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THE ECONOMIC TIMES

POLYMERS

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ALL GLITZ AND GLAM: DOING THE 'DRASTIC' FOR PLASTICS

The Economic Times hosted its annual ET Polymer Awards on March 25, 2022. Excerpts from the event.

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A look into how India is annexing the opportunity of becoming China's +1

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EDITOR'S NOTE

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O Womeniya!

We come from a nation of strong women, women who have ruled, fought, nurtured and protected our traditions, values, culture and each one of us in the process. That said, women make up approximately 22 per cent of India's workforce – an underutilised resource in the country!

Remember, Barb Wire snarled "Don't call me babe," of yore? Well, notwithstanding the 'car babes' at the auto expos, women have come a long way up the manufacturing ladder in automotive and beyond. Still, women in manufacturing are seen as oddities – out of place in what is considered a man's job. This trend is not only seen in India but also around the world. Most women would not consider a career in manufacturing and would rather opt for careers in IT, finance, HR and so on.

Equality is the first thing that comes to mind when it comes to women at the workplace, so that was the obvious opening question: Do workplaces of today provide equal opportunity in the true sense gender-wise? Most workplaces do not – however, as manufacturers wake up to the advantages of diversity in promoting creative output, Indian women are making more of an impact. Women are no longer a rarity in the automotive and ancillary manufacturing industries, be it the shop floor or that corner office. There's no doubting the evolving mindset on the congruity of women amid machinery.

Over the last few years, many Indian companies have realised the significance of women in the manufacturing field as well and are taking initiatives to motivate and encourage women to take up a career in this line. For instance, some companies organise industrial visits for schools and colleges to provide more information and to explore a wider view of the industry. It is encouraging to know that a company that makes auto electronic parts has all women employees on the floor.

In January, last year, Daimler India Commercial Vehicles onboarded 46 female employees—a first for the factory—as part of its DiveIN (which stands for "diversity and inclusive") initiative. In February, Schwing Stetter hired women to work on the shop floor for the first time in its new factory in Cheyyar, Tamil Nadu. Women make up around 15 per cent of the 120 factory employees hired so far this year and are involved in making huge machines used for construction, such as concrete mixers.

Perhaps, the most inspiring of these stories is the all-women plant set up by Kirloskar in Tamil Nadu. This Kirloskar pump manufacturing facility is located in Coimbatore and all the manufacturing is done by women over here.

To sum up, we still have a long way to go before we find many more women jumping onto the manufacturing bandwagon. However, these women in manufacturing have proved to us that this is a field worth exploring and that once you start – the sky's the limit.

Happy Reading!

Editor

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Covestro Launches Climate-Neutral MDI

Covestro is consistently pursuing its path to a circular economy and is now offering customers a climate-neutral MDI (methylene diphenyl diisocyanate). It's climate-neutral from the cradle to the factory gate of Covestro, thanks to the use of alternative raw materials – based on plant waste – that are allocated to the products with the help of certified mass balancing according to ISCC PLUS. The new MDI grades can be used in numerous construction, cold chain and automotive sectors.

According to a common calculation model1, on balance, no CO2 emissions are generated in the aforementioned part of the value-added cycle. The climate-neutral MDI and its precursors are manufactured at the ISCC PLUS-certified Covestro sites in Krefeld-Uerdingen, Antwerp and Shanghai.

"With the launch of our climate-neutral MDI, we are now further expanding our portfolio of climate-neutral products," said Sucheta Govil, Chief Commercial Officer, Covestro. "I am pleased that this will enable us to even better support our customers in large parts of the world in meeting their own sustainability goals and transitioning to a circular economy." Only last December, the company announced the launch of its climate neutral polycarbonate.

Hermann-Josef Dörholt, Global Head of the Performance Materials Business Entity, added, "Climate-neutral products are an important factor in achieving our sustainability goals. Our climate neutral MDI has another major advantage: it is a drop-in solution – so our customers can use it immediately in their production without any changeover and without compromising on quality."

This is the case, for example, in building insulation. MDI is an indispensable raw material for producing polyurethane (PU) insulation boards and sandwich panels, among other products. These have proven their value for many years as highly efficient elements in the thermal insulation of buildings. The heating or cooling requirements of buildings can be reduced by up to 70 per cent through PU insulation. This saves CO2 emissions and is good for residents' wallets. Because PU insulation elements can therefore be designed thinner to achieve good insulation performance already, they save resources and make more usable space accessible than other insulation materials.

In addition to the good thermal insulation properties of PU insulating materials, Covestro's climate-neutral MDI now provides a further sustainability benefit: By practically avoiding emissions during its production, it even helps to reduce embodied carbon over the life cycle of a building. The use of PU insulating materials made from it in new buildings and the renovation of older real estate can thus make an essential contribution to the responsible use of primary resources and significantly reduce CO2 emissions.

Rehau Forays Into The Modular Kitchen Segment With Rehau Kitchen

Rehau, a global leader in polymer-based solutions, has launched its maiden kitchen category, Rehau Kitchen in Richmond Road, Bengaluru. A component manufacturer and supplier brand, Rehau is now becoming a solution provider with the launch of its kitchen category.

The Rehau Kitchens are assembled in India and are thoughtfully curated for the Indian market. The modular kitchen has the company's European quality edge banded panels; the hardware and accessories used are also of international quality, promising strength, resistance and durability. Every kitchen uses the brand's newly launched RAUVISIO quartz stone as kitchen slabs that are considerably more hygienic and easier to clean due to its polished surface and fibre-free material, giving a feel of natural stone. The roller shutters used in a Rehau kitchen are imported from its German plant for storage solutions, and the Plinth cover used in the modular kitchen set-ups are manufactured at its India factory.

The experiential store in Bengaluru is spread across a 2000+ sq. ft. area and consists of three kitchen units for display. The brand offers 100+ surface finishes and colours for consumers to customise their kitchen without limiting their imagination and creativity. The brand provides an end-to-end solution to its customers starting from recce to installation with a shorter delivery time and quick after-sale service.

Bhavana Bindra, Managing Director, Rehau South Asia, said,

"Rehau has been excelling in the Indian market for last 25 years, and for more than two decades, Bengaluru has been a core market for the brand. Also, the south market has always been a trendsetter in modern and futuristic furniture, as witnessed by all major furniture brands in this part of the country. Inevitably, Bengaluru became our first choice to launch the brand's maiden kitchen category. It is a proud moment for us at REHAU as we foray into the B2C segment with the launch of REHAU kitchen."

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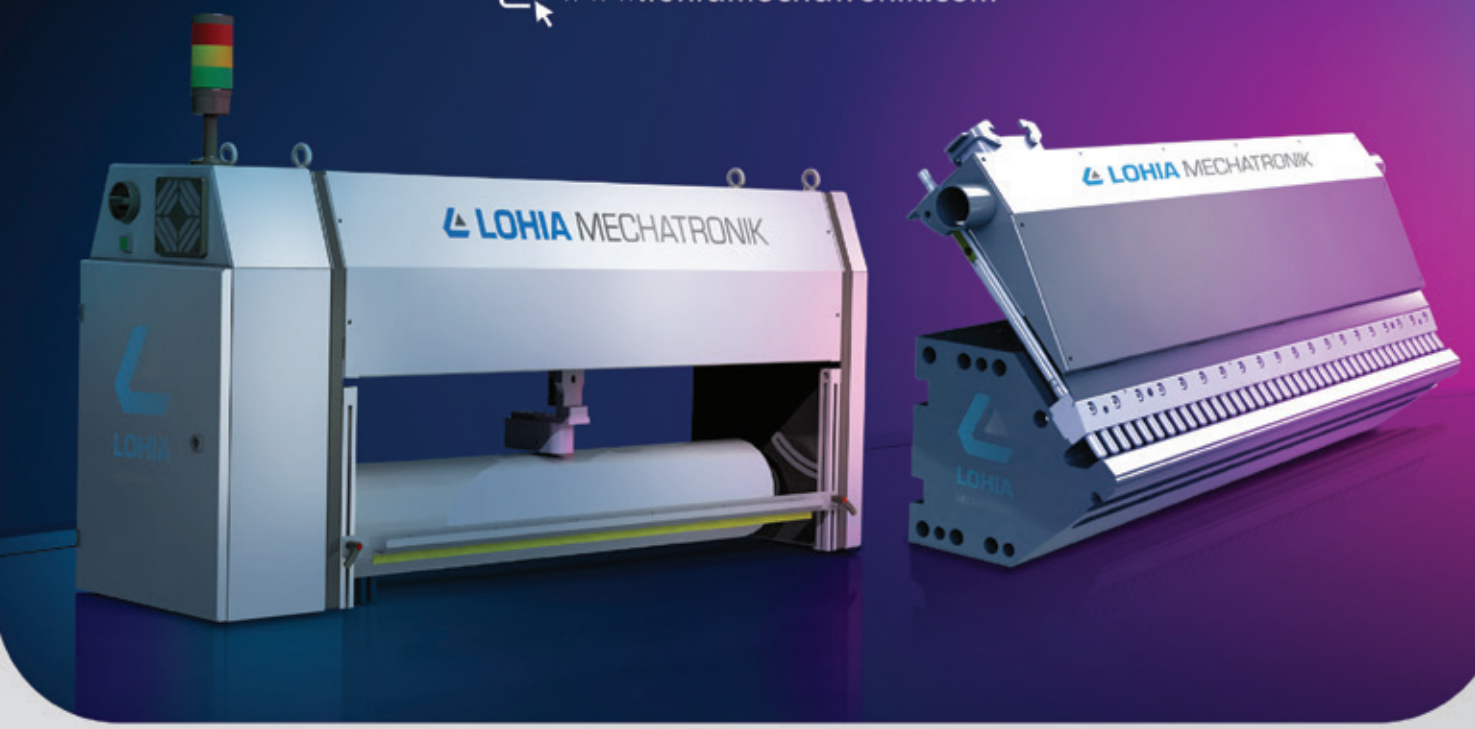

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Recycled Plastics Packaging Needs Major Overhaul To Gain Food Industry's Confidence: Top Polymer Scientist

Taking a step towards plastic waste management and increasing the use of recycled plastic packaging, the Ministry of Environment, Forests, and Climate Change (MOEFCC) introduced the Plastic Waste Management (Second Amendment) Rules 2021 in August last year. It allowed recycled plastic to store, carry, dispense, or pack ready-to-eat or drinks items.

While the amendments emphasise the importance of adhering to appropriate standards and regulations under the Food Safety and Standards Act, 2006, a leading polymer scientist says that the existing regulation and framework for defining plastics and managing plastic waste require a major overhaul to gain the food industry's confidence.

"The problem of littering is becoming insurmountable. So, the government had to intervene. But suddenly jumping from 'shall' to 'can' without underlying infrastructure, safeguards, and appropriate regulatory mechanism is difficult to understand," said Dr Vijay G Habbu, a senior polymer scientist and an adjunct professor at the Mumbai-based Institute of Chemical Technology. Until 2016, carry-bags or products made of recycled plastic were not allowed for storing, carrying, dispensing or packaging ready to eat or drink food items. Later, recycled plastic or newspaper for food packaging was also added to the ban list by the food regulatory body Food Safety and Standards Authority of India (FSSAI).

However, taking a complete u-turn under the second amendment, the government permitted the use of recycled plastics for food packing and granted a 10-year moratorium to large companies on single-use plastic products. Additionally, it set a target of 30% recycled plastic packaging by 2023 and a mandatory 60% recycled content in plastics by 2026. The government justified the measure by citing the tremendous harm that littered plastic does on land and aquatic ecosystems.

Currently, India recycles about 60 per cent of its plastic waste. Most of this is done by the informal workforce, which predominantly relies on unscientific methods to produce plastic pellets, raising concerns, especially around the contamination and purity of recycled plastic.

"Regulation and frameworks in defining plastics and managing plastic waste management is the need of the hour. Banning plastics is not the solution as it is impossible to get rid of them and find an alternative. We should encourage people to reuse plastic as much as possible. But when you give into a regulation, you cannot say that it is only applicable to specific brands utilising the best available human resources, tools, and technology to manage the recycling process. Unfortunately, this is not the case for a sizable portion of the existing recycling ecosystem. So, once you make it open, then you're opening a floodgate of impurities having serious repercussions on food safety," Dr Habbu said.

On the government's decision to make it mandatory to use 60% of recycled plastics by 2026, Dr Habbu said it seems to be more a case of enthusiasm than pragmatism. "The European Union is the most advanced country regarding food safety. They are permitting only 30% recycled plastic by 2030," he explained, adding that rather than hurrying, we should learn from global experiences and take a sustainable and scientific approach to plastic management.

On the issue of plastic pollution and mismanagement endangering the environment's ecology, Dr Habbu stated: "The problem of plastics is not just in its usage but what we do with it. Plastic as the material becomes a villain as it is littered in a manner which leads to improper waste management that eventually leads to pollution but targeting one set of viable options is not the solution."

"Everything we use today is made of plastics – water bottles, eyewear, containers, and pens. We refer to it as plastic as a single homogeneous material, but this is not the case; it is a complex family of products. Many types of plastics are used to design and form different things depending on their usage and chemical molecular structure," he said.

"We need a grid of utility vs litterability systems that is adequately mapped for all plastics so that the government can determine which has the lowest utility. Each type of plastic is recycled uniquely. One recycling treatment does not work for all. We require a formal ecosystem governed by the appropriate sets of regulations and frameworks when it comes to recycled plastic. This will not only increase transparency but also foster trust among the public and industry," he explained.

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DOMO Chemicals Expands Access Of Technyl To Customers Worldwide

DOMO Chemicals, the leading supplier in the European polyamide industry, has made its Technyl branded products available to customers globally. After acquiring Solvay's European Performance Polyamides business in 2020, DOMO is now exclusively producing and commercialising Technyl®, providing the worldwide market with the brand's 70 years of experience. Since 1953, Technyl® has offered the full range of polyamide 66 / polyamide 6 based solutions, widely used in diversified applications.

"We deeply believe in the future of the Technyl brand and crossing this important milestone will help us to keep growing with our global customers with particular focus on the automotive, E&E and industrial and consumer goods market segments," commented Ludovic Tonnerre, Chief Commercial Officer - International Markets, DOMO.

Indeed, critical applications served by Technyl include high thermal and chemical resistance materials, light engineering solutions

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Furthermore, in the e-mobility space, besides the new ORANGE shaded flame retardant Technyl®, a specially designed product for high-voltage components and cabling. DOMO offers a complete set of materials to offer mechanical, hydrolysis, flame retardancy and impact performances to various battery components.

On top of this, the Technyl® 4Earth range provides a competitive and sustainable polyamide alternative. Lifecycle assessments show that the carbon footprint of these products is reduced by a quarter. At the same time, consumption of non-renewable resources is halved, and more than two-thirds reduce water use compared to traditional compounds.

Tonnerre added, "This is a significant step on our path to strengthen DOMO Chemicals' nylon-based engineering materials business." The introduction of Technyl® globally will be a door opener for DOMO as a global player supporting our customers worldwide. The new range of solutions addresses key megatrends such as e-mobility and sustainability in terms of low GWP and circularity across all industries.

DOMO's Service Hub will fully support all customers. This unique platform offers a complete portfolio of services for customers to pick and choose from, whether it's the material selection, part testing, or several services in between.

Dabur Becomes First Indian 'Plastic Waste Neutral' FMCG Company

Dabur India has become a 100% 'Plastic Waste Neutral' company in India, having collected, processed and recycled around 27,000 MT of post-consumer plastic waste from all over India in the 2021-22 financial year.

Dabur has become the first Indian consumer goods company to achieve this landmark. Today, the science-based Ayurveda major collects, processes and recycles the same amount of plastic waste that Dabur sells in its product packaging in a year, becoming a 'Plastic Waste Neutral' enterprise.

"It is a matter of great pride for the entire Dabur family, who have worked towards not just collecting plastic waste from our cities, towns and villages, but also preventing the waste from reaching our landfills and oceans. This includes all types of plastic waste, from PET and HDPE bottles, PP caps and labels to multi-layered plastics and beverage cartons. As a responsible corporate citizen, Dabur has always been recognised for its commitment to sustainability and ecological responsibility. We have made significant progress in our environment, social and governance (ESG) journey and have now become the first Indian FMCG Company to become Plastic Waste Neutral in India," said Dabur India's Executive Director – Operations, Shahrukh A Khan.

Dabur had set itself the target of collecting, processing and recycling over 22,000MT of post-consumer plastic waste from across India in the year 2021-22. "We surpassed that target three months ahead of schedule and have enhanced our full-year target to 26,956 MT. We have taken progressive actions to reduce plastic waste in cities, towns, and villages while raising awareness about the community's plastic waste management. We work with government-registered recycling partners across the country. The collected plastic waste is being sent to different Recyclers, Waste-to-Energy Plants and Cement Kilns," Khan added.

Moving forward on its mission to protect the environment and roll out special initiatives for ecologically sensitive areas, Dabur announced the launch of a new 'Save the Environment' campaign in Himachal Pradesh to create awareness within communities on managing plastic waste within their household. The company will distribute cotton carry bags to replace the plastic bags currently being used in homes, Dabur India's Corporate Head-Environment, Health & Safety, Tusar Pattnaik, said.

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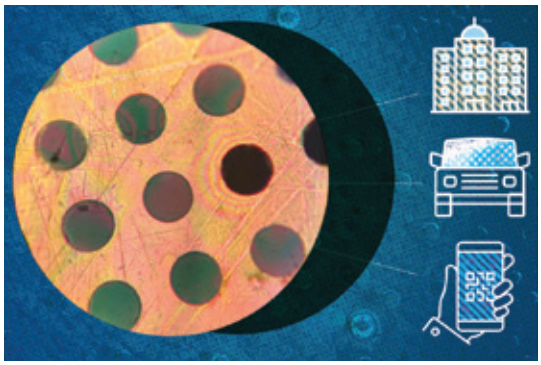
MIT Discovers New Lightweight Material That Is Stronger Than Steel

The new substance is the result of a feat thought to be impossible: polymerising a material in two dimensions



Using a novel polymerisation process, MIT chemical engineers have created a new material that is stronger than steel and as light as plastic and can be easily manufactured in large quantities. The new material is a two-dimensional polymer that self-assembles into sheets, unlike all polymers, forming one-dimensional, spaghetti-like chains. Scientists believed it was impossible to induce polymers to form 2D sheets until now.

This material could be used as a lightweight, durable coating for car parts, cell phones or as a building material for bridges or other structures, says Michael Strano, the Carbon P. Dubbs Professor of Chemical Engineering at MIT and the senior author of the new study. "We don't usually think of plastics as being something that you could use to support a building, but with this material, you can enable new things," he said. "It has very unusual properties, and we're very excited about that."

The researchers have filed for two patents on the process they used to generate the material with MIT postdoc Yuwen Zeng is, the lead author of the study.

Two dimensions

Polymers, including all plastics, consist of chains of building blocks called monomers. These chains grow by adding new molecules onto their ends. Once formed, polymers can be shaped into three-dimensional objects, such as water bottles, using injection moulding.

Polymer scientists have long hypothesised that if polymers could be induced to grow into a two-dimensional sheet, they should form extremely strong, lightweight materials. However, many decades of work in this field led to the conclusion that it was impossible to create such sheets. One reason for this was that if just one monomer rotates up or down, out of the plane of the growing sheet, the material will begin expanding in three dimensions, and the sheet-like structure will be lost.

However, in the new study, Strano and his colleagues came up with a new polymerisation process to generate a two-dimensional sheet called a polyaramide. The monomer building blocks use a compound called melamine, which contains a ring of carbon and nitrogen atoms. Under the right conditions, these monomers can grow in two dimensions, forming disks. These disks stack on top of each other, held together by hydrogen bonds between the layers, making the structure very stable and strong.

"Instead of making a spaghetti-like molecule, we can make a sheet-like molecular plane, where we get molecules to hook themselves together in two dimensions," Strano said. "This mechanism happens spontaneously in solution, and after we synthesise the material, we can easily spin-coat thin films that are extraordinarily strong."

Because the material self-assembles in solution, it can be made in large quantities by simply increasing the quantity of the starting materials. The researchers showed that they could coat surfaces with films of the material, which they call 2DPA-1.

"With this advance, we have planar molecules that are going to be much easier to fashion into a solid but extremely thin material," Strano says.

Light but strong

The researchers found that the new material's elastic modulus — a measure of how much force it takes to deform a material — is between four and six times greater than that of bulletproof glass. They also found that its yield strength, or how much force it takes to break the material, is twice that of steel, even though the material has only about one-sixth the density of steel.

Matthew Tirrell, dean of the Pritzker School of Molecular Engineering at the University of Chicago, says that the new technique "embodies some very creative chemistry to make these bonded 2D polymers."

"An important aspect of these new polymers is that they are readily processable in solution, which will facilitate numerous new applications where a high strength to weight ratio is important, such as new composite or diffusion barrier materials," said Tirrell, who was not involved in the study.

Another key feature of 2DPA-1 is that it is impermeable to gases. While other polymers are made from coiled chains with gaps that allow gases to seep through, the new material is made from monomers that lock together like LEGOs, and molecules cannot get between them.

"This could allow us to create ultrathin coatings that can completely prevent water or gases from getting through," Strano said and added, "This kind of barrier coating could be used to protect metal in cars and other vehicles, or steel structures."

Strano and his students are now studying how this particular polymer can form 2D sheets in more detail. They are experimenting with changing its molecular makeup to create other novel materials. The research was funded by the Center for Enhanced Nanofluidic Transport (CENT), an Energy Frontier Research Center sponsored by the US Department of Energy Office of Science and the Army Research Laboratory.

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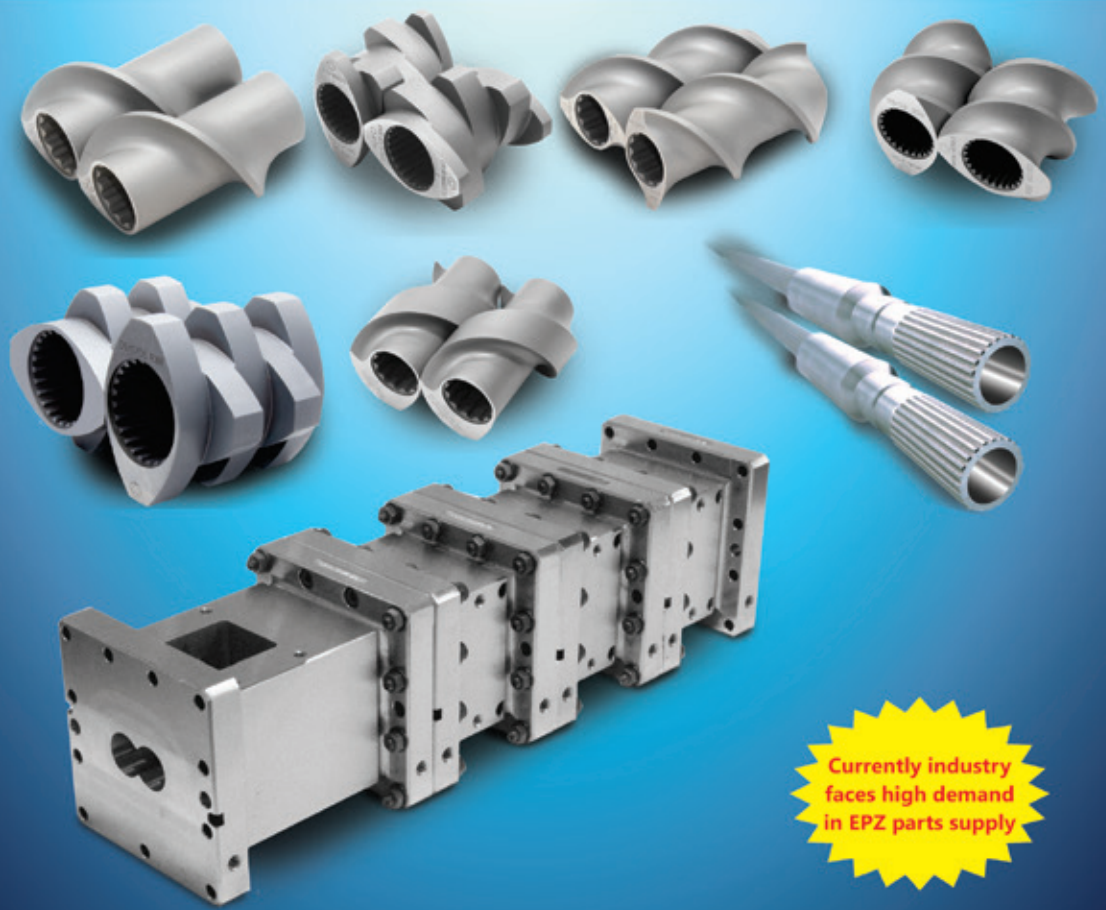

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"India Is Increasingly Winning The China+1 Opportunity"

According to Vikas Gupta, Managing Director (Operations), PG Electroplast Ltd, this is due to a variety of factors, but two of the most important are a large untapped domestic market, and a clear government focus on Make in India. Edited excerpts:

By Rahul Kamat

What is your outlook on the consumer durables and plastic products sector?

We are quite positive about the outlook of consumer durables and electronics in India. The penetration for ACs is around five per cent, washing machine is 13 per cent and refrigerators is 33 per cent. As the access to and reliability of utilities like electricity and tap water increases in Tier 3 cities and rural areas, we will see new markets opening up for ACs and WMs. The distribution and service networks for consumer durables are also improving for these products. They are also becoming increasingly affordable due to rising incomes and lower product operating costs, and we expect even faster adoption due to the growth of e-commerce platforms and rising access to easy financing options.

Domestic demand for ACs is growing at around 15 per cent annually. A tropical climate, large population and rising aspirations of millions of households are all factors driving demand for ACs in India. Therefore, in anticipation of the expected rise in demand, the country remains a crucial market for the AC industry and global players. Rapid urbanisation and a growing population have created a demand for sustainable, clean and energy-efficient cooling solutions in India. The Government of India's focus to Make In India and for an Atmanirbhar Bharat is clear and supports the industry through various measures like the PLI schemes, reversing the inverted

duty structure created by previous administrations, and placing tariff and non-tariff barriers to imports are helping level the playing field for indigenous manufacturers and will help players like us to become globally competitive.

Increasing globalisation will play an important role in driving the demand for washing machines ahead. We foresee that the demand will only accelerate due to a combination of factors. There is ever-increasing female labour-force participation, which has led to decreases in time spent doing laundry. Middle-class population is growing with nuclear families also becoming more common, which is expected to further increase market penetration of washing machines. Media participation is also increasing. The fully automatic options are also becoming more affordable, which should also help grow the market size in value terms as it provides the semi-automatic machine users with an impetus to upgrade.

Governments world over are urging consumers to use energy-efficient products. Easy tools for comparing power consumption, like the BEE star ratings and on e-commerce platforms, are also leading to consumers opting for more energy-efficient technologies. The growing scarcity of water across the globe is compelling manufacturers to make products with technologies that restrict the use of water.

The short term outlook is that the increased localisation will boost domestic manufacturing and reduce import dependency. India will become an attractive destination for

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global giants which will help bridge the disability gap India has with its competitors. In the medium term, we see high domestic value addition, higher penetration across product categories, and India becoming an export hub making for the world.

How do you think will the PLI scheme help in supporting the Make in India initiative of the Indian Government? How are you gearing up to meet PLI criteria?

India's electronics manufacturing sector is currently not at par with the competing globally, as it faces a 'disability' of around 8-11 per cent due to gaps in the nation's infrastructure, logistics framework and domestic supply chain, high finance costs, insufficient training in required skills and lack of focus on R&D.

The Production Linked Incentive (PLI) scheme for white goods introduced by the government is providing significant financial incentives to boost domestic manufacturing and attract large investments in the white goods manufacturing value chain. The scheme has the potential to boost the domestic manufacturing of electronics in India and make the country globally competitive. The scheme entails an incentive of 4-6 per cent on incremental sales of goods manufactured (over the base year) under target segments, to eligible companies, for five years after the base year. In an industry with razor-thin margins, this scheme is a clear gamechanger.

The creation of a components ecosystem is a journey, but with the PLI scheme, its process will be fast-tracked substantially. I am sure that in the next three to four years, we will have a large component ecosystem in the country for the manufacturing of finished goods, where the import intensity is relatively higher today. The scheme is also incentivising R&D and the development of core competencies and capabilities, which will help the industry become sustainable and globally competitive in the long term.

PG Electroplast's wholly-owned subsidiary, PG Technoplast has already received approval under the PLI Scheme for White Goods. We are currently concluding the first phase of the capital expenditure mandated under the scheme, and hopefully be able to contribute to growing the components ecosystem in the nation. We are also investing in our design and R&D capabilities to ensure that the progress we make is sustainable and that we can compete with global players going forwards. We believe PG will be a meaningful player in the industry going forwards and that it can help fulfil the goals defined in the scheme.

"WE ARE CURRENTLY CONCLUDING THE FIRST PHASE OF THE CAPITAL EXPENDITURE MANDATED UNDER THE PLI SCHEME"

As I can see the company's revenues for 9M2022 stand at Rs 5995 million vs Rs 4213 million in last year – a growth of 42.3 per cent, EBITDA stands at Rs 403 million versus Rs 271 million- a growth of 48.5 per cent and Net profit stood at Rs 98 million versus Rs 12 million last year- a growth of 716.7 per cent. What is the reason? Do you think that the momentum will be maintained?

FY21's first half, Q1 particularly, was badly impacted due to the devastating Delta variant, which caused lockdowns. This year, the impact of COVID-19 was much less severe, and our product business has also picked up well. It contributed 43 per cent of the total revenues this quarter and 37 per cent for 9M2022. The product business has grown 101 per cent YoY for the quarter and 9M2022 growth is 117 per cent. The washing machines business for the quarter had a growth of 100 per cent YoY and for 9M2022 it grew 99 per cent, while the AC product business grew 135 per cent for the quarter and 166 per cent for 9MFY2022.

We are seeing significant enquiries for new business across business segments and our acquisition of new client businesses is picking up. Our capex plans, along with new product development, are progressing at full throttle and we remain confident of production and sales in the coming quarter and FY2023.

What kind of order book do you have and what is an outlook on orderbook in FY23?

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the company is on track to scale the product business significantly this year and in the next financial year. We are witnessing significant enquiries from our existing and new customers across all our different business segments and the acquisition of new clients is picking up.

The order book for ACs for the first half of FY23 is closed, and the industry has big expectations for growth given the market contraction for ACs for the past two years due to COVID-19 led lockdowns. In the medium term, we believe the PLI scheme is going to be a significant business enabler for our company in the AC segment, as we believe we are the best-positioned company to capitalise on this growth opportunity and capture a sizable market share for AC manufacturing in times to come.

The capacity is created by the company for washing machines in Roorkee, Uttarakhand and AC components in Greater Noida, Uttar Pradesh, by our wholly-owned subsidiary PG Technoplast has come online and is being well utilised. PG has also re-entered the TV manufacturing business in Q3 and has already begun production for two customers. The company's Capex plans for this year are completed, and our new Supa unit has started commercial production very recently.

We have acquired a very large client for washing machines this month and are in the final stages of tying up businesses of a few others. We expect the production for the new businesses to come online by Q2FY23. We have grown our WM business 100 per cent in FY22, and we expect to grow 50 per cent over the new base in FY23.

The company's plastic molding and other businesses are also functioning as expected and are growing at a rate of around 10 to 15 per cent. The order book looks very strong and we expect a good scale-up in Q4 and FY23 across all our product verticals.

The company had plans to raise funds through preferential issues. Where do we stand now on the same and how will be the funds mobilised?

The shareholders of the company, in an Extra-Ordinary General Meeting (EGM) of the PGEL held in June last year, approved an incoming investment of Rs 76.6 crore in the company. The members approved the issue of equity shares and Compulsorily Convertible Debentures to Baring Private Equity India AIF, the Taparia family backed Ananta Capital, members of the Patni Family and some individual investors.

The funds raised were used to strengthen our balance sheet and give us growth capital which we used to fund our Capex in FY22. The planned Capex for FY22 is over Rs 125 crore, and has been towards building, plant & machinery and product development activities. The company is completing a world-class integrated facility for AC manufacturing in Ahmednagar and has expanded capacities in Noida for AC parts and Air Cooler businesses. It is going to invest in its research and development divisions to be able to offer the best ODM solutions for its customers and to improve its value addition.

What was the turnover in the last fiscal year? What are your growth levers?

Our revenues in FY21 were Rs 705.83 crore, with an EBITDA of Rs 52.39 crore and a profit of Rs 11.62 crore. PG believes the majority of its growth will be coming from its products business. Our industry is also seeing the share of manufacturing through ODMs like us increase, where companies are outsourcing their entire end-to-end production cycle to us. It is a significant leap for Indian contract manufacturers, as large electronics enterprises have started believing in the skills of Indian ODMs and their capabilities.

Going ahead, we see the share of ODMs in contract manufacturing set to increase further, as that will provide contract manufacturers higher margins and profitability, with good growth coming from products like Air Conditioners and washing machines. We also are seeing trends that the online and modern trade companies (and their respective brands) are increasing their share in India; these companies will continue to focus on branding, distribution, and selling. For manufacturing, they will depend on outsourcing partners like PG. We have tied up with customers from these categories and we expect to grow with them too.

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Leading The Way In Environmental Protection And Conservation

Plastic has had a harmful effect on the environment for the longest time. The piece explains how igus has worked on building products with least environmental side effects and its sustainable corporate activities.

World over, plastic has always been in the eye of the storm for the hazard it poses to the environment. Much has been discussed and written about the harmful effects of plastic on the environment. In simple terms, plastic pollution accumulates plastic objects and particles in the earth's environment that adversely affects wildlife, wildlife habitat, humans, and the environment overall.

Debunking popular connotations that plastic is the biggest environmental hazard, a global leader in motion plastics, Igus GmbH entered the business of manufacturing motion (movable) parts in a machine using high-quality plastic, traditionally manufactured using various materials types of metal. When igus was founded in 1964, environmental hazard was unheard of. Even then, igus took it upon itself to make its products with the least environmental impact and recyclable. Since then, the company has focused on its sustainable corporate activities. Igus has undertaken various initiatives like plastic recycling, energy chains recycling, tree plantation, etc.

Talking about igus's recycling program, Deepak Paul, Managing Director, igus India, says, "Our polymers do not require lubrication and are optimised for wear. They do not rust and do not get dirty from grease and dirt, doing away with the need for replacement frequently. Together with the lower weight, this ensures that less drive energy must be used to move a machine part in an application. While on the one hand, we make our products, which are environment-friendly right at the production stage, igus has also put in place multiple recycling programs which demonstrate our commitment to environmental protection and leave a lesser carbon footprint on the environment. Through our sustainability initiatives, we are committed to being the leader in unique and innovative sustainability initiatives just like our products."

"WHILE ON THE ONE HAND, WE MAKE OUR PRODUCTS, WHICH ARE ENVIRONMENT-FRIENDLY RIGHT AT THE PRODUCTION STAGE, IGUS HAS ALSO PUT IN PLACE MULTIPLE RECYCLING PROGRAMS WHICH DEMONSTRATE OUR COMMITMENT TO ENVIRONMENTAL PROTECTION AND LEAVE A LESSER CARBON FOOTPRINT ON THE ENVIRONMENT. THROUGH OUR SUSTAINABILITY INITIATIVES, WE ARE COMMITTED TO BEING THE LEADER IN UNIQUE AND INNOVATIVE SUSTAINABILITY INITIATIVES JUST LIKE OUR PRODUCTS."

Deepak Paul, Managing Director, igus India

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Some of the noteworthy recycling initiatives of igus involve infusing a fresh lease of life into discarded electrical appliances under which trainees transform old computers into functional devices for private use, for which igus was awarded the best MINT employer. Titled 'reguse', the project involves a trainee business unit turning the electrical waste produced at igus back into functional electrical devices for personal use. The IT trainees deal with the technology, the industrial business trainees handle the legal issues, and a media designer trainee takes care of marketing. Everything from laptops and PCs to monitors is reconditioned and then offered for sale to igus employees in Cologne, Germany, at a reasonable price. Alternatively, the so-called refurbished devices and all proceeds are donated to sustainable and charitable projects.

Another crowning glory project that adds feathers to igus's cap is its 'chainge' recycling program. The 'chainge' recycling programme is a green initiative. Under this program, customers can send discarded energy chains, regardless of the manufacturer, to igus for recycling. Igus ensures that they will be recycled responsibly and not end up as landfills and other plastic waste. For this commitment, a value voucher is given for their next igus purchase in exchange.

Avoidance of CO2 emissions is another critical concern for igus, and to achieve this, igus is involved in reforestation initiatives worldwide. From planting 5000 trees in 2020 and 2021, igus witnessed a 3x increase in reforestation efforts, where igus planted 17,904 trees globally. In India, along with Sankalp Taru Foundation, igus has undertaken a tree-planting project to create more biodiversity, soil resilience and a stable water table in the Mahabalipuram region.

AVOIDANCE OF CO2 EMISSIONS IS ANOTHER CRITICAL CONCERN FOR IGUS, AND TO ACHIEVE THIS, IGUS IS INVOLVED IN REFORESTATION INITIATIVES WORLDWIDE. FROM PLANTING 5000 TREES IN 2020 AND 2021, IGUS WITNESSED A 3X INCREASE IN REFORESTATION EFFORTS, WHERE IGUS PLANTED 17,904 TREES GLOBALLY.

There are 3000 saplings planted on two hectares of land – a total of 14 different species, including healing, fruit-bearing and shade-giving plants. A similar initiative was carried out in Pune, and another 3000 trees were planted to increase the urban greenery and improve the city's air quality. Over the next 35 years, they will be able to produce approx 33,971 tonnes of oxygen, bind 12,356 tonnes of CO2 and filter 762,574,000 litres of water. Careful monitoring and maintenance of the plant locations ensure that over 95% of the seedlings survive.

Igus has also invested in 'Hydrothermal plastic recycling solution' start-up, Mura Technology, which converts plastic back to oil through a 25-minutes chemical recycling method, using water, heat and pressure. The technology enables plastic, which would otherwise pollute the environment, to be reused as a valuable raw material. Through this investment, igus aims to contribute meaningfully to building a sustainable, circular economy and preventing plastic waste from degrading the environment.

As much as igus is committed to providing innovative and cost-effective solutions, it is also committed to making the world cleaner, greener, and safer by reducing its carbon footprint.

Courtesy: igus

TITLED 'REGUSE', THE PROJECT INVOLVES A TRAINEE BUSINESS UNIT TURNING THE ELECTRICAL WASTE PRODUCED AT IGUS BACK INTO FUNCTIONAL ELECTRICAL DEVICES FOR PERSONAL USE

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Transforming The Tomorrow Of Food Processing And Packaging

The food processing and packaging industry are on the brink of massive growth. It is essential to highlight the challenges and developments and bring forward new knowledge. The article throws light on the upcoming food processing event and what it entails.

India's food process industry ranks fifth in the world regarding production, consumption, export and expected growth. In the last five years ending in 2019-20, the industry was growing at 11.18 per cent and is expected to have a CAGR of 12 per cent until 2025-26, raising output valuations to $535 billion, according to Invest India. Another sector with massive potential is its associate, the packaging industry. With a growth rate of 26 per cent, the sector will be worth $204 billion by 2025. However, the growth potential is tremendous, and there is plenty to be explored.

To understand the latest global innovations, trends and technologies in the food processing and packaging industry, achieve worldwide competitiveness and speak to critical businesses in the food processing and packaging sector, the Economic Times will be hosting the third edition of the ET Food Processing and Packaging Summit in April 2022, in Delhi, India. The event will bring together demand and expertise in one place while delayering the latest trends.

The impact of the pandemic

The food processing and packaging sector has not been indifferent to the effects of COVID-19. Besides changing consumer consumption patterns, problems of supply chain disruptions came along with the lockdown. To counter the challenges faced by the industry, the government came up with several measures, including offering incentive packages, schemes for micro food enterprises, investment facilitation cells to streamline the supply chains of the food processing industry, subsidies on transportation of fruits and vegetables and more.

Contrary to the food processing industry, the packaging sector was not severely affected by the pandemic, except for supply chain disruptions. The stability was essentially due to the growing need to supply the essentials and continue its supply

THE ECONOMIC TIMES

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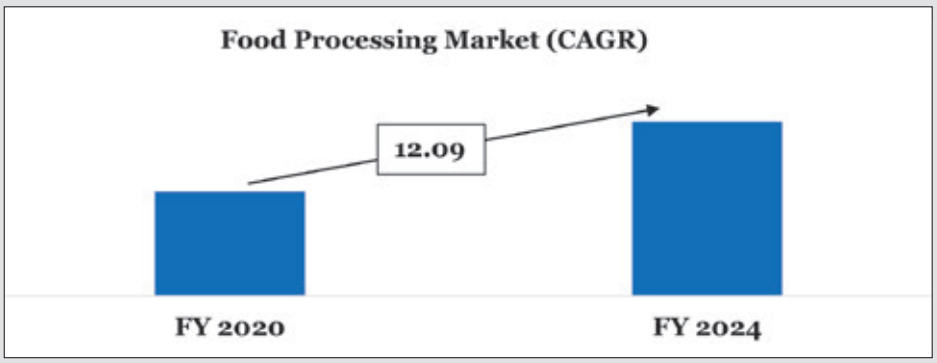

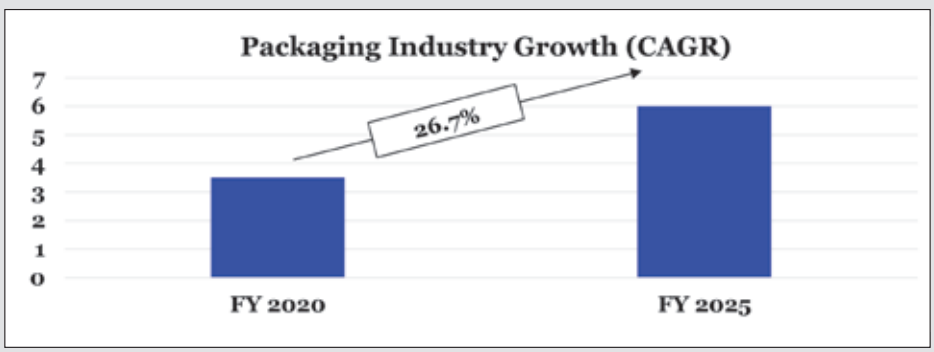

with quality packaging. Although, the industry did face a change in demand pattern with the required packaging, as more consumers and companies were opting for sustainably packaged products rather than plastic packaging.

Addressing the challenges

Despite the expected exponential growth in the next five to six years, there are several challenges in the industry's way to mitigate. Some critical problems of the industry include the poor supply chain linkage, which leads to high wastage and high cost. Additionally, the sector also faces several infrastructure bottlenecks, so much so that nearly 30% of the produce from the fields get wasted due to poor harvesting facilities and storage infrastructure. Additionally, the lack of a skilled workforce and low adherence to quality standards result in a huge industry gap and problems of standardisation and certification.

For the past several years, the government has been working on solving each problem meticulously. Measures such as increasing FDI in the sector while expanding the food and processing industry and employment, policies such as the agricultural produce and livestock marketing act 2017 and electronic national agriculture market (e-nam), Pradhan Mantri Kisan Sampada Yojana, Mega Food Park Scheme, and more, are all a step in the right direction. However, more needs to be done.

Why the food processing and packaging summit

COVID-19 has made a massive change in the way we function steadfast. The pandemic brought to face the changing pattern of consumer demand – a more conscious approach has been developed throughout. It is vital to establish a space where the changing face of the industry can be brought forward, discussed and acknowledged. An open platform to effectively brainstorm and bring forward ideas and enable discussion is the need of the time.

The Economic Times will bring to the fore organisations and professionals, gather insight on how to deal with critical business issues and help companies proactively lead the transformational change with the latest information on market advancements and critical insights into managing existing ecosystems. It will bring together the food processing and packaging industry leaders, government officials, experts from plants who play an essential role in building the future of India's food industry.

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ALL GLITZ AND GLAM:
Doing The 'Drastic' For Plastics

Carving a moment in the history of the plastics processing industry, the Economic Times hosted its annual ET Polymers Award on March 25, 2022. It brought together the most recognised names of the plastics industry under one roof, opening the platform up for discussions and debates. It also recognised and honoured the best of the best in the plastics industry. Here are the excerpts of the event…

By Anvita Pillai

When Mr Maguire told Benjamin, "I just want to say one word to you – just one word… plastics. There's a great future in plastics. Think about it. Will you think about it?" in the scene from the 1967 film The Graduate, who knew he was predicting a billion-dollar industry just waiting to explode. Honouring the best in the plastic processing industry, especially in India, needs to be lauded. What better way could there be to recognise the best in the Indian industry than The Economic Times Polymer Awards 2022.

The annual tradition this year was hosted in association with presenting partner – Exxon Mobil Lubricants India Pvt Ltd, supporting partners – Domo, Yupo and TAGMA India and was powered by partner Yudo Hotrunner on March 25, 2022. Needless to say, the red-carpet event was a witness to the glamour and glory of the plastics processing industry and was executed with the utmost enthusiasm.

L to R: Panellists Vidyadhar Limaye, Senior Director, IAC Group; Shujaul Rehman, CEO, Garware Technical Fibres Ltd; Sandeep Engineer, Founder, Astral Pipers, with moderator Rahul Kamat, Editor - B2B Division, Worldwide Media

Say no to plastic?

There isn't a single individual who can go in a day without touching something made out of processed plastics. From a pen to a phone to a bottle you drink water out of and more, it's all plastic. Without digging deep into the science, everyone knows plastics takes a long time to decompose; something as simple as a water bottle can take up to 450 years alone. And, it cannot be right to manufacture billions of objects that are used for a matter of minutes and then are with us for centuries (Roz Savage).

Does that mean the entire concept of plastic and products need to be banned? What does sustainability in plastic mean? Can plastics be sustainable in the first place? All these are questions that naturally arise, especially now, given that people are becoming more socially aware of the products they use and their effects on the environment. To address the nature of the Indian plastics business, with an additional concept of sustainability, Rahul Kamat, Editor - B2B Division, Worldwide Media, moderated a panel discussion on 'Sustainability in plastics'.

While the sustainability of plastics is a broad topic, panellist Sandeep Engineer, the founder of Astral Pipers, who based his opinion on three points – application, affordability and the ultimate disposal of the waste. He emphasised, "Basics need to be understood before innovating for sustainability. Plus, it is essential for our economy that the changes we make are affordable." Further, leading on sustainability was panellist Shujaul Rehman, CEO, Garware Technical Fibres Ltd, who believed if one could use innovation and drive it, there is a way forward. "The mindset change which is required is that you need to treat waste as an asset, not as a liability. So, if you start treating waste as an asset and not a liability, and you have a supply chain system to take care of it, I think you can do wonders," he said optimistically.

Offering an expert perspective from the automotive industry, Vidyadhar Limaye, Senior Director, IAC Group, said, "I think sustainability concerning plastics in automotive is good. Additionally, the usage of plastic in automotive is also drastically going up day by day because if we have to reduce the emission, then the car's weight has to go down. So, eventually, more of usage of plastic is also underway in automotive." He also added that cluster manufacturing is the overall solution for the problem of sustainability, and sup-

"THE AWARD IS A POSITIVE AFFIRMATION FOR THE WORK WE ARE DOING AT GARWARE TECHNICAL FIBRES LTD. OUR CONSTANT ENDEAVOUR IS TO MAKE THE GROUP STRONGER AND PROVIDE THE BEST SOLUTIONS TO OUR CUSTOMERS. THIS AWARD WILL PUSH ME TO CONTINUE MY WORK IN THAT AREA."

Shujaul Rehman, CEO, of Garware Technical Fibres

FELICITATING THE WINNERS OF ET POLYMER AWARDS 2022

port from the government and customers is what can make it effective.

To read more about the panel discussion, visit page 38

A look into the selection process

ET Polymers Awards, India's pioneering awards for the plastics and polymer industry, held its jury meeting to elect the winners for its current 2022 cycle. A total of 40 finalists were confirmed who were vying for 14 awards across the six categories of automotive, consumer durables, electrical & electronics, packaging, recycling, houseware & kitchen, medical devices & healthcare and open.

The ET Polymers Awards jury was chaired by Dr Swaminathan Sivaram, Honorary Emeritus Professor and INSA Emeritus Scientist at the Indian Institute of Science Educa-

"THERE IS A LOT OF HARD WORK INVOLVED IN WHERE WE ARE RIGHT NOW, FROM A TEAM OF 20 MEMBERS TO A TEAM OF 1600 MEMBERS"

Bishan Jain, Director, Goldmedal India

"THERE HAS BEEN A BIG ROLE OF OUR TEAM IN THE BACK-END TO BUILD EVERY PRODUCT OF OURS, AND WE ARE REALLY GRATEFUL FOR IT"

Kishan Jain, Director, Goldmedal India

tion and Research (IISER), Pune. It was attended by our eminent jury panel Mr S K Ray, Visiting Professors and member of Education Council at Somaiya Vidyavihar University, Mumbai and Professor (Dr.) S. T. Mhaske, Professor of Polymer Technology & Head, Department of Polymer and Surface Engineering, Institute of Chemical Technology (ICT), Mumbai. The jury committee considered the performance of the nominees based on product, design, manufacturing, marketing and sustainability.

The best brands of polymer

In association with knowledge partner BMGI India, Economic Times also announced the winners of 'The Economic Times Best Brands in Plastics & Polymers 2022'. Over 15 companies achieved the award for

Awarding the industry best

The ET Polymers Awards, India's pioneering honours for the plastics and polymer industry, declared its winners for the 2022 cycle. In the jury meet held on February 7, 2022, a total of 40 finalists were confirmed who were contesting for 14 awards across six categories of automotive, consumer durables, electrical & electronics, packaging, recycling, houseware & kitchen, medical device & healthcare and open.

With a motto to honour the true flagbearers of 'excellence in plastics', the awards were segregated into two categories: large, i.e., companies with an annual turnover of Rs 1000 cr and more, and SMEs, i.e., companies with turnover of less than Rs 1000 cr.

The champions of automotive

The event commenced with Varroc Engineering Limited (4w Lighting Division) bagging the award under the Automotive -- Large category for its modified polycarbonate material for automotive modern tail lamp lighting technology. Meanwhile, the runner up prize was presented to Tata Motors Limited for the world's first dual-layer rotomolded fuel tank under the same category.

Subsequently, while PPAP Automotive Limited received the runner up award for its waist seal outer belt-replacement of painted steel applique by polymer for appeal under the SMEs category for Automotive, Omnium Auto Exteriors (India) Pvt Ltd took home the award for its thermoplastic tailgate assembly (XUV700).

The well 'packaged' winners

Under the following category – Packaging: Large - Huhtamaki India Ltd won first place for its limited-edition variable festive tea packs. Uflex Limited took home the runner up for its fully recyclable mono-polymer bags for large quantity rice packaging application for peacock 20 kg rice bag.

Lastly, Regent Plast Pvt Ltd won first place for its one ltr HPCL bottle under the SMEs category for Packaging.

The medical, healthcare and more…

Mitsu Chem Plast Ltd bagged the award for its head and foot bow for hospital bed with cardiopulmonary resuscitation (CPR) board in the SMEs category for Medical and Healthcare.

Under the Open category for Large, Garware Technical Fibres Ltd received the award for its X-18-Ultra Stiff Net, while Astral Limited took the runner up for its CPVC Multilayer Composite Pipe.

Subsequently, Xpro India Limited (Biax Division-Bariora Unit II) bagged the first prize for its dielectric biaxially oriented polypropylene (Bopp) film for manufacturing capacitor under the Consumer Durables & Electrical & Electronics category for SMEs, and OMG Auto Mould Pvt Ltd received the runner up for its Kyan-digital classroom solution.

Recognising the sustainable pioneers

To conclude, the last category awards for SMEs under Recycling was bagged by Banyan Nation for its recycled HDPE & PP granules, and the runner up was awarded to Aayush Plastic for its multilayer laminated disposable products.

CELEBRATING THE BEST BRANDS IN THE PLASTICS AND POLYMERS INDUSTRY

Rishi Sutrave, Brand Publisher, Worldwide Media felicitating jury members Dr Swaminathan Sivaram, Honorary Emeritus Professor and INSA Emeritus Scientist, Indian Institute of Science Education Research, Pune and S K Ray, Visiting Professors and Member of Education Council Somaiya Vidyavihar University, Mumbai

being the best brands this year.

Here's the list of all the companies that took home the award for the Best Brands in Plastics & Polymers this year:

1. Blend Colours
2. Domo Engineering Plastics India Pvt Ltd
3. DPL Global Links
4. ExxonMobil Lubricants Pvt. Ltd
5. Electronica Plastic Machines Limited
6. Hasco India Pvt. Ltd
7. Igus India Private Limited
8. JJ Plastalloy Pvt. Ltd
9. Lohia Corp Limited
10. Mamata Machinery Private Limited
11. Meusburger India Pvt. Ltd
12. Mundhra Masterbatch
13. S&T Plastic Machines Pvt Ltd
14. Servo Packaging Limited
15. Steer Engineering Pvt. Ltd
16. Wittmann Battenfeld India Pvt Ltd
17. Yudo Hot Runner India Private Limited

The editor's choice awards

Post the awards, it was time to recognise the best in the industry with the Editorial Choice ET Polymers Awards 2022. **Commencing the Editor's Choice Awards,** the 'Economic Times Polymers – Next Generation Leader Award for 2022' was conferred on the Director of Cello Group, Gaurav Rathod.

Recognising the new-age spirit of entrepreneurship in India, Directors of Goldmedal India, Kishan Jain and Bishan Jain were awarded the Economic Times Polymers Entrepreneur of the Year Award 2022. "There is a lot of hard work involved in where we are right now, from a team of 20 members to a team of 1600 members," said Bishan Jain, receiving the award. "There has been a big role of our team in the back-end to build every product of ours, and we are really grateful for it," added Kishan Jain.

Rewarding the portentous leadership in the polymers industry, Shujaul Rehman, the CEO of Garware Technical Fibres, was conferred with the ET Polymers CEO of The Year 2022 award. Acknowledging the award, Rehman said, "The award is a positive affirmation for the work that we are doing at Garware Technical Fibres Ltd. Our constant endeavour is to make the group stronger and provide the best solutions to our customers. This award will push me to continue my work in that area."

Lastly, to recognise the highly esteemed personality of the polymers industry who has made a difference through and through the sector, the ET Polymers Lifetime Achievement Award 2022 was awarded endowed to Sandeep Engineer, the Chairman and Managing Director of Astral Ltd. "Today, Astral is Rs 4,000 Cr company, with ten operational plants and two more coming up and have a team of over 9000 people, but I strongly believe that we are not even halfway into our journey and lot more things need to be done. The country is set to grow manifolds in the coming 10 years, and I have set a vision of turning my company into a Rs 10,000 Cr company. Each one, you should also bet on the growing economy and work to grow big," he said, accepting the award.

Celebrating the finest

With this, the ET Polymers Awards 2022 edition came to an end with the vote of thanks delivered by Ranjan Haldar, Assistant General Manager – B2B division, Worldwide Media.

In this growing economy, the Indian market today is spoiled for choices, even in the plastics processing segment. In times like these, affairs such as the ET Polymer Award are not only meticulously recognising the best in the industry but it is also bringing forward the innovations of India in front of the world. While more needs to be done, ET Polymer Awards, Best Brands, Editors Choice and more are certainly an effort in the right direction.

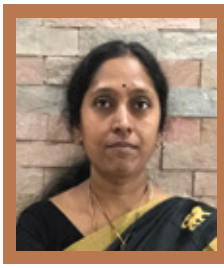
"THE COUNTRY IS SET TO GROW MANIFOLDS IN THE COMING 10 YEARS, AND I HAVE SET A VISION OF TURNING MY COMPANY INTO A RS 10,000 CR COMPANY. EACH ONE YOU SHOULD ALSO BET ON THE GROWING ECONOMY AND WORK TO GROW BIG."

Sandeep Engineer, Chairman and Managing Director, Astral Ltd

"Innovation Is The Core Tenets Of Our Business Model"

In conversation, Geeta Jyothi, Marketing Director & Head – Technical, ITW Chemin, who explains how ITW is driving business in low footfall sectors, business during a pandemic, innovation in plastics and more.

By Anvita Pillai



"CUSTOMER-CENTRIC INNOVATION AND EXCEPTIONAL PERFORMANCE & DEDICATION HELPED US TO CONTINUE TO SERVE OUR CUSTOMERS WITH EXCELLENCE THROUGH THE PANDEMIC"

ITW offers its services in various industries, ranging from automotive to footwear. Since the onset of COVID-19, how did you improve business footfall in the sectors with low business opportunities?

ITW Chemin is a business unit of ITW Inc USA and offers a wide array of products that go into key manufacturing industries like automotive, heavy industry and general manufacturing. Our solutions are designed to solve key technical challenges for our customers and are used for maintenance and manufacturing applications in the industries we operate in.

Since COVID-19, we have demonstrated strong performance across all sectors. In certain challenging sectors, we were able to rely on our business model to focus on our largest and most profitable customers while reducing costs and complexity to ensure we continued to protect our long-term growth plan.

Since the onset of COVID, could you elaborate on how has your business has performed to date?

The pandemic has been very challenging for our operations and customers. The focus on customer-centric innovation, exceptional performance and dedication shown by our team have helped us continue serving our customers with excellence through this period. In 2021, ITW Inc. posted a growth of 15% despite the circumstances.

How has product innovation continued in ITW? Can you tell us some of the prominent launches for the plastics industry?

Innovation is one of the core tenets of our business model, and we have relied on it to guide us. We innovate from the customer perspective, not from the research and development centre. We focus on creating unique solutions by working with our key customers on their stated and unstated pain points and delivering an advantage to their operations through cost savings or high-quality manufacturing. Our people's deep capabilities and creativity are evident through our portfolio of approximately 19,300 granted and pending patents, including more than 1,800 new patent applications filed in 2021 alone.

We launched RUST-O-WAX, a wax-based coating to protect moulds, dies and other critical metal components. This product has come out of close collaboration with our key customers in the plastic injection moulding industry and has been specifically designed to meet the needs of Indian customers. Damages caused by corrosion on the moulds lead to poor product quality and unwanted high repair costs. This is the challenge that RUST-O-WAX addresses. Since the launch, we have seen excellent results with the adoption of this product growing fast in this industry.

ITW has prominent competitors in India. How are you working on having an edge in the Indian market?

Our focus has constantly been on delivering differentiated solutions for challenges of the Indian manufacturing sector. Our business model, skilled people in applying it and local manufacturing capabilities help us achieve this. Our customers have recognised the difference in what we offer, and as a result, we enjoy strong loyalty with all our key customers despite competition from Indian and global suppliers. Our brands are known as technology and market leaders within their respective categories, and we continue to maintain strong progress towards our long-term objectives.

What is in store for business in 2022?

In 2022, we are looking to continue our strong growth across our target segments, including the plastic manufacturing industry. We hope to bring out more differentiated products to enhance the value addition we offer to our customers.

Is India Ready For Sustainable Plastics?

The answer is NO, and the reasons are: cost, awareness and innovations. In India, customers are more bothered about using cheap products than sustainable, with premium prices. During the panel discussion at ET Polymers Awards 2022, panellists raised their concerns about adopting sustainable plastic, companies' intentions and government actions.

By Rahul Kamat

Take a moment and look around; you will realise how dependent we are on plastics. It has become an unavoidable part of our lives in the past three decades or so. According to the recent United Nations Environment Programme report, the world produces 400 million tonnes of single-use plastic (SUP) waste annually (47 per cent of the total plastic waste). It is estimated that only 9 per cent of plastic is getting recycled worldwide.

Like any other country, waste management is a pressing issue in India, especially with the unceasing growth of consumerism throughout the nation. Interestingly, almost 60 per cent of the total plastic waste generated in India gets recycled while the remaining escapes into the environment. However, most of this plastic is down-cycled. At this juncture, India needs robust and stringent waste management tools to improve the situation substantially.

"CUSTOMERS ARE NOT WILLING TO PAY FOR GREEN PRODUCTS, AND EVEN IF THEY PURCHASE, WE DON'T GET REPEATED ORDERS."

Shujaul Rehman, CEO, Garware Technical Fibres Ltd

According to **Sandeep Engineer, Managing Director, Astral Ltd,** there are three factors that need to be considered when we talk about sustainable plastics. Firstly, the use of sustainable plastics in various ap-

plications; secondly, how affordable is the end product from sustainable plastic and lastly, how are we disposing of the plastic waste.

During the discussion, Engineer suggests that those companies with capital should invest a more significant portion into the research and development of sustainable plastics. "It's a journey which will take its own time. We need to be patient," he emphasised

Meanwhile, **Shujaul Rehman, CEO, Garware Technical Fibres Ltd,** was optimistic about the whole sustainable plastic concept. "There are 50 million tonnes of plastic produced in the world right now, and only 1 per cent is recyclable, or you can call it green." According to Rehman, there are 40,000 plastic manufacturers globally, of which industry bodies are tracking only 100 companies. "The market cap of these companies is going to shoot up if they invent solutions which are sustainable," he said.

Citing an example, Rehman said look at Tesla's market cap, which is more than one trillion-dollar whereas other automotive companies are struggling to reach that mark.

Going ahead with the discussion, **Vidyadhar Limaye, Sr Director, IAC Group,** who hails from the automotive background, mentioned that these days automotive companies are cautious on the use of plastic and, more importantly, sustainable plastics. "The auto majors globally are majoring the KPIs of their CEOs based on sustainable initiatives. So if the CEO has to drive sustainability throughout his organisation, then the usage of raw materials becomes predominantly extremely important," he added.

"THE GOVERNMENT SHOULD DEVELOP CLUSTER MANUFACTURING WHICH WILL HAVE PLASTIC MANUFACTURERS THAT CAN ENABLE THEM TO MANUFACTURE END-TO-END RECYCLABLE PRODUCTS."

Vidyadhar Limaye, Sr Director, IAC Group

Can SMEs afford to be innovative?

Although, Global CEOs are inclined towards using sustainable materials, innovations come with a cost. The question is, how can we make it affordable and more importantly, can SMEs in India give it a shot?

Limaye was prompt in answering this question. "The government has to get involved and develop cluster manufacturing, which will have plastic manufacturers in a cluster that can control end-to-end recyclability of the products. And I think there are SMEs in India who are creating reprocessed materials which are available to be used for automotive grades. So, I think SMEs are playing a larger role by providing reused materials."

For Engineer, smaller companies won't be inclined towards innovations. "Global giants have to step in first, and then the smaller companies can join to create the sustainable products," he said and added, "We have one product we are using fewer plastics and majorly minerals, which is classified as a green product. We call it a silent pipe."

However, Rehman quite to the contrast believed, being the leader in providing world-class innovative solutions in high-performance fibres technology, the company has faced cost pressure from their European customers. "They are not willing to pay the premium cost for green products, and even if the customers have purchased our bio-based products, we haven't received repeat orders."

"GLOBAL GIANTS HAVE TO STEP IN FIRST, AND THEN THE SMALLER COMPANIES CAN JOIN TO CREATE THE SUSTAINABLE PRODUCTS."

Sandeep Engineer, Managing Director, Astral Ltd

"Advisories Are Transitioning From Being Transaction-Oriented To Being Business Thinkers"

The role of investments across sectors have evolved, and so has the part of M&A firms dealing in them. Explaining the evolving nature of investments in plastics, polymers and other sectors, Mahesh Singhi, Founder & MD, Singhi Advisors, talks to ET Polymers. Further, he throws light on the effect of rising crude prices and the CEPA agreement on the Indian plastics and polymers market.

By Anvita Pillai

Since the onset of covid, amongst the sectors you offer services to, which have seen a rise in investment, and which have slowed down?

Since COVID-19 started, a sustained investment momentum has been retained across sectors comprising healthcare services, nutrition, pharma, building materials, electric vehicles and sustainability, speciality chemicals and agrochemicals. Sectors such as hospitality, travel, education, metals etc., which had slowed down in the initial phases of the pandemic, have been witnessing an upswing over the last two to three quarters.

If we specifically have to draw attention to the plastics, polymers and packaging sector, how have the investment activities post the second lockdown been?

Post the second COVID-19 lockdown, with the rise of e-commerce and food services, the role of plastics, both in rigid and flexible packaging, has increased. This is due to the renewed interest in online delivery, packaged foods & nutrition and the growing demand for pharmaceutical & consumer packaging. With the light-weighting requirements in mobility and electric vehicles, the use of engineering plastics has also increased. There has been renewed

investor interest in both rigid and flexible plastics, as quite a few acquirers are consolidating their presence by pursuing strings of pearls strategy. Investor activity has also gained momentum in the healthcare and consumer packaging space.

Crude prices have jumped over the $100 mark for the first time in seven years. How much impact will it have on the polymers industry, both from the supply and production side?

Crude oil and its derivatives are vital feedstocks for manufacturing downstream petrochemical products. A significant upsurge in the crude oil price determines the investment decisions and production schedules of petrochemical companies and significantly impacts the demand-supply dynamics of the polymer industry. Simply put, the higher the price of oil, the higher is the cost for manufacturing downstream polymers. A continuing rise in oil prices exerts upward pressure on the production costs of the plastics processing industry, leading to a dampening effect on their supply. However, in a unique situation, even the metal cycle is upswing with rising prices of both ferrous & non-ferrous metals, which will help the polymer industry retain its competitiveness.

Given that the world is going towards green resources, how much of an investment is required of Indian enterprises to transition towards environmental-friendly products?

Businesses have a pivotal role to play in promoting the use of renewable energy, implementing green business practices, embedding circular economy standards and steering the course towards making India a low-carbon economy. Though it is hard to numerically compute a definite investment amount required for transitioning to environment-friendly products, Indian enterprises can create a collective corpus that can be used to achieve the goal of sustainable development.

"THERE HAS BEEN RENEWED INVESTOR INTEREST IN BOTH RIGID AND FLEXIBLE PLASTICS, AS QUITE A FEW ACQUIRERS ARE CONSOLIDATING THEIR PRESENCE BY PURSUING STRINGS OF PEARLS STRATEGY"

Do you see the plastics packaging industry suffering heavily due to the issue of environmental regulation since several western countries are already moving towards banning plastics for packaging?

To counter the problem of plastic pollution, India has also imposed a ban on single-use plastic. The plastics packaging industry, especially small manufacturing units which have still not recovered from the adverse impact of the pandemic, will feel the brunt of this ban. With the proposed ban on single-use plastic, e-commerce players using plastic for packaging may want to shift to other alternatives, but it's easier said than done. This may not be easy to implement in the short term, and if that happens, it will lead to significant business downsides for packaging material manufacturers. The key to this problem is recycling and an efficient waste collection system.

India recently signed a bilateral trade deal with CEPA (UAE). How does this deal benefit the two countries in the future and India specifically?

After the US and China, UAE is India's third-largest trading partner. The signing of the Comprehensive Economic Partnership Agreement (CEPA) is a crucial step for helping India expand its non-oil trade with the UAE. Expansive in its scope, the agreement will help India seamlessly navigate procedural complexities related to issues like intellectual property rights (IPR) and digital trade. Indian goods will gain more comprehensive access to the UAE markets and avail benefits of zero tariff barriers by removing customs tariffs on around 80 per cent of goods exported by India.

How has the nature of advisory firms changed in the last few years?

The role of advisory firms is fast changing from being 'reactionary' to clients' requirements to make a 'proactive' approach and offering solutions aligning with prevailing trends in the industry. New industry players are entering the fray based on the gaps in the business structure and disrupting the old horses or settled players in the market. This has also changed with the aggressive entry of buyout funds to fill the gap between corporate consolidation to industry consolidation. In this direction, deep-pocketed buyout funds have played a significant role in consolidating the industry, such as Blackstone acquiring Essel Propack, Advent International acquiring Manjushree Technopack and Warburg Pincus acquiring Parksons Packaging. Renewed interest from buyout funds in the space has also enhanced traction in the strings of pearls strategy (multiple acquisitions in the same category). The nature of advisories is transitioning from transaction-oriented to business thinkers, playing a significant role in corporate growth strategies. Demanding clients in a highly competitive marketplace will expect the advisors to come to them with a defined theme & complete game plan, right from acquisition strategy, consolidation plans and extend further to their exit strategy.

Low Carbon Smart Pump Innovation

Shakti Pumps (India) Limited is amongst India's leading manufacturers of energy-efficient pumps with the innovative Micro Smart Pump, a highly efficient submersible helical pump solution it has developed.

The Micro Smart Pump, one among many such innovative solutions in Shakti Pump's product portfolio, was created under the Facility for Low Carbon Technology Deployment (FLCTD) project to promote innovation of low-carbon technologies and its deployment in industrial and other related sectors of the Indian economy. The FLCTD has been jointly implemented by the Bureau of Energy Efficiency (BEE) and the United Nations Industrial Development Organization (UNIDO).

The Micro Smart Pump is a PMSM-based submersible helical pump running from single-phase AC. It is presently installed at 15 sites in Indore and one each in Shahdol and Hyderabad. The key benefits of this innovation include an increase in efficiency ranging from 200 to 500 per cent vs conventional single-phase IM, energy-efficient pumping irrespective of seasonal head variation, SMPS - based pump 90V to 270V operations comes with in-built protection and does not require an external control panel.

With its immense understanding of India's irrigation and pumping requirements, Shakti Pumps is heavily invested in the ongoing research and development of new-age products. It has developed products offering advanced water pumping solutions covering a range of applications from flood and micro-irrigation, horticulture, domestic water supply, commercial and industrial use.

With a host of electric and solar energy-operated pumps, Shakti Pumps is the largest and most prestigious brand in the domestic and global markets. Its core strength has been manufacturing unmatched quality pumps and solar-powered pumps with more energy efficiency, offering better longevity and accessible maintenance facility.

Effective Mould Protection With Rust-O-Wax

Injection moulding is the most common method used for manufacturing plastic parts and at the core of this manufacturing process is the mould itself. High quality of the manufactured products is directly linked to a well-designed and on as equally important, a well-maintained mould. However, the sad reality is that mould maintenance is only given the required attention when mould is damaged, or product quality problems arise.

One of the most common problems that arises due to neglect is that of corrosion on moulds. When moulds are not in use, the cavity and surface of the moulds get corroded due to prolonged exposure to environment. Corrosion tends to damage the surface quality and directly impacts the product quality. This leads to unwanted and high repair costs and in some cases, total replacement of moulds. Typically, wax or oil based protective coating is used on the moulds as a proactive solution to avoid mould corrosion.

ITW Chemin launched the improved version of RUST-O-WAX, a wax-based aerosol coating for protection of critical metal components against corrosion damage. RUST-O-WAX is a long term outdoor and indoor corrosion protector from rust and corrosion, for machined surfaces and assemblies subjected to long periods of storage or adverse shipping condition. The waxy non-brittle film is highly resistant to humidity and severe corrosive atmosphere.

The new formula of RUST-O-WAX improves its ability to withstand higher temperatures (upto 70 ^{0}C) and can be applied directly onto hot surfaces. This translates into long lasting protection, uniform coverage with no sagging during application.

Its features make it suitable for use on moulds used in injection moulding manufacturing process. After prolonged use, the temperature of the mould rises and RUST-O-WAX can be directly applied onto these surfaces for protection prior to storage. Wax also acts as a lubricant and is easy to clean. In addition to this, RUST-O-WAX is also suitable for protection of finished metal and plastic components, in process parts, battery terminals, farm machinery & metal spare parts against corrosion.

Additionally, before applying RUST-O-WAX, there may be a need to clean the surface of dust or residue OR to remove existing rust that has formed on the surface. M-CLEAN and RUSTLICK® 631 respectively can be used for these maintenance needs.

Waters Acquires Charge Detection Mass Spectrometry Technology; Accelerates Quantitative Mass Spectrometry With New Application on Waters Connect

Waters Corporation has acquired the technology assets and intellectual property rights of Megadalton Solutions, Inc., an early-stage developer of Charge Detection Mass Spectrometry (CDMS) technology and services. Financial details of the transaction are not being disclosed.

Founded in 2018 by professors Martin Jarrold and David Clemmer at Indiana University, Megadalton Solutions has developed CDMS instrumentation that makes it possible to analyse huge proteins and protein complexes, such as those used in cells and gene therapies, that would otherwise be difficult to analyse with conventional mass spectrometry. Waters became a strategic investor in the company and, in 2021, brought Megadalton's CDMS technology into the Waters Immerse™ Cambridge innovation and research lab for advanced testing and development.

"Large molecule mass spectrometry with CDMS offers an important tool for the characterisation, analysis and quantification of next-generation biologics, such as cell and gene therapies, which is an area of high interest among biopharmaceutical and biomedical research customers," said Dr Udit Batra, President and CEO, Waters Corporation. "Large molecules can be extremely challenging to characterise with conventional mass spectrometry because of their complexity. We are looking forward to further developing and commercialising the Megadalton CDMS technology to help customers analyse and quantify large molecules in applications such as cell and gene therapy drug development."

"We developed our CDMS detector to bring the precision of mass spectrometry to the analysis of complex biologics," said Dr Martin Jarrold, CEO of Megadalton Solutions, Inc. "It is an exciting milestone in our journey to have Waters carry forward and continue the development of CDMS for the analysis of large molecules such as gene-based therapies that represent the next generation of medicine."

| Figure 1: The apps that form waters_connect for quantiative analysis. *Image courtesy: Waters*

The new application on waters connect informatics platform

Further, it expanded its waters_connect™ informatics software platform to support customers analysing food and environmental samples with Waters' tandem quadrupole mass spectrometers. The new MS Quan™ application for waters_connect allows laboratories to screen large numbers of samples, or those quantifying hundreds of small molecule components and contaminants in a single run, a more efficient means of processing and reviewing data identifying batch-to-batch variations.

For laboratories using Waters™ Xevo™ mass spectrometers, the MS Quan app quickly and accurately converts measurement data on compounds into meaningful results in a traceable, compliant and secure manner. Featuring a web-based user interface, the MS Quan app includes an Exception Focused Review (XFR) feature that can help cut data review time by up to 50% by allowing users to focus on only those results that fall outside the user-determined ruleset.

"The waters_connect platform provides a backbone for the connected lab of the future where data is no longer siloed but can be securely shared among a community of connected scientists using apps that talk to each other," said Jon Pratt, Senior Vice President, Waters Corporation. "MS Quan is a great example of the new applications and quality improvements we are bringing to our customers via waters_connect and its platform architecture designed for data integrity, compliance, security and accessibility."

Several scientists from Primoris (Zwijnaarde, Belgium), a global contract laboratory, participated in the beta testing of the MS Quan software application. Primoris measures pesticide residues and contaminants in food and animal feed and analyses food additives, supplements, and essential oils.

"We've used MassLynx and TargetLynx from Waters for a very long time, so we knew from the beginning the potential that this new app will offer," said Janne Dombrecht, Analysis Lead, Primoris Belgium. "The final product is exactly what we were looking for. Our close relationship with Waters and testing this product to make sure it is optimal for our methods has been a win-win situation. We're excited to roll it out across Primoris!"

The waters_connect for quantitation workflow and MS Quan app is now available worldwide to upgrade select Waters' tandem quadrupole mass spectrometers.[i].

Igus Receives UL Approval For Halogen-Free TPE Cables

The independent organisation Underwriters Laboratories (UL) is one of the most important authorities in the USA in terms of product safety. It has been testing components of machines and systems since 1894 to see whether they are suitable for industrial use. Their seal is one of the prerequisites for a successful market entry in North America. Fire protection is a key decisive criteria. This is because, according to the US National Fire Protection Association (NFPA), machine fires are the fourth leading cause of fires in industrial environments in the USA, closely followed by fires caused by electrical factors. "That is why we are particularly pleased that igus has now become the world's first manufacturer to receive a UL seal for halogen-free TPE cables," says Rainer Rössel, Vice President and Head of the Chainflex cables business unit at igus. "The approval demonstrates to our customers that they have the safety aspect with chainflex high-end TPE cables."

For this certification, the igus engineers had to do a lot of persuading. Up to now, the flame retardancy of cables has been the key factor in obtaining UL certification for fire protection. Approval is therefore only granted to products containing flame retardants such as chlorine, fluorine or bromine. These additives increase flame retardancy. However, so far it has not been taken into account that the flame retardants generally change the chemical structure of the jacket and reduce the mechanical load-bearing capacity. Therefore, igus starts much earlier in the process: The cable specialist focuses less on preventing a fire from spreading, but rather on how the cable itself caused the fire. The TPE jacket compounds from igus are extremely resistant to mechanical loads as well as external influences. They can therefore be used in a wide range of applications: in small installation spaces of up to 4xd, on highly dynamic, short travels with accelerations of 100m/s² or on long travels in a temperature range from -35°C to +100°C. At the same time, they are extremely media resistant, even with special organic oils. In all of these energy chain applications, the halogen-free TPE jacket compounds from igus minimize premature ageing of the outer jacket by a factor of up to 10; when compared to the same materials containing flame retardants. A decisive cause of the fire is reduced. This is because if the jacket does not break the cable cannot cause a fire because a reduction in the cross-section of the cores is impossible due to the non-existent jacket break. An argument that finally convinced the UL.

With these measures, igus makes a significant contribution to increasing machine safety. The long-term flexural strength and service life of chainflex cables in the e-chain have been proven by numerous practical tests in the in-house igus test laboratory - and not just for TPE cables. "So far, customers have already had the opportunity to choose from 1,044 chainflex cables with UL approval," Rainer Rössel points out. "With the new certification, there are now more than 200 TPE cables, so we can offer an almost complete UL certified product range." Customers in Europe benefit from this by being halogen-free, as do those who build machines for the North American market, where UL certification of the individual components is the required rule.

9-speed AMT Tipper – AVTR 2825

Ashok Leyland, flagship of the Hinduja Group and India's leading commercial vehicle manufacturer, launched India's first Tipper with 9-speed Automated Manual Transmission (AMT) – the AVTR 2825.

The new AVTR 2825 with 9 speed AMT can operate in different transmission modes (automated and manual) and deliver high fuel efficiency with its acceleration-based gear shifting.

Ingenious technology of AMT in AVTR 2825 tipper eases driving efforts with its unique features like rock-free mode and integrated Hill-Start-Aid. This technical advancement helps in drastically reducing driver fatigue and stress while operating in a challenging environment the tippers are subjected to.

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- AMT integration with Hill Start Aid to avoid roll-back on gradients
- Forward & reverse maneuvering for assistance in traffic and parking

- Rock free mode to overcome wheel spinning when stuck in the mud)
- In-built engine over-run protection
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STATEMENT OF OWNERSHIP

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I, Sunil Wuthoo, hereby declare that the particulars given above are true to the best of my knowledge and belief.

(Sunil Wuthoo)

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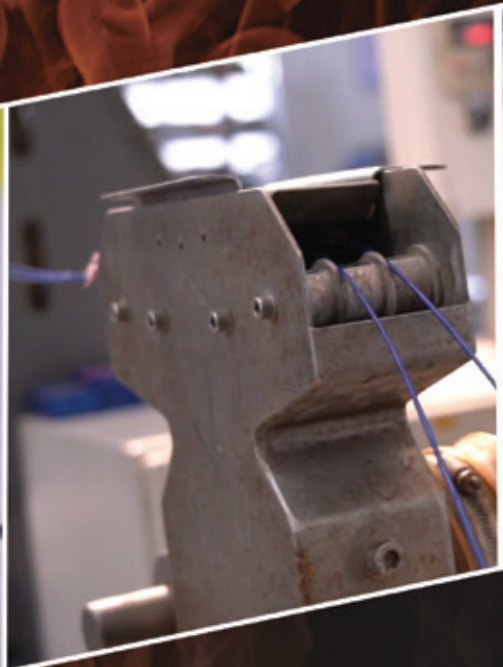

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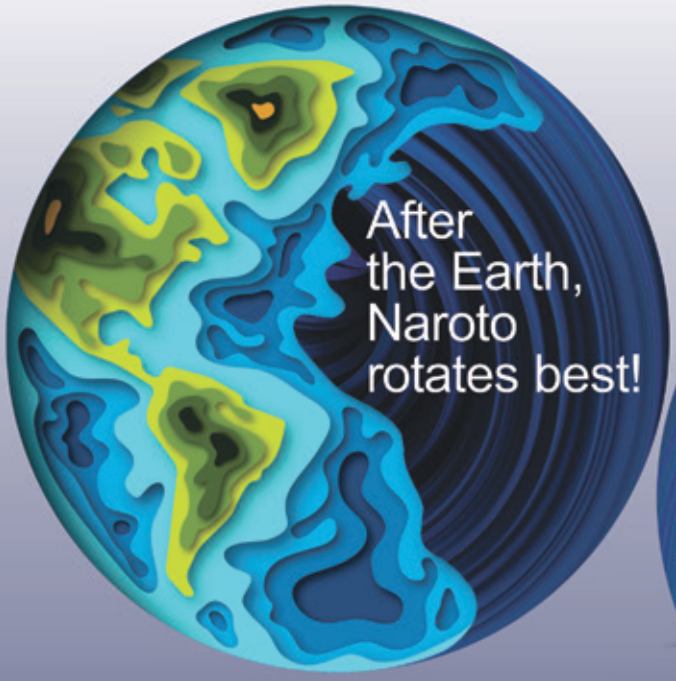

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