ten independently driven pulley tracks arranged around the pipe OD provide the extended surface contact area needed to achieve maximum pulling force. While some deformation of the extrusion is necessary to get sufficient traction, it provides just enough pressure to do the job. A clean cut at the edge of the cylinders also proved to be a challenge, but Sica's wide selection of available cutting tools provided the desired cut quality needed.

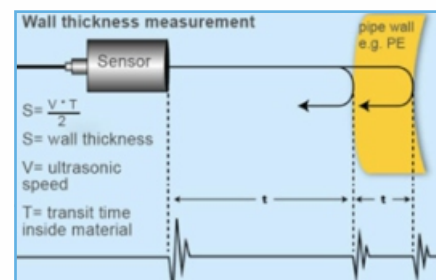
Measurement is the Key



The iNOEX ultrasonic measuring system is placed just outside the vacuum tank. It provides precise dimensional data which is fed back into the closed-loop control system.

The key to tying the whole system together is the iNOEX AFM6300 wall measuring system. Based on ultrasonic

sensing technology, the measuring station has the ability to precisely measure pipe wall thickness, diameter and roundness. Typically, systems like this are employed, not just as a quality check, but to enable the extrusion process to run closer to the minimum required wall thickness which can provide substantial material savings. With very thin wall tubes like Amtrol runs, the emphasis is more to ensure that the product is staying within very demanding upper and lower tolerances for wall thickness. Roundness is important as well since the tubes will be capped in a fully automated process.



Ultrasonic sensors accurately measure the inner and outer wall positions to analyze wall thickness, diameter and roundness of a complete cross section of the extrusion.

In operation, an ultrasonic sensor works on the time-of-flight principle to calculate very precise physical measurements. As the tube runs through a thin water jacket, the sensor units send out an ultrasonic wave that echoes back when it hits an object in its path. In tube extrusion, the first echo comes when a pulse hits the pipe OD, the second when it hits the ID wall (or more precisely, the medium behind it). By measuring the time elapsed between transmission and echoes, very fast and precise dimensional

measurements can be calculated for wall thicknesses as small as 0.01 mm (0.0004"). The robust Aurex ultrasonic measurement technology provides complete statistical data which can be used for process optimization or quality documentation.

But the more immediate function at Amtrol is to provide real-time measurement data that is the key enabler to total process control. Closed - loop control systems such as this can be configured in several ways. At Amtrol, the measurement data is sent to the gravimetric system which is measuring and controlling each component of the line. The KraussMaffei C6 control system uses the measurement results to determine if the line speed needs to be adjusted to maintain a constant weight per length of the product.

The Aurex system is measuring the dimensions of the product and determines (based on the measured minimum wall thickness) if the weight per length set point needs to be lowered or increased. If a thin spot approaches the minimum tolerance, the thin point

controller will increase the set point of the weight per length controller in the extruder control system.

Staying Under Control

According to Amtrol director of engineering, Jody McKinley, a big hurdle was finding the formula to synchronize all the production components – feeder, extruder, vacuum tank, and haul-off – to deliver the product they needed. But keeping the process under control day in and day out was

critical to their success. He says, "The product has to have consistency and uniformity. But with the partnership of our machine builders we were able to add data analytics into the process with some SPC controls which minimizes process variables." By doing that, he says, "we are able to produce a consistent product over a period of time."

Amtrol is one of the few companies in the world that can make a lightweight, high-performing pressure tank with such a thin-walled design. As a result, Amtrol customers enjoy the advantages of a durable, competitive product with unique user benefits. Creatively applying extrusion know-how from a team of process and engineering experts is what got them there.

More Automation Comes to Blown Film Processing

At K 2022 in Dusseldorf, Windmoeller & Hoelscher debuted its latest offering to automate the blown film process and simplify changeovers. Throughout the week - long October show, W&H gave live demonstrations of the technology, called Easy2 Change, on a multi-layer Varex 2 blown film line.

Easy2 Change is said to support the machine operator during every necessary step of a product change - over. An intuitive HMI gives the operator full transparency and control throughout the change - over. Innovative technology detects the bubble stability and checks the frost line to ensuring reproducible high film quality.



The software guides operators through the process to prevent errors while guiding them to pending tasks, W&H says. All components are automatically set, including W&H's fully automated Arctis air ring.

Compared to an experienced operator, the number of necessary clicks for a product change is reduced by more than 70% and the time needed is cut by over half, says W&H.

Compact, All-Electric Dryer

Machine designed specifically for engineering resins.

Moretto's X COMB mini dryer, which was unveiled at K 2022 in October, is a super - compact, all - electric dryer specifically designed for engineering resins. The honeycomb desiccant rotor with molecular sieves is made of 100% zeolite, one of the most efficient moisture absorbent in the market. The dryer's "adaptive" feature is said to ensure a very gentle and consistent polymers treatment with dew point levels up to -52°C. Two variable - flow turbo-compressors only supply the required airflow optimizing the energy consumption. The original OTX (Original Thermal eXchanger) hopper can reach efficiency levels which are unique in the drying equipment market.

X COMB was designed using most advanced thermodynamic simulation software, a modern approach which helps reaching incredible product performances and at the same time shortens the product time - to - market. X COMB is equipped with an assisted lid and safety device, which enable the operator to carry out inspection and maintenance procedures in a very easy and safe manner.



The LCD touch screen is a standard built-in intelligence feature that only requires two parameters — the type of material and throughput — all the other parameters are automatically set. The interaction between the operator and the system is extremely easy thanks to the graphic user interface.

The dryer includes multiple connectivity options such as RS485, Modbus and USB for data downloading. It also can be connected to MOWIS, our supervision & management software which enables connectivity between different systems, processes, plants and even facilities.

A More Practical Approach to Implementing Digital Manufacturing

Most plastics equipment manufacturers now offer some form of digital connectivity to

serve the vision of Industry 4.0. But for most processors it's not so simple as plugging in the equipment and waiting for the magic to happen. Moving toward a digital manufacturing model is as much about change management as it is about technology, though the technology you choose is extremely important to realize tangible benefits from your investment.



Conair, the well-known plastics auxiliary equipment manufacturer has been working with processors to affect this change for five years now and has learned a lot about the process. Conair's enabling technology for this is its SmartServices® platform, a cloud-based solution for connecting auxiliary equipment. It offers the ability to connect all of your plastics processing equipment (even older or non - Conair equipment) to a single web-based dashboard, analyzing equipment data and converting it into usable, actionable information for operators, maintenance technicians, plant managers, and even procurement specialists.

But having the tech is one thing. Getting it productively implemented is quite another. Here's Conair's take on getting it done.

Managing Change - We'll get to the technology in a moment, but first we must talk about change management. According

to Conair's business development manager for SmartServices, Andrew Novick, "Conceptually digital transformation can be intimidating, but having a partner like Conair who supports the change management process by ensuring proper installation and training maximizes the benefits of digital manufacturing."

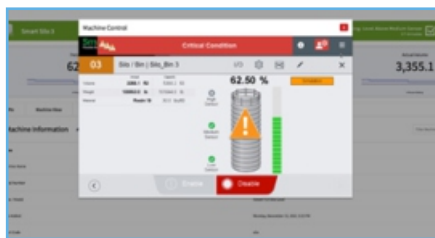
Doing that requires engaging key stakeholders at every level of the organization. Key players in this process:

- **The Champion** – A significant change project in any organization needs a champion. In most companies this is not someone from executive management, but nonetheless someone well positioned to understand all the ramifications of the project from financial to technical to operational. The champion is the driver of the project who is respected and trusted by all levels of management as well as by plant floor workers.
- **The Coach(es)** – This is the person who really understands how your operation works at the user level and that fellow employees respect. Not necessarily a supervisor, the coach nonetheless has influence on the team and can help realistically assess the challenges of the effort. Engaging the coach will help you make better decisions and help other team members buy into the project.
- **The Executive** – In times of change executive management needs to do more than just green light the project. It needs to create an environment

where employees understand why change is important to the success of the organization, and that the agents of change feel that they have the support and commitment of executive management to see it through.

While it is possible to have a successful digital transformation without full commitment at each of these levels, it is unlikely you'll achieve the full potential of the project without it. Some of the major considerations for the team to consider include:

- What are your goals at the strategic level?
- How is the organization structured, who are the critical contacts, and how will their jobs be affected by digital manufacturing methods?
- How will you measure success?
- How will you explain the imperatives of the project to employees and train?
- How will you maintain momentum for continuous improvement once the initial stage(s) of the project are complete?



Why This Approach Matters Monitoring auxiliary equipment can be extremely valuable, not just to track the health of that equipment, but to provide relative visibility to almost everything running through the operation. Most plants have lots of different

brands of equipment, particularly when it comes to auxiliaries, and only monitoring a few does not give you the whole picture. This is where a more comprehensive solution makes the difference because:

- It's a platform for an entire plant — most predictive maintenance approaches still focus on individual pieces of equipment. SmartServices can integrate with almost any kind of auxiliary equipment.
- It's a single system—no longer is your process information spread across multiple apps. All data flows into a single dashboard.
- It's built for growth—for many processors, a good first step is getting data streaming to enable equipment monitoring, establish operating baselines and trigger alarms for non-conforming conditions. This is a step towards true predictive maintenance and better data will indeed lead to process optimization for those inclined to act on this information.

Because the system is cloud-based, there is little IT support requirements beyond the initial installation, software updates are always in sync, and data is accessible to any user and device you chose to permit.

Maximizing the Rewards of Digital Manufacturing - Unlocking the potential of digital manufacturing begins by evaluating the risks of your current methods. For example,

- How many hours of unplanned downtime or maintenance do you have a week?

- What is the cost of lost production?
- What does it cost in time, people and service providers to correct problems?
- How do you know if actual production efficiency, output and quality is living up to your projections?

If you're like many processors, you may not have very precise answers to these questions. But with real data you will be able to get these answers and more. This can ultimately help you react more quickly to problems as they reveal themselves. Better machine monitoring systems can issue and distribute alarms when any process deviates from preset parameters. But the next level is to use that data in a forward-looking mode to continuously improve your processes, identify production bottlenecks, identify and plan required maintenance and more.

As for getting to a system that can do all that, it pays to work with a partner that understands, not just how to integrate with machine controls, but the entire plastics production process. This is the roll that the SmartServices support team plays. They can work with your team to identify opportunities for meaningful digitalization, plan and execute implementation, and help train employees on the technology. They can even remotely troubleshoot and diagnose issues, so that you can get support when you need it.

At the end of the day it's really on the processor to see that they properly execute and reap the rewards of digital transformation.

But they don't have to venture down this path alone. Companies like Conair offer a proven technical partner with the experience to get it done.

Davis - Standard to be Systems Integrator for Novel EDI Flat Die

Die uses motorized lip - adjustment, said to be three to five times faster than heated-bolt adjustments.

Davis - Standard has announced it will be the systems integrator of the Nordson EDI Prodigy die system, said to be a more responsive automatic profile control (APC) die for cast film, sheet and extrusion coating. The die, which was tested and proven at Davis-Standard's lab in Fulton, N.Y., is three to five times faster than previous heated die bolt type systems. The new APC uses a direct motorized bolt adjustment for instant die-lip adjustment vs. slower responding heaters used in current thermal bolt models.



"The Prodigy die, when integrated with Davis-Standard's control system, is able to achieve APC control specification in a few minutes compared to more than 10 minutes when using a heated die bolt, depending on the situation. We look forward to demonstrating these results to the industry and integrating the

Prodigi™ die into our machinery portfolio," notes Rick Keller, Davis - Standard's v.p. market development for Converting Systems. "Being the process control system integrator of Nordson in this endeavor as well as other vendors for major developments enables us to deliver value-added technology to our customers."

North American Plastics Machinery Shipments Slow Down

The Plastics Industry Assn. (PLASTICS) reported lower shipment levels compared to the previous quarter, but higher year-over-year results.

North American shipments of primary plastics machinery, including injection molding and extrusion equipment, slowed in the third quarter according to the statistics compiled and reported by the Plastics Industry Association's (PLASTICS) Committee on Equipment Statistics (CES).

Reporting companies' preliminary estimate of shipment value was \$353.8 million for the third quarter. That figure was down 14.4% compared to the previous quarter, but was 6.0% higher than the figure from a year earlier.

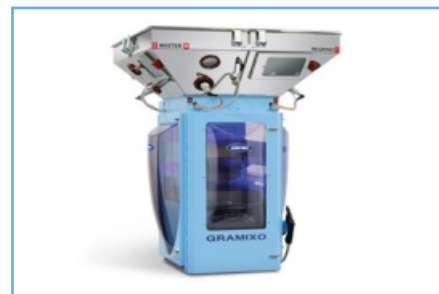
By equipment type, injection molding shipments fell 17.1% in the third quarter, while shipments of single - and twin - screw extruders rose by 4.9% and 12.4%, respectively. Compared to the third quarter last year, shipments of single -

screw extruders fell by 13.1% while shipments of twin-screw extruders rose by 19.3%.

Continuous Loss-in-Weight Batch Blender

Reaction time of new device is said to be 10 times faster than industry standard.

From Moretto's Contex brand, the Gramixo is a continuous loss-in-weight batch blender able to handle up to six components. The free weighing inclined mixer ensures proper mixing of all ingredients. Extreme dosing precision is guaranteed by the exclusive double eyelid shutter device that allows dosing control in just 25 ms; a reaction time said to be 10 times faster than traditional systems on the market.



Thanks to the VIS (Vibration Immunity System), a special control algorithm that identifies and smooths out dosing peaks caused by system vibrations, Gramixo can be installed directly on the extruder with the certainty of keeping the weight per meter ratio set constant throughout the process.

The supplied 10-in. touch view control with icon-based interface allows an easy and intuitive management of the dosing process.

Intelligent Static Neutralization for Pneumatically Conveyed Material Handling Systems

Simco-Ion's IQ Power BPS-C power supply allows for advanced monitoring and control of static eliminators within its Conveyorstat systems.



Simco-Ion has introduced the IQ Power BPS-C power supply, which reportedly allows for advanced monitoring and control of static eliminators located within the Simco-Ion Conveyorstat. The new system is expected to drive efficiency gains for converters by intelligently managing the ionizers within their trim systems.

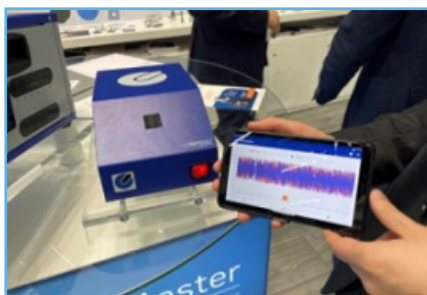
When connected to the IQ Power Control Station, the BPS-C allows for the static elimination system to communicate directly with a PLC, via one of six supported protocols. This enables information like bar cleanliness, ion output (in mA) and ionizer status to be reported and recorded at the PLC. The BPS-C is backward compatible with all Conveyorstat Systems manufactured after 2015. Older systems are upgraded via easily replaceable static bars inside the

Conveyorstat. This means that high - performance static elimination is guaranteed throughout the life of your trim system.

Conveyorstat systems are designed to provide in-line ionization for neutralizing static charges on materials passing through pneumatic conveying systems to prevent them from becoming jammed. The BPS-C, which powers the Conveyorstat, was designed to bring static elimination for these systems into the 21st century.

New Temperature Controller, Hot Runner for Micromolder

Günther unveiled a new hot runner temperature controller and a specialized hot runner built specifically for the Babyplast line of molding machines at K 2022.

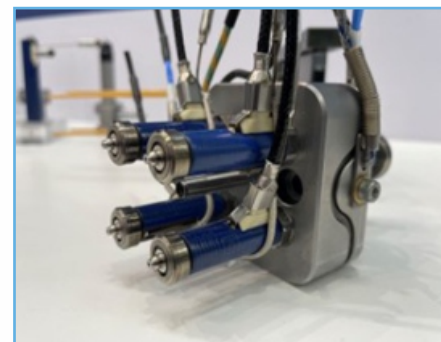


Günther Hot Runner Technology debuted the blueMaster pro hot runner temperature controller at K 2022, offering control of 6 to 24 control circuits and the ability to control them via web-enabled devices, including smart phones. In addition to the built-in display, the blueMaster pro allows users to access several devices on a tablet or quickly check the operating status remotely.

Günther's blueMaster pro hot runner temperature controller can be accessed via smart devices.

An assistance function provides support when setting up new tools and multicavity molds and multi - component systems can be operated using the integrated group management feature. To achieve such integrated temperature control data interface standardization was required, and the blueMaster pro meets Euromap 82.2 protocol.

In addition, the company unveiled what it says is the first needle valve hot runner the the Babyplast line of molding machines. Mold height is typically a limiting issue, but Günther overcame this with a patented actuation system. Running at Babyplast's K 2022 booth, the specialized hot runner molded a 0.35g part from PA6. The mold is headed to a customer that will use it to run PEEK. The four-drop system features a pitch of 26 by 26 mm, with a needle diameter of 1 mm.



Targeting microinjection molding, including the Babyplast machine, this new hot runner has a 1-mm needle diameter.

Creating A Sustainable Version of Plastics

(Curtesy : Plastics and Rubber Asia)

Plastics are becoming more sustainable as a result of the new additives that improve recyclability and durability while also raising the quality of post-recycled materials.

Granular - Sized Solutions Benefit The Environment

Despite criticism of plastics, the industry is working to create polymers that not only overcome the negative connotations associated with them -- such as their inability to be recycled or getting washed into the environment as microplastics -- but also support their sustainability goals.

With advances in material technologies, addressing the environmental impact of plastics while improving their properties to meet a wide range of industry requirements for the material is no longer rocket science.

Thus, incorporating masterbatches and additives into virgin polymers in the production of plastics can improve the properties of plastics such as the colour or modify the materials with stabilisers, antioxidants, antistatic agents, flame retardants, or other plastic additives that are compatible with different applications.

The masterbatch market is expanding. According to research company Ceresana, global demand for masterbatches is expected to reach 5.5 million

tonnes by 2031, with colour masterbatches dominating the demand and plastics for packaging accounting for 36% of the demand share, followed by construction, transportation, electrical, and industrial applications.

Brands Pivoting to More Recycled Content

Consumer brands want to see more recycled plastic content in their products and to enable multiple uses of their products to increase their sustainability.

Major global trade platforms, such as the recent K2022 Show in Germany, are championing this strategy. The former highlighted the most recent plastic masterbatches portfolios, whose increasing use is enabling plastic circularity.

US-based materials firm **Milliken & Company** showcased its new DeltaFlow viscosity modifier for recycled polypropylene (rPP). The company, which claims to be the only one offering this latest chemistry in an easy-to-handle, non-dusting, solid concentrate form for the recycling market, believes that DeltaFlow grades will benefit PP recyclers by increasing the melt flow rate of rPP for injection moulding processes.

According to Allan Randall, Global Product Line Manager, the technology also has lower volatile organic compounds (VOCs) and improved organoleptics, and it could complement the advances being made in recycling.

The product allows rPP to replace virgin resin in a wide range of its end-use applications,

and it allows brands to incorporate more rPP into their products, making it easier for them to meet their sustainability targets.

Stabilisers to Improve Recycling

Recycling is central to the circular economy vision. Mechanical recycling, which has remained the most important and widely used recycling method, is being supplemented by advanced recycling technologies.

Mechanically recycled plastics will eliminate more than 1.7 million tonnes of virgin polymer feedstock by 2030, up from 688,000 tonnes in 2020, according to **S&P Global Platts Analytics**.

Songwon Industrial, a South Korean specialty chemicals manufacturer and exhibitor at K2022, is focused on mechanical recycling of PCR with its range of re-stabilisation antioxidants.

The primary and secondary antioxidants in the Songnox binary blends family have been "specially evaluated" for mechanical recycling of polyolefins (POs), Songwon said. The blends enhance processing as well as long-term thermal stability, enabling recyclers to provide better, more affordable recycled resins.

Without stabilisers added during processing, the melt-flow characteristics of mechanically recycled PP changes quickly, sometimes drastically, leading to poor processing and the loss of mechanical properties. According to Thomas Schmutz, Leader Global Technical Service, Testing & Application

Development at Songwon, using the company's blends results in higher - quality, more cost - effective materials.

Also at the K2022, additives manufacturer **SI Group** rolled out its Evercycle additives brand for recycling. For PET recycling, it is said to provide process stability, colour control, and lower acetaldehyde levels. Benefits of polyolefin recycling include process stabilisation and improved performance, allowing for higher recycled content.

Other Evercycle products on display at the show included the PET-102D for colour control in PET bottles, trays, and fibres (pellet form); PET-103D for colour control in PET bottles, trays, and fibres (liquid form); PP-101S for stabilisation in HDPE and PP flexible packaging, and LD-101S for stabilisation in LDPE rigid packaging.

According to Irfaan Foster, Market Development Director at SI Group, the formulated additive solutions encourage more plastics to be recycled back into the economy, resulting in a more sustainable industry.

Extending Reuse Potential Of Plastics

Longer use and reuse of plastics, according to Swiss speciality chemicals firm **Clariant**, contributes to sustainability. At the K2022, the company displayed its new anti - scratch additive based on renewable raw materials for PPs and thermoplastic olefins (TPOs). According to the company, the Licowax AS 100 TP allows moulded plastic goods in a variety of consumer applications to

retain their original look and feel for a longer period of time. This has the potential to significantly increase service life while also improving property retention and part reuse.

The new additive helps to prevent scratches and mars on the surface of goods during handling, transportation, and end-use. This is particularly beneficial for otherwise scuff-prone applications such as interior automotive parts like dashboards and door panels, household appliance casings, cosmetics packaging, and lightweight luggage.

In addition, the company offered its new AddWorks AGC 970 light stabiliser solution for PE agricultural films, which is said to improve product durability. The granular additive, which can be dosed directly during conversion, allows converters to extend the service life of products by increasing UV resistance and resistance to high levels of agrochemicals.

Meanwhile, Clariant's Licocare RBW 560 TP Vita is a bio-based wax that promotes easier mould release and improves surface quality. It also means fewer polyester parts get stuck in the mould, resulting in less injection moulding downtime.

Short shots and rejects are also reduced. Because of faster cycle times caused by shorter cooling cycles, it is possible to produce more parts per machine hour. As a result, energy consumption is reduced. Because of faster cycle times and shorter cooling cycles, it is possible to produce more parts per machine hour. Thus, energy consumption is reduced.

Along the same vein, German chemical firm **BASF** introduced as a premium service its Valeras plastic additives and the newest addition to the Valeras portfolio, Product Carbon Footprints (PCF) of various antioxidants and light stabilisers. This complements the recently launched solutions IrgaCycle and RegXcellence.

Also featured was the tailored additive package from the Irgastab range designed specifically for PE rotational moulding resins to extend the service life of rotomoulded parts, while also saving time, energy, and costs during processing. Outdoor applications, such as water storage tanks, are common uses for rotomoulded products. Extreme weather is said to have a negative impact on the properties of these applications.

On the other hand, the Irgatec CR technology is the backbone of advanced meltblown nonwoven materials that can meet the growing demand for personal hygiene and filter applications. Irgatec CR 25 is intended for PP meltblown modification, which is of high interest for filtration materials, according to BASF. Plus, it can be implemented directly by meltblown producers without additional investments to existing lines, allowing specialty PP nonwoven products to reach the market faster.

Similarly, BASF's IrgaCycle range includes additives solutions that are specifically designed to improve the properties of mechanically recycled plastics for different target industries.

CIRCULAR ECONOMY/ BIO-PLASTICS/ RECYCLING

CJ Biomaterials and NatureWorks Sign Master Collaboration Agreement on Development of New Bioplastics

The two companies will jointly develop new sustainable materials based on CJ's amorphous PHA and NatureWorks' PLA resins.

CJ Biomaterials, Inc., (U.S. office in Woburn, Mass.) a division of South Korea - based CJ CheilJedang and leading producer of proprietary PHA (polyhydroxyalkanoate), and NatureWorks, the leading global producer of PLA (polylactic acid), have signed a Master Collaboration Agreement (MCA) for the development of sustainable materials solutions based on CJ Biomaterials' Phact Biodegradable Polymers and NatureWorks' Ingeo biopolymers in applications ranging from compostable food packaging and food serviceware to personal care, films, and other end products.

The initial focus of this joint agreement will be to develop biobased solutions that create new performance attributes for compostable rigid and flexible food packaging and food

serviceware. The new solutions will also aim to speed up biodegradation to introduce more "after-use" options consistent with a circular economy model. CJ Biomaterials and NatureWorks plan to expand their relationship beyond cooperative product development for packaging to create new applications in the films and nonwoven markets. For these additional applications, the two companies will enter into strategic supply agreements to support development efforts.

First Automotive Plastic Parts from Mixed Automotive Plastic Waste

LyondellBasell and Audi collaborate on creating seatbelt buckle covers for the 2023 Audi Q8 e-tron.



A first - time collaboration to help close the loop for mixed automotive plastic waste has been underway between polyolefins manufacturer LyondellBasell and Audi. For the

2023 Audi e-tron luxury SUV and its coupe-shaped Sportback sibling, Audi is installing plastic seatbelt buckle covers made using LyondellBasell plastic that supports the sourcing of feedstocks from mixed automotive plastic waste. Plastic components from customer vehicles that can no longer be repaired are dismantled, shredded, and processed by chemical recycling into pyrolysis oil.

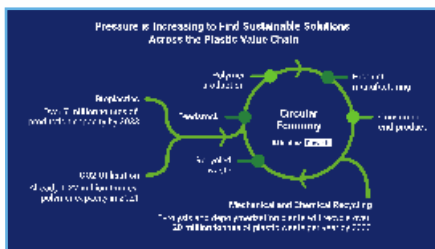
The pyrolysis oil is then used as a raw material in LyondellBasell's manufacturing process for the production of new plastics, replacing virgin fossil feedstocks. The recycled content is attributed to the Audi product via a mass balance approach. Said new business development director Erik Licht at LyondellBasell Advanced Polymer Solutions, "As part of the PlasticLoop project, we are working with Audi to establish an innovative closed - loop process, recycling plastic automotive parts for use in new vehicles. For the first time, we are using chemical recycling to recycle mixed automotive plastic waste into plastic granulate for automotive interior applications."

With this process, LyondellBasell, Audi, and chemical recycler SynCycle (Next Generation Group and BDI), succeed in recycling a

stream of material which today is mostly only suitable for energy recovery. This reduces the usage of fossil-based primary materials for the Audi Q8 e-tron and keeps valuable feedstocks in a circular loop. Materials produced from pyrolysis oil reportedly are of the same high quality as virgin materials and have the same properties. Chemical recycling offers an alternative to energy recovery and complements mechanical recycling.

Market Report Points Out Key Drivers of Circular Economy

IDTechEx has undertaken research which indicates that a key requirement for every company in the polymer value chain is to develop and deliver a sustainability roadmap.



The market drivers are becoming more significant, and industry activity is responding accordingly. There are an emerging number of solutions, but in many cases, the economic and environmental viability remains unfounded.

The market drivers influencing the progression to greater sustainability across the polymer industry come from four main entities: governments (through regulation), retailers or brands, non-governmental organizations

(NGOs) or equivalent, and the public. Lobbying, investments, pledges, consumer spending habits, and more all play a role, but it is likely regulation and how they are monitored and enforced that will be the most significant.

IDTechEx has three reports on sustainable polymers covering the recycling of plastic waste, assessing the use of bio-based and CO2 feedstocks. Each of these solutions has a range of technical challenges. Crude oil prices have been exceptionally turbulent, presenting challenges. The success of all approaches will depend not only on the product properties but also on the “green premium” and the ability to decouple prices from the incumbent raw materials.

Plastic Recycling

Recycling is critical in establishing a truly circular economy. Expectedly, mechanical recycling processes continue to progress, but throughout 2022 and continuing into 2023, significant industrial activity has and will surround chemical recycling - most notably in depolymerization and pyrolysis projects. This remains controversial, with NGOs accusing players of “greenwashing” and petrochemical giants leveraging third-party life cycle assessments and championing this as the key piece of the puzzle. This debate will rage on. IDTechEx reviews the claims in its latest report on “Chemical Recycling and Dissolution of Plastics 2023 - 2033” but ultimately thinks that there is a beneficial role for these processes.

PureCycle Targets Plastic Election Signs for Recycling

PureCycle Technologies teamed up with the League of Women Voters (LWV) in Florida to recycle polypropylene (PP) election signs after the midterm election on Nov. 8, 2022 were over.

Starting the day after the election, PureCycle and the LWV started collecting the signs. By the end of the month, they recycled more than 15,000 signs, diverting thousands of pounds of plastic waste from the state's landfills, waterways, and green spaces.

Volunteers from LWV chapters in Florida's Volusia, Seminole, and Orange counties collected signs from Democratic and Republican Party headquarters and from citizen drop-off sites. Candidates and their supporters were urged to bring their signs to a nearby site.

The collected signs were shipped to a recycling center for baling and then to PureCycle's Ironton, OH, facility for processing and purification.

PureCycle holds a global license for a patented, solvent-driven recycling technology, developed by Procter & Gamble, that converts PP waste into ultrapure PP resin. The purification process removes color, odor, and other impurities from PP waste, producing a recycled plastic that can be manufactured into new products and eventually be recycled again.

CIRCULAR ECONOMY/ BIO-PLASTICS/ RECYCLING

In Seminole County, the PureCycle sign-recycling program “is a first-of-its-kind recycling effort. ... Volusia and Orange counties previously sent the signs to an alternative recycling partner. This election cycle, they partnered with PureCycle after learning about our polypropylene recycling technology,” Bruey said.

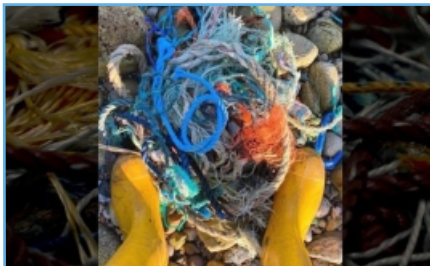
“The LWV initially reached out to PureCycle after they heard about our ability to turn polypropylene plastic into a sustainable resin that can be continuously repurposed and reused,” he added.

The election - sign recycling project is part of PureCycle's PureZero program, through which PureCycle collects PP from sports venues for processing, purification, and re-use in manufacturing. We previously reported on the Jacksonville Jaguars' participation in PureZero.

Meet the Man Turning Ocean - Bound Plastic Waste Into a Positive With Plant Pots

Voices of Galaxy spotlights people who use their passion, creativity and determination along with technology to make a positive impact on their own lives and their communities. In 2020, Ally Mitchell, a longtime commercial diver, was asked to join a salvage operation for a cargo ship that had been wrecked near his home in Scotland. When he began work on the wreck, he was faced with thousands of tons of material, comprised mostly of shredded plastic. In that moment, he was inspired to take on a new

mission: to make a difference in the world by tackling ocean-bound plastic.



For six months, Ally worked in his shed to bring to life a bold idea, one that sought to redefine a product that millions of people around the world use. With no manufacturing experience, he documented every step of the way on his Galaxy smartphone, and eventually, he had his breakthrough: recycled Ocean Plastic Pots.

Today, as his work continues to grow, Ally shares the positive impact of his pots through vibrant photos of the plastic he collects on beaches. Customers can see how the color of this plastic is the same as the color of the pots, which helps emphasize the circularity of the process and provides a tangible connection between the plastic Ally collects and the colorful pots he transforms it into. Ally also insists on sharing all the trial-and-error involved in his project by filming and uploading the different product development stages online, inspiring the next generation to continue the critical work of protecting the planet. It is also a reminder of just how creative this work can be.

Ally's story of how he used Galaxy technology to rethink the problem of plastic and work towards a better future for all.

Ineos Signs Agreement with Plastic Energy for its Largest Plant to Produce 100,000 Tonnes of Raw Materials from Plastic Waste



- The agreement follows a collaboration between both companies to explore the construction of a commercial scale plant which began in 2020.
- The recycled material has already been successfully converted into virgin-quality polymer through the INEOS cracker at Köln, Germany, and used by selected customers and brands.
- As well as reducing the risk of plastic pollution re-use of 'end of life' plastic will also help to reduce total emissions, supporting the transition to net zero.
- Rob Ingram, CEO INEOS Olefins & Polymers Europe said: “This is further evidence of our commitment to creating a more sustainable future for our industry and in particular developing a circular economy that keeps valuable materials in use and out of the environment.”

INEOS Olefins & Polymers Europe and Plastic Energy, have today announced a Memorandum of Understanding to produce 100,000 tonnes per annum of

recycled raw materials from plastic waste. This will be the largest use of Plastic Energy technology on the market. These new raw materials will enable a circular approach to produce essential plastic items that meet the requirements of demanding food contact and medical applications.

Production will be based in Köln, Germany. Plastic Energy's patented TAC™ recycling technology will turn difficult - to - recycle plastic waste otherwise destined for incineration or landfill, into a valuable raw material TACOIL™, a Plastic Energy product that can be used to create virgin-quality polymers.

INEOS will also invest in technology to process the TACOIL™ further before feeding it to their steam crackers, where it will replace traditional raw materials derived from oil. This use of advanced recycling enables plastic waste to be turned into new, virgin-quality materials that can be used in demanding applications where safety standards require the highest level of product purity and performance.

Revolution Debuts 10% PCR Hand - Stretch Film



Revolution introduces Encore Wrap, a high-performance hand stretch film made with 10% post-consumer recycled (PCR) resin.

The product has received certification from Scientific Certification Systems (SCS) Global Services, a leading third - party body for environmental practices, making Encore Wrap the only certified PCR stretch film on the market.

The new hand - stretch film contains Revolution's proprietary, third-party certified Encore PCR, which produces a higher quality of clarity and strength than traditionally observed in plastic stretch wrap film that contains PCR.

Revolution leverages more than 25 years' flexible film manufacturing and recycling experience to include the company's own Encore PCR resin into plastic stretch film. It delivers an effective, sustainable solution that can help the warehousing, transportation, and commercial industries reduce their environmental impact and achieve sustainability goals.

The Encore Wrap material imparts a light blue tint in roll form that is recognizable as Revolution's certified Encore PCR resin, yet it retains high clarity when applied to a pallet. Revolution's upgraded multilayered plastic stretch film is stiff cast with a quiet release and provides exceptional strength with resins designed to provide maximum load holding force and high puncture resistance. Customers can wrap more with less film because the strength allows for gauge reduction. In turn, these factors contribute to overall reduction in materials needed.

The company also collects stretch-film waste from distributor clients to support the production

of the high - quality PCR resin that's added into Encore Wrap, creating a circular approach to manufacturing and recycling plastic stretch film.

Revolution's vertically integrated business model effectively manages the lifecycle of plastic while maintaining the smallest possible carbon footprint.

“Revolution's goal to consistently improve our products while remaining true to our core commitment to sustainability has resulted in a game - changing upgrade to our plastic stretch film product line,” says Gregg Smith, VP of sustainable stretch.

Australia, Indonesia Show Innovations to Tackle Plastic Waste



Australia's National Science Agency or CSIRO holds Demo Day, exhibiting new innovations to tackle plastic waste, in Jimbaran of Bali, November 3, 2022. Demo Day is a part of the Road to G20 Summit in Bali.

The innovations ranging from plastic-free agricultural solutions to technology that transforms the livelihoods of Indonesian waste pickers are introduced by the Plastics Innovation Hub Indonesia, a partnership between Australia's CSIRO and Indonesia's Ministry of Education, Culture, Research, and Technology, as

well as Indonesia's National Plastics Action Partnership (NPAP).

Penny Williams PSM, Australian Ambassador to Indonesia, said the event is part of ongoing collaborative efforts to support innovations so as to solve environmental issues in the two countries.

Synova, Sabic, Technip Energies Join Forces to Accelerate Plastic Circularity

Synova, SABIC Global Technologies B.V., an affiliate of Saudi Basic Industries Corporation (SABIC), and Technip Energies (T.EN) have signed a Joint Development and Cooperation Agreement on November 23, 2022 to collaborate on the development and realization of a commercial plant, which will produce olefins and aromatics from plastic waste. The plant will use a combined technology developed by Synova and T.EN and will be integrated with one of SABIC's steam crackers. As such, the plant will contribute to SABIC's vision of closing the loop on used plastic.

The combined technology includes Synova's proprietary solids cracking technology (MILENA) in combination with its gas conditioning and tars removal technology (OLGA) for the conversion of plastic waste into product gas, which contains high value chemicals. The Synova technology is combined with T.EN's proprietary gas treatment technology (Pure.rGas™) to remove contaminants from the product gas and purify it to bring the

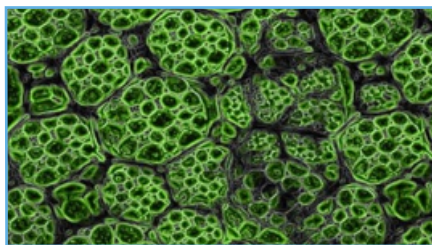
final products up to a specification compatible with processing in a steam cracker downstream of the cracker furnace. The combined technology efficiently converts plastic waste into high value chemicals, enabling an efficient plastic circularity route and significant reduction of greenhouse gas emission.

In support of Synova and the collaboration, SABIC's affiliate SABIC Ventures US Holdings LLC has become an investor in Synova.

Synova will use their investment to enhance the development of its technology and to strengthen its engineering capabilities.

EUBP Predicts Growth in Bioplastics Industry

After a stagnation of the overall plastics production in 2020, mainly due to challenges posed by the Covid-19 pandemic, there is now a new momentum for global bioplastics production. Capacity of production is set to increase significantly from around 2.23 million tonnes in 2022 to approximately 6.3 million tonnes in 2027.



Hasso von Pogrell, Managing Director of European Bioplastics (EUBP) said: "The positive development of bioplastics production capacity needs to be seen within the wider global context of a climate crisis, rising energy costs, and disrupted

value chains. Yet, despite these challenges, bioplastics production capacity is growing. Once again, this shows the resilience and importance of our industry.

The global bioplastics production capacity is set to increase significantly from around 2.23 million tonnes in 2022 to 6.3 million tonnes in 2027, according to EUBP.

Bioplastic alternatives exist for almost every conventional plastic material and corresponding application. Due to a strong development of polymers, such as PHA (Polyhydroxyalkanoates), polylactic acid (PLA), biobased PAs (polyamides) as well as a steady growth of biobased Polypropylene (PP), the production capacity will continue to increase significantly and diversify within the next 5 years.

EUBP data shows Packaging remains the largest field of application for bioplastics with 48 percent (1 million tonnes) of the total bioplastics market in 2022. The data also confirms that bioplastic materials are already being used in many other sectors, and the portfolio of applications continues to diversify. EUBP forecast areas, such as automotive and transport, agriculture and horticulture as well as electrics and electronics continue to increase moderately in their relative share over the next years.

With a view to regional capacity development, Asia remains in its position as major production hub with slightly over 40 percent of bioplastics currently being produced in that region, according to the EUBP. Presently, a fourth of the production capacity is still

located in Europe. However, Europe's share and the share of other world regions is expected to significantly decrease within the next five years. In contrast, EUBP claim Asia is predicted to have passed the 60 percent by 2027. Van Pogrell added: "We will see an impressive increase in bioplastics production over the next years. However, the big question is, does Europe still want to play a significant role in the world league of bioplastics or does it give up its leadership in the field of innovative sustainable materials? Investment into infrastructure as well as research requires the right political and economic framework conditions. Therefore, the European policymakers should make use of the many initiatives related to the European Green Deal to clearly acknowledge and promote biobased and compostable plastics."

The land used to grow the renewable feedstock for the production of bioplastics is estimated to be 0.8 million hectares in 2022 and continues to account for only just over 0.01 percent of the global agricultural area of 5 billion hectares. Along the estimated growth of global bioplastics production in the next five years, the land use share for bioplastics will increase to still below 0.06 percent. Van Pogrell continued: "In relation to the available agricultural area, this share is still minimal. Thus, there is no competition between the renewable feedstock for food and feed and the production of bioplastics, Over 90 percent of the global agricultural area is used for pasture, feed, and food. This is also of crucial importance in the political debate regarding land used for biobased industries".

PepsiCo to Double Reusable Packaging by 2030

PepsiCo has announced a global packaging goal intended to double the percentage of all beverage servings it sells delivered through reusable models from 10 to 20 percent by 2030.



Reuse is also a lever to meet PepsiCo's goals to reduce virgin plastic per serving by 50% by 2030 and to become Net Zero by 2040.

Aligned with the Ellen MacArthur Foundation's Reuse – Rethinking Packaging framework, PepsiCo will pursue four approaches to achieve its new packaging goal, including expanding its SodaStream business, both at home and in workplaces through SodaStream Professional; building out its refillable plastic (PET) and glass bottle offerings in partnership with PepsiCo bottlers; growing its fountain drinks business with reusable cups; and accelerating growth in powders and concentrates.

PepsiCo will continue working with multiple partners to develop new infrastructure to support reuse and refill models.

Clothing Reseller Finds Recycling Pathway

A partnership between ThredUP and Azek will recycle clothing bags to composite deck products.

Azek, the manufacturer of TimberTech decking, announced a new partnership with ThredUP, an online platform for reselling clothing. The project will transform plastic waste into outdoor living products.

ThredUP supplies its users with "clean out bags" that they fill with gently used women's and kids' apparel, shoes, and accessories. ThredUP then sorts, markets, and sells the clothing to new users.

Users of ThredUP's consignment shop fill bags with gently used items.

Through this recycling partnership, Azek will collect ThredUP's PE plastic clean out bags after the contents have been processed by ThredUP, as well as ThredUP's post-industrial plastic film waste, and transport them to Azek's polyethylene recycling facility in Wilmington, Ohio. The materials will be processed and incorporated into new TimberTech decking, Azek's composite decking line made from approximately 85% recycled material.

Azek has set a goal of processing one billion lb/yr waste by 2026, and reports having processed a total 1.7 billion since 2019. ThredUP reports its fashion consignment program has processed 137 million individual items since its founding in 2009.

Covestro Collaboration with SABIC Unlocks Improved Recyclability for Mono - Material Flexible Plastic Pouches

Covestro has developed a proof-of-concept heat-resistant coating for use on mono-PE stand-up pouches

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made with SABIC® BOPE polymer. The coating facilitates the industrial - scale production of BOPE - based mono - material stand - up pouches on horizontal form-fill-seal (HFFS) lines. This innovation paves the way for simple single-stream recyclability of flexible plastic pouches, marking an important step on the way to achieving a circular economy for packaging. Covestro and SABIC will continue their collaboration to further improve and eventually commercialize this product and bring its benefits to brand owners and consumers.



Covestro has developed a heat-resistant coating for monomaterial stand-up pouches that enables easier single-stream recycling of these packages. The coating was developed for stand-up pouches made of biaxially oriented polyethylene (SABIC® BOPE). Source: Sabic

Traditional flexible plastic packaging uses multi-material laminates, which are difficult to recycle as it is expensive and time-consuming to separate the different polymer layers. Driven by concern around packaging waste from consumers, governments, and industry, packaged goods

brands are looking for more circular solutions. One increasingly popular option is mono-material packaging, made with materials such as BOPE.

BOPE can be used to make flexible packaging in which all the layers are manufactured from PE polymer grades. This packaging can then be recycled in a single stream. However, BOPE-based mono-material stand-up pouches are difficult to manufacture at scale on FFS lines due to their low heat resistance compared with current PET - or PA - containing laminates. To solve this problem, Covestro engineered a heat-resistant coating for mono - PE BOPE-based stand-up pouches. This increases the pouches' heat resistance so they can be manufactured on high-speed FFS production lines while maintaining high visual and performance qualities. Thanks to Covestro's new coating, SABIC's BOPE polymer can be a viable alternative to replace PA and PET containing multi - material laminates for flexible plastic packaging.

Trusscore Announces Agreement with Return Polymers on Recycled Vinyl

Building materials company Trusscore announced a recycling partnership with Return Polymers, Inc., a recycled PVC company. Return Polymers' Full - Circle recycling program will collect, grind, and recycle Trusscor PVC material, helping ensure that as much waste and scrap as possible is recycled and used to make new PVC products.



Recycling partnership will aim to return PVC scrap to supply chain.

Return Polymers has recycling facilities in Michigan and Ohio. Through its Full-Circle recycling program, Return Polymers delivers totes or bins to a central collection point, and then builders drop off PVC end-cuts or other waste PVC material into the bin. Return Polymers collects the bins and then sorts and processes the contents, which are then incorporated into new building products such as decking, siding, and trim. The company processes more than 100 million pounds/yr of PVC.

Trusscore makes several PVC-based products, including wall and ceiling Board, a replacement for painted drywall.

New York Gets its First Plastic Roads via UK's MacRebur

Plastic waste doesn't have to be wasted. You can drive on it instead.

MacRebur, aka The Plastic Road Company, says Staten Island is now home to the first public roads in New York created using waste plastic. The British company MacRebur partnered with the New York City Department of Transportation on the project.



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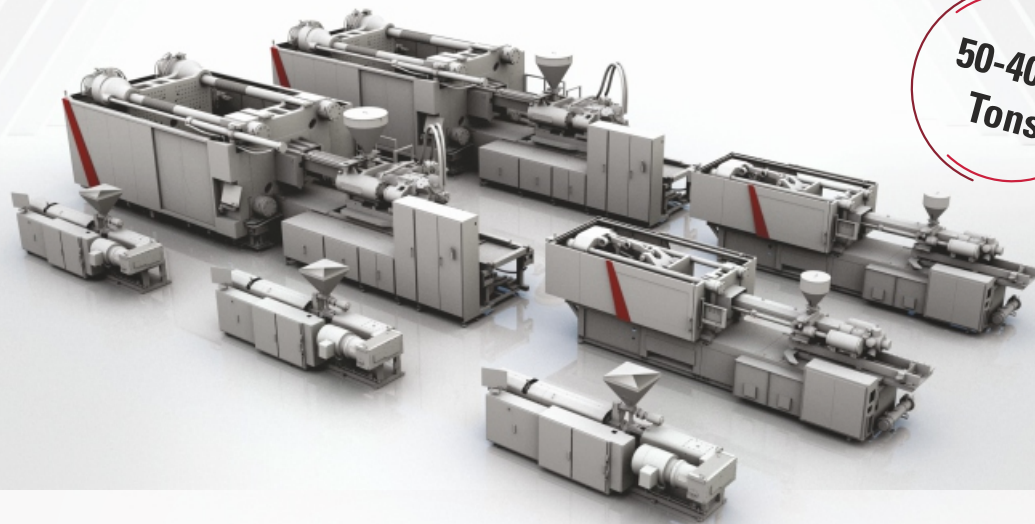
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