

THE ECONOMIC TIMES

POLYMERS

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Interview

*Prayag: Exploring
new horizons*

Automotive

*PPAP: Working
towards expansion*

**10th PLASTIVISION
INDIA 2017
CURTAIN RAISER
PAGE NO 44**



Evolving
through innovation!

Ashish Baheti, MD, explains how Vectus Industries is continuously innovating and developing polymer based solutions for enhanced living.



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For more information contact Yupo Corporation

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Now or never!

The Indian economy is surely showing strong signs of growth in the last three to four months. A very good monsoon has already brought cheer to all. Auto sales numbers are consistently improving. PMI and IIP figures too are pointing towards a definite revival. Moreover, the forecasts from ADB and World Bank are very encouraging. While this is very heartening for the entire economy, I believe that it is a 'Now or Never' opportunity for India's plastics sector.

We already know that plastics are linked with almost every sector of the economy – from agriculture to automotive, from construction to housewares, from packaging to retail, from food & beverages to pharma, from aerospace to electricals & electronics, from textiles to white goods, and everything in between. No other industry has such comprehensive and substantial impact on the market!

It is absolutely critical to make the most of the available opportunities and enable the industry its rightful position. The need is to develop the ecosystem while encouraging new entrepreneurs and generating employment at different levels. The industry must adapt new technologies and progressive business methodologies in a big way. It must focus on innovation, quality and customer delight.

At the same time, the Government and bureaucracy must also facilitate the growth of the industry by providing it the same freedom and incentives which have been instrumental in the phenomenal boom in the IT and the telecom sectors. Of course, the industry must take the initiative and be driven by a common vision.

Friends, the time is ripe. It is indeed a 'Now or Never' moment. And if we seize it then the 'Plastics 4.0' phase in India will be the best ever!

"The industry must adapt new technologies and progressive business methodologies in a big way to rise to the next level. It must increasingly focus on innovation, quality and customer delight."

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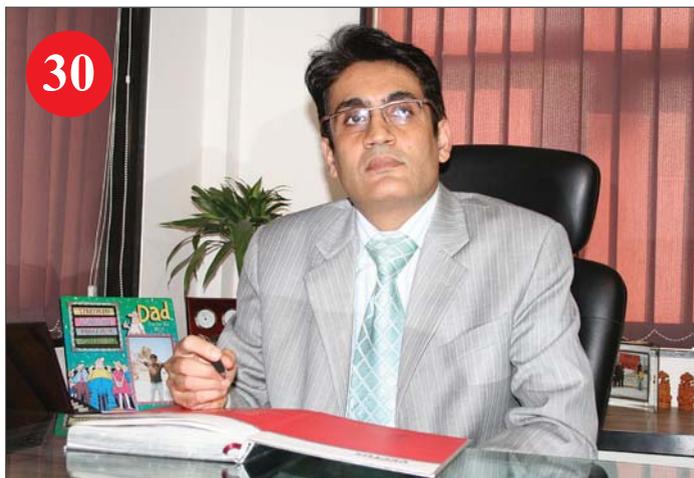
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Sheetal Group aims to achieve Rs 300 crore turnover in the next three years

Sheetal Group has announced that it has targeted to achieve a turnover of Rs 300 crore in the next three years. The company has recently launched new multi layered Sheetal King Premium water tanks. While unveiling the new multi layered Sheetal King Premium water tanks, Bharat Aggarwal, Managing Director, Sheetal Group said, "It's only due to the growing popularity of our new Sheetal King Premium water tanks that we have targeted to achieve a turnover of Rs 300



crore in the next three years. We have already built a reputation for high quality and reliability which enables us to lead the market." Sheetal King Premium Water Tanks have been made from food-grade material. Sheetal Group is also backed by a very large distribution network in the country. The company has also received certification from BIES (ISI mark). With its Corporate Office at Pitampura, Sheetal group has manufacturing facilities at 12 locations in India, and offices / depots at 13 locations in India.

SV Kabra, Chairman & Managing Director, Kabra Extrusiontechnik honoured by FICCI

Federation of Indian Chambers of Commerce & Industry (FICCI) has presented the Award for Distinguished Contribution to Plastics Industry to SV Kabra, Chairman & Managing Director, Kabra Extrusiontechnik Limited. (KET) during FICCI Chemicals & Petrochemicals Award Function of India



Chem 2016 International Conference in Mumbai. "I'm honoured to receive such a distinction, especially since it comes from FICCI - the largest, oldest and the apex business organisation in India," said SV Kabra. "I have a true passion for our industry and its people, and I'm so grateful to be recognised for my contributions for this industry." Kabra is the founder of the Kolsite Group

Of Companies – India's leading group in the field of Plastics Extrusion and is the Chairman & Managing Director of the Company. Over the last 54 years, he has been the driving force behind the growth of the Kolsite Group of Companies. He began this business in early 1960s with a clear vision and foresight of becoming the leading group for plastics industry. In 2013, he was awarded with the Lifetime Achievement Award at Vinyl India 2013 conference. He is credited with numerous significant achievements including 1. Being a pioneer in bringing new technology and machinery equipment in India, 2. Being a leader who has been instrumental in supporting & promoting India's plastics manufacturing industry at international level, and 3. For playing a key role in making collaborations with globally renowned companies in plastics extrusion segment. He is actively associated with the Indian & global plastics fraternity. He is on the management & executive councils of many reputed plastics organisations in India. Today in his late 70s, he still continues to work with great enthusiasm and wishes that the Indian plastics industry should progress consistently keeping up with the future trends and requirements.

LeEco India opens its 1st local manufacturing plant in Greater Noida

Within just eight months of operations in India, LeEco India has announced the launch of its first state-of-the-art smartphone manufacturing facility in Greater Noida, India. This swift alignment with the Government's 'Make in India' initiative is a reaffirmation of LeEco's commitment to India and its long-term plans for the country. The facility has been set up at a significant investment of US\$ 5 million and a further US\$ 2 million has been earmarked for the automation process. It has collaborated with leading electronics manufacturer, Compal Electronics to set up this facility in India.

Indian economy to rise to 7.7% in 2017: WB

According to the twice-a-year, South Asia Economic Focus released by the World Bank, India is setting the pace for South Asia as a whole. Its economic activity is expected to accelerate to 7.7 percent in 2017, after maintaining a solid 7.6 percent in 2016. This performance is based on solid growth contributions from consumption – boosted by normal monsoon and civil service pay revisions. Over the medium term, a better investment climate may help increase private investment.



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Shilip Kumar to be new President - Henkel India; succeeds Jeremy Hunter

Henkel has appointed Shilip Kumar as the President of its India business, effective June 1, 2016. Besides, steering the Adhesives and Beauty care businesses of Henkel Adhesives Technologies India Pvt Ltd (Henkel India), he will continue in his existing role of Business Director for Transportation & Metal Adhesives SBU in the India, Middle East, Africa (IMEA) region. Shilip succeeds Jeremy Hunter, who led the India business for over five years, and has now moved to Shanghai as President – Henkel China.



Based out of Henkel India's head office at Navi Mumbai, Shilip will be responsible for leading Henkel's businesses in India through its next growth phase. Shilip started his journey with Henkel in 2011 as Business Director of the Transportation and Metal SBU in India. He was at that point in time responsible for integrating the SBU's operations across 3 legal entities, including two Joint Ventures, to leverage the scale of its business in the country. He also spearheaded the India Innovation Center – Pune project for Henkel.

Indian Oil inks MoU with Praj Industries

Indian Oil Corporation Limited has selected Praj, a Pune-based global process solutions leader, as its technology partner for setting up multiple 2nd Generation (2G) bio-ethanol plants based on indigenously developed technology. Indian Oil will be setting up three such



2G bio-ethanol plants. Indian Oil, like other Oil Marketing CPSEs is blending biofuels in transportation fuels at the depot to bring down dependency on crude oil imports and to avail of the resultant economic and environmental benefits. In order to enhance ethanol availability in the country for blending with petrol, Indian Oil is developing 2G ethanol production infrastructure using ligno-cellulosic biomasses as feedstock. Speaking about the collaboration, Pramod Chaudhari, Executive Chairman, Praj Industries Ltd., said, "We have prepared ourselves to execute 2G ethanol projects over Rs.3000 crore in two-three years. Praj is offering end-to-end 2G 'Smart Bio-refinery' solutions globally. Our 'Smart Bio-refinery' is capable of producing bio-ethanol and other co-products such as bio-CNG, power and a variety of bio chemicals."

Tata Capital partners with CII for SME finance

Tata Capital, the financial services arm of the Tata group, signed a memorandum of understanding (MoU) with the Confederation of Indian Industry (CII) to partner with them in the SME Finance Facilitation Centre initiative. The initiative has been launched to facilitate easier credit access to small and medium enterprises (SME). This partnership will facilitate the distribution of Tata Capital's SME loan products through CII to its registered SME members.

Under the MoU, a framework of cooperation between CII and Tata Capital will be developed under which Tata Capital will be empanelled as a 'Partnering Institution' for the SME Finance Facilitation Centre. This will facilitate easy access to finance and credit for registered SME members of CII and provide advisory and credit facilitation support as well. Tata Capital's corporate finance division will be offering its entire suite of products to CII's SME members.

India's rank improves in Logistics Performance Index; jumps 19 places

India has now been ranked 35 amongst 160 countries in the World Bank's recently released 'Logistics Performance Index' (LPI) 2016 report titled "Connecting to Complete 2016". This is a jump of 19 places compared to the 2014 ranking. Further, in terms of the six-components of the LPI i.e. Customs, Infrastructure, International Shipments, Logistics Quality and Competence, Tracking and Tracing, and

Timeliness, India's ranking is 38, 36, 39, 32, 33 and 42 respectively.

The Logistics Performance Index Report is published by World Bank every two years. It is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance.



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ELIX Polymers cuts lead times in bid to be benchmark for ABS supply

ELIX Polymers is reducing order-to-dispatch time down to just one week for the most popular products in its ABS portfolio. Lead times for all other ABS products are being cut to three weeks. “ELIX continues to excel in its mission to distinguish itself as the industry benchmark for quality and service,” says Narcis Vidal, supply chain director at ELIX Polymers. “A previously-announced € 3 million investment in a new compounding line at the company’s Tarragona, Spain production site, along with a constant focus on optimizing processes based on “lean” management and the adoption of a new system of forecasting, has enabled ELIX Polymers to improve flexibility in production and revolutionise the service it provides” Vidal says. The new compounding line, which starts production in September, is the company’s fifth, dedicated to production of over 40 specialised ABS grades and ABS compounds in more than 300 colours. “These actions form part of the company’s mission to



ELIX Polymers cuts lead times in bid to be benchmark for ABS supply. Photo: ELIX Polymers

provide an intelligent and differentiated service in addition to tailor-made solutions for our customers,” Vidal says.

ENGEL establishes Southeast Asia hub in Bangkok

Southeast Asia is one of the most dynamic, rapidly growing markets in the world. To further strengthen its position in this region, ENGEL Austria, the injection mould machine manufacturer with headquarters in Schwertberg, Austria, has established a regional hub in Bangkok, Thailand, for its local subsidiaries and representatives. With sales and service subsidiaries in Singapore, Thailand and Vietnam, as well as several representatives, ENGEL is already very well positioned in Southeast Asia. “We are viewed as a technological leader in the region, are among the leading



As of October 1, 2016, Romain Reyre will be taking on the management of ENGEL’s newly established Southeast Asia hub in Bangkok.

regional providers for the automotive supply sector, and are experiencing a great deal of growth, especially in the area of packaging,” says Dr. Christoph Steger, Chief Sales Officer of the ENGEL group. As of October 1, 2016, Romain Reyre will be taking on the management of the new organisational unit. As President Southeast Asia, he will be responsible for the entire region. Romain Reyre can look back on 25 years of professional experience in the plastics and packaging industry. Within this time, he has lived in Europe, the United States, Latin America and Southeast Asia.

Antimicrobial additives for flexible polymer applications

The global antimicrobial market is growing due to a public demand for hygiene and a rising awareness for contamination and infections. SANITIZED AG latest innovation is a highly effective product for long-lasting antimicrobial protection for flexible polymer applications. SANITIZED AG developed a new product Sanitized PL 14-32 as a highly effective and long-lasting antimicrobial protection for flexible polymer applications. Besides thermal stability and compatibility with most formulations, Sanitized PL 14-32 provides water resistance as well as high UV resistance and no yellowing after UV exposure. It protects the material against unwanted effects of microbes, like bacteria, mold, mildew, yeast and algae – all of which can cause material destruction, unsightly stains, cross contamination, odour development and biofilm formation. Beside thermal and colour stability, the antimicrobial efficiency was checked in several formulations. The product is supported under the EU’s Biocidal Products Regulation (BPR) and the active substances are approved under the US EPA.

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BASF, Hyundai partner for high performance N concept

BASF and Hyundai Motor have partnered once again to present an impressive showcase of emotion and technical substance: The concept car RN30 was created to offer pure driving pleasure on the race track for everybody and features the latest in innovative automotive solutions – driven by BASF. It debuted on September 29 at Paris Motor Show 2016 and be presented at K Fair in Dusseldorf from October 19-26. The RN30 combines key solutions from the chemical industry with purposeful aerodynamic design and specialized high-performance technologies. BASF contributes significantly to the concept with lightweight plastics, endless possibilities in



design as well as durable and eco-friendly materials. “As the chemical industry’s largest automotive supplier, we are very proud to be a vital part of the RN30,” said Raimar Jahn, President of Performance Materials at BASF. “With our innovative materials and tailored technical services, we are supporting Hyundai Motor in developing the high-performance car of today and tomorrow.”

Dow India launches all-PE packaging solution



In the outreach event hosted at Bosch facility at Verna Industrial Estate in Salcete, Goa, P&SP team led by Mark Saurin, Commercial Vice President for Asia Pacific and Vipul Babu, presented the all-PE packaging solution, including new product offerings in India: INNATE™ and RETAIN™. “Currently, what is it that deters effective recycling and reuse of the flexible packaging that packs products, such as salt, flour, detergent and many other food products? It is a fact that this packaging uses multiple materials that are incompatible while recycling, thus impacting quality of recycled material. What would make the whole plastic waste management and recycling effort much more meaningful and economical is adoption of packaging using monomaterial to design a sustainable solution – an all-Polyethylene (PE) laminate. This enables us to make film that does not impact packaging quality or performance, but generates completely reusable material upon recycling,” elaborated Vipul Babu, Commercial Director for Indian Subcontinent, Dow Packaging & Specialty Plastics, summing up the monomaterial laminate solution for the gathering.

SABIC to sell Polymershapes Biz to Blackfriars Corp

SABIC, a global leader in diversified chemicals, has entered into a share purchase agreement to divest its Polymershapes distribution business to Blackfriars Corp., a privately-held investment company. The transaction remains subject to customary closing conditions and is expected to be completed during the fourth quarter of 2016. SABIC highlighted that this sale will have no effect on the product distribution activities of its Specialties Strategic Business Unit (SBU). Similarly, the sale will not materially impact the value of SABIC’s assets, its financial standing, or the strategic course of its businesses. The sale of Polymershapes will enable SABIC to focus on its core activities and is a continuation of the company’s ongoing efforts to assess new investment opportunities around the world.

Lanxess closes acquisition of Chemours’ Clean and Disinfect business

Specialty chemicals company Lanxess closed the acquisition of the Clean and Disinfect business of U.S.-based chemicals company Chemours on August 31, 2016. All relevant antitrust authorities have approved the transaction. Lanxess has paid around EUR 210 million for the Clean and Disinfect business, which comprises various active ingredients and specialty chemicals especially for disinfection and hygiene solu-

tions. It has financed this first post-realignment acquisition from existing liquidity. “The acquisition is the first milestone on our path of growth and a further step toward strengthening our business in North America,” said Matthias Zachert, Chairman, Lanxess AG. “The successful integration of the new business now has absolute priority so we can quickly benefit from this expansion of our specialty chemicals portfolio.”



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Aerospace plastics market size to reach \$15.7 billion by 2022



AIRFRAME & FUSELAGE APPLICATIONS ACCOUNTED FOR HIGHEST IN THE GLOBAL AEROSPACE PLASTICS MARKET SHARE IN 2015 AND MAY SURPASS 40 KILO TONS BY 2022, SAYS A REPORT. FIND OUT MORE.



Aerospace Plastics Market size may register 15.74 billion by 2022 as per the latest research report by Global Market Insights, Inc. Strong application outlook of lightweight materials in aviation industry in order to improve fuel efficiency and performance is likely to drive aerospace plastics market size growth.

The report suggests that regulatory support for aviation industry development owing to growth in freight air carriers coupled with increasing defense budgets should favour demand. Europe, led by France and Germany, aerospace plastics market size, had significant regional share in 2014 and may register over \$6.5 billion by 2022. France has number of institutions providing aviation engineering programs and aircraft companies invest over 15 percent of their turnover in research and development activities. These initiatives help provide quality workforce to France aviation industry which should favour aerospace plastics market size growth.

Airframe & fuselage applications accounted for highest in the global aerospace plastics market share in 2015 and may surpass 40 kilo tons by 2022. Aircraft frame contains high amount of carbon fiber reinforced plastics and composites making airframe lighter. Plastics usage in fuselage provides part count reductions through fasteners and integral clips usage. Commercial & freighter aircrafts dominated the end-user segment and may surpass \$10 billion by 2022. Reduced maintenance and operational costs achieved due to weight reduction have encouraged aviation industry to increase polymer content in commercial & freighter aircrafts. This factor has also shifted the paradigm of the commercial aircrafts from aluminium to aerospace plastics.

Stringent regulations coupled with environmental effect of petro-based products are expected to limit raw material availability which may affect aerospace plastics market price trend. Strong carbon fiber outlook in aviation application may hamper raw material availability. Aviation Industry has taken measures to de-

crease carbon emission by 1.5 percent till 2020 by preferring plastics than metal components. In addition, aircraft manufacturers are eyeing on development of eco-friendly composites after carbon footprint post by Copenhagen Climate Conference in 2009.

Key insights from the report include:

- Global aerospace plastics market size looks set to show over 10 percent CAGR growth by 2022.
- Cabin applications in Europe may register over \$ 1.5 billion by 2022. The seats in the cabin areas of an aircraft include a wide range of polymer moldings for products such as trim strips, decorative closeouts, arm rests, and food trays. ABS, polycarbonate and decorative vinyl are materials that are mostly used for these purposes.
- North America, with aviation industry growth in the U.S., is poised to surpass \$5 billion by 2022. Replacement of ageing aircrafts with fuel efficient ones coupled with strong military developments have assisted to drive US aerospace plastics market size growth
- APAC is poised to witness significant gains owing to increasing commercial & military aircrafts demand in China and India.
- China plays an important role in making of the 787 aircraft by developing and manufacturing rudder, wing-to-body fairing panels, panels and leading edge for the vertical fin, and various other composite parts.
- North America military aircraft plastic consumption could exceed 5 kilo tons by 2022. Increase in government funding owing to rise in defense sector may drive industry growth.
- Empennage based aerospace plastic application in Europe may grow significantly. Increasing airbus aircraft demand composite demand in empennage manufacturing. In addition, Boeing aircraft contains 70 percent plastic materials and induce comfort to passengers. 

Source: Global Market Insights, Inc





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CSP HQ. Courtesy: CSP



THROUGH THE ACQUISITION OF CONTINENTAL STRUCTURAL PLASTICS, TEIJIN INTENDS TO ESTABLISH THE FOUNDATIONS OF AN AUTOMOTIVE COMPOSITE PRODUCTS BUSINESS IN NORTH AMERICA, AND TO ACCELERATE ITS EXPANSION AS A TIER 1 SUPPLIER OF HIGH-PERFORMANCE COMPOSITES TO THE GLOBAL AUTOMOTIVE MARKET.



Japan based Teijin Ltd. has agreed to acquire Continental Structural Plastics Holdings Corporation (CSP), a leading automotive composite supplier in North America, for US\$ 825 million. CSP will become a wholly owned subsidiary of Teijin. Through this acquisition, Teijin intends to establish the foundations of an automotive composite products business in North America, and to accelerate its expansion as a tier 1 supplier of high-performance composites to the global automotive market.

CSP is a leading manufacturer of thermoset composites in the automotive industry and is the world's largest sheet molding compound (SMC) manufacturer for automakers. Since its establishment in 1969, CSP has provided leading-edge technologies in lightweight materials and composite solutions such as glass fiber



CSP Showroom. Courtesy: CSP

“We are confident that the platform for automotive composite products business we will gain through the acquisition of CSP's complementary technical expertise in thermoset composites and GFRP know-how will trigger further development of our integrated high-performance materials business, one of our key strategic fields.”

**Jun Suzuki, President and CEO
of Teijin Limited**

reinforced plastic (GFRP) for the automotive industry. The company provides full-service engineering support, and holds more than 50 patents covering materials development and manufacturing processes in composite materials formulation and design. Its Class A surfaces produced by its SMC technology have been adopted by various automakers in the US, Europe and Japan. The company has 14 facilities in the US, Mexico, France and China and approximately 3,200 employees. Teijin will benefit from CSP's established sales channels in the North American automotive market, which will enable the combined business to provide

a broader range of solutions that meet automakers' demands for weight reduction and durability, utilizing the company's thermoset composite technologies.

The combination of CSP's thermoset capabilities, especially its GFRP technology, and Teijin's high-performance composites such as carbon fiber reinforced thermoplastic (CFRTP), will help reduce weight and component count in finished products. This will in turn improve recycling efficiency and offer automakers value-added solutions that meet their requirements for more environmentally friendly components at lower cost. Teijin will also utilize CSP's European Center for Advanced Technology in France and Teijin's own composite production facilities to enhance its global development capabilities, allowing the combined business to better address the requirements of European, Japanese and Asian automakers. The automotive composite products business of the Teijin Group is targeting annual sales of US\$ 2.0 billion by 2030.

Jun Suzuki, President and CEO, Teijin Ltd, commented, “Since being appointed as Teijin's president in January 2014, I have pursued business models that help provide value-added solutions by combining and integrating our own materials, healthcare and IT technologies. We are confident that the platform for automotive composite products business we will gain through the acquisition of CSP's complementary technical expertise in thermoset composites and GFRP know-how will trigger further development of our integrated high-performance materials business, one of our key strategic fields.”

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INDIA WILL BE A FORMIDABLE PART OF COVESTRO'S GROWTH STRATEGY IN THE APAC REGION



On 1st September, Covestro, the leading global materials manufacturer, celebrated its first anniversary of successfully demonstrating its capabilities as an independent entity. Covestro which was formerly a part of Bayer Material Science officially separated from the Bayer Group last year, and has successfully established itself in the international capital market with a big stock market flotation.

Over the past 12 months, Covestro has completed a complex transformation process. Covestro's Chief Financial Officer, Frank Lutz, said the first year for Covestro as an independent entity has been busy with the materials manufacturer clocking a strong net year-on-year income growth of 51 percent.

On the occasion, he stressed upon the importance of India in the APAC growth strategy of Covestro. Lutz asserted that the recent Q2 results of the company have been satisfactory and that he was optimistic of continuing the growth in the coming quarters as well. "The continued dynamic core volume growth stood at 7.7 percent year-on-year. EBIDTA has also significantly improved by over 18 percent and all debts taken from the parent company (Bayer) have been repaid in full," he said.



India comprises roughly 20 percent of our APAC revenues and it will be a formidable part of the Covestro growth strategy in the region.

Covestro's CFO, Frank Lutz

Acknowledging the importance of the APAC region in Covestro's future growth story, Lutz reiterated that Covestro strongly believes in the APAC region; especially India which has been witnessing a double-digit growth. "India comprises roughly 20 percent of our APAC revenues and it will be a formidable part of the Covestro growth strategy in the region."

"India is a growing market and holds lot of promise. The three key industry verticals driving the growth for polymers and polycarbonates in India are automotive followed by IT and electronics and home furnishing. Automotive industry contributes approximately 25 percent of our revenues in the country. This one year of being an independent entity has helped Covestro evolve as a global manufacturer," Ajay Durrani, Managing Director, Covestro India added.



Lutz also highlighted that Covestro is increasingly anchoring sustainability at every level, and is part of the company's core values. The objective is conserving the environment, advance society and at the same time create economic value. The company has, therefore, established a series of challenging and measurable targets it wants to achieve by 2025. For example, Covestro plans to halve greenhouse gas emissions per metric ton of product produced relative to 2005.



India is a growing market and holds lot of promise. The three key industry verticals driving the growth for polymers and polycarbonates in India are automotive followed by IT and electronics and home furnishing.

Ajay Durrani, MD, Covestro India.

Many new products and ideas

Covestro is also breaking new ground when it comes to carbon dioxide. In 2016, Covestro inaugurated a new plant on stream at its Dormagen site in which the Carbon Dioxide is being used for the first time as a raw material. A CO₂-based precursor for the production of polyurethane foam for mattresses and upholstered furniture will soon make its market debut.

A perfect example of how Covestro combines sustainability and innovation can be witnessed at the K 2016, the world's largest plastics trade fair, in Düsseldorf this October. From Covestro, one highlight is a new vehicle concept intended to promote electric mobility. For the first time ever, all of the glazing is made of polycarbonate.

Covestro has also gleaned valuable insights for the further development of its products and potential new applications from the Solar Impulse mission – the around-the-world flight completed in July in an ultra-lightweight aircraft powered only by the sun.

Among other things, Covestro designed the cockpit and provided a highly efficient insulating material, without which the flight would not have been possible.

Covestro will continue to work with the Solar Impulse founders in the future to help clean technologies to achieve a breakthrough.

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✓ The Shirwal factory became a role model within Godrej factories through hybrid cluster.

Cluster development for business excellence



CLUSTERS HAVE THE PHILOSOPHY OF 'GETTING TOGETHER, LEARNING TOGETHER, ACHIEVING TOGETHER'.

By Hussain Shariyarr, Senior VP (Operations), Godrej Appliances



Over the last few years, Frankfurt International Airport has been expanding to meet passenger demand estimated to grow from 61 million currently to 70 million by 2021. To meet this growth and maintain its competitive edge, Europe's third busiest airport is looking beyond mere physical transformation. It is also gradually evolving into an "airport city"—a sophisticated knowledge-sharing and high-tech business cluster.

The German airport is using the cluster approach to attract more business travellers and conference delegates, position itself as a leading knowledge hub in the logistics and transportation industry, and transform the metropolitan area into a mega hub for business and economic growth.

The 'cluster concept' is a worldwide phenomenon. Companies in continents such as Asia, South America, Europe and North America are introducing cluster development programmes (CDP) to catapult their businesses into centers of excellence with shared values of trust and integrity.

India is no exception to this unique idea. In 1998, the government launched a programme for small and medium enterprises (SMEs) to boost interconnectivity and knowledge-sharing among companies. The schemes usually relate to technology, quality up

gradation, marketing support, and entrepreneurial and managerial development. Till date, the government has organised more than a thousand interventions in various clusters across 29 states. So far, 677 programmes have been completed. As many as 178 of these were for new build and up-gradation of infrastructure facilities.

Manufacturing cluster development

While there are many aspects to it, cluster development primarily refers to the sharing of knowledge and best practices and improved networking among enterprises across one or more sectors. It plays an important role in increasing the competitiveness of businesses, especially SMEs—through fresh insights and strategies resulting in better productivity and profits. Apart from knowledge-sharing, the other values that drive these clusters are transparency, learning, speed, adaptability, sustenance and zero tolerance. The success of cluster programmes depends on to what extent participants fulfil these and other values.

Clusters started in India within the auto industry. Generally the SMEs participated in it. These cluster programs helped building a robust supply chain for the industry. The methodology was to learn and share from each other under a mentor. It was a low cost approach compared to full time consultants.

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Plastivision India is organised by All India Plastic Manufacturer's Association (AIPMA), the largest non-profit apex body working towards welfare of the plastic industry. The event has a glorious history that dates back to 1992. Its huge success has helped it rank among of the top 10 plastic industry events globally. Plastivision India is the only trade fair exhibition from the plastic industry approved by UFI (the premier Paris-based exhibition authority).

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Structured approach

A next step to this is an organised approach which is driven by a structured, tailor-made roadmap, a methodology for implementation and a comprehensive review mechanism. Key inputs, training, and guidance are provided by a mentor, supported by counsellors.

Participating companies are required to form a cluster organisation with clearly defined roles and responsibilities. The organisation should ensure the involvement of people at all levels. There must be designated authorities like cluster CEO, coordinator, deputy coordinator and cluster officers, to take decisions and implement those decisions quickly. The cluster CEO is generally empowered to implement the outcomes. It would be in the interest of an organisation if the CEO is a role model who can inspire the team to work towards a common goal.

The cluster roadmap is not predefined and it cannot be applied randomly. It is created by the mentor in consultation with the Cluster CEOs, after assessing each company in its current state. While the roadmap is common to all companies participating in a particular cluster, care is taken to ensure that each of them benefits to the maximum. The cluster roadmap is valid for a specific period of time, usually two years. However, the duration can depend on the number of modules in a particular cluster.

Objectives of a Cluster

The underlying philosophy of a cluster is 'Getting together, learning together, achieving together'. With this philosophy as a foundation, a cluster program aims to achieve the following:

- Make factories visual and safe
- Bring total employee involvement
- Bring quality focus
- Install material flow and reduce inventory
- Greening the supply chain - zero waste, reduce carbon footprint,
- Profit improvement
- Building capabilities within employees
- Building a culture of continuous improvement, continuous learning and sustaining all improvements

Case study : Godrej Cluster Journey

Godrej Appliances, one of India's largest players in the home appliances segment was among the first few companies in India to join the hybrid cluster formed by CII in May 2010, where for the first time OEMs from different industries/sectors participated. A hybrid cluster has the potential for breakthroughs in the operation, production and distribution cycle. For example, the company benchmarks processes of companies from different industries, both manufacturing and non-manufacturing. In cross-industry benchmarking, a company engaged in, say, white goods, can adopt processes from a company dealing in heavy equipment and thrive in a new business environment.

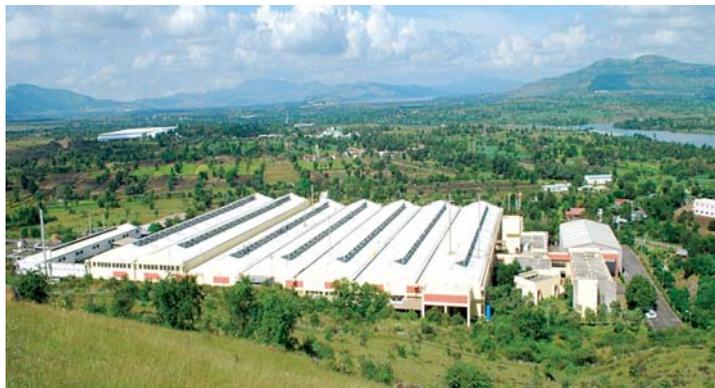


The cluster roadmap is not predefined and it cannot be applied randomly. It is created by the mentor in consultation with the Cluster CEOs, after assessing each company in its current state.

There was a lot of deliberation within the senior management around whether to join the cluster or not.

The initial thought was that even if Godrej does not gain much in terms of lean, they could still build ties with the other companies from across the industry and share and learn from each other. Once the journey began, there was no looking back. The Shirwal factory gained a lot from this journey. It underwent a transformation in terms of the 5S levels, total employee involvement and inventory levels. Lean concepts custom made for Indian culture helped understand, implement and sustain it very easily.

Besides the operational gains on the shop floor, the factory could add additional lines of refrigerators and air conditioners without adding new plant infrastructure. Manufacturing costs came down year on year. The factory became the first in India to get the Green Co Platinum award for its green initiatives. It also featured in many articles in industry magazines and publications.



The Shirwal factory became a role model within Godrej factories. Its success led to a formation of another hybrid cluster within the Godrej Group. Four factories from different businesses - electric motors division, furniture division, storage solutions and appliances formed a cluster, which ran successfully for two years.

The appliance division went further and took this concept to their suppliers. It formed clusters for its suppliers and mentored them. It treated their supplier's shopfloors as extensions of their own shopfloor. All the good practices adopted during the first and second cluster were deployed at the suppliers' end. This has not only helped suppliers achieve operational excellence but also helped them gain new businesses from different sectors.

This is how the cluster movement spread across Godrej, imbibing the underlying philosophy of getting together, learning together and achieving together and living the company's value 'to serve' and take everyone along. Strengthening the supply chain at each level through the cluster journey- especially when it is done across sectors, is sure to make a huge difference to the manufacturing sector in India as well as the 'Make in India' vision.

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19 - 26 October, Dusseldorf, Germany

Constantly working towards expansion: A key to success



ABHISHEK JAIN, EXECUTIVE DIRECTOR, PPAP AUTOMOTIVE LTD SPEAKS TO ET POLYMERS ABOUT THE COMPANY'S PAST, PRESENT AND FUTURE.

By Swati Deshpande

Please tell us about PPAP Automotive's journey so far.

The company was originally incorporated in the year 1978 to manufacture custom made extrusion products. We commenced the automotive parts business in the year 1985 with the start of production of the first Maruti cars in the Indian market. The firm was converted into a public limited company in 2008.

Today, we are a leading manufacturer of automotive sealing systems, interior and exterior injection moulded parts. We are currently working with three Japanese companies for our technology requirements. For the sealing system we work with a Japanese Company called Tokai Kogyo. We have a very long and healthy relationship with them, spreading over more than 25 years now. They own a small equity of our company and in 2012 we have also set up another company with them which a joint venture company having equal equity partnership to further enhance our product range for our customers. We have started a relationship in 2015 with their sister company to produce special



toolings as well.

For the interior and exterior injection moulded products, we are working with Nissen Chemitec Corporation, Japan, and Ichimiya Group Company. The relationship started in 2007.

With our technology partners, we continuously work together to enhance the capabilities of local operations and our endeavour is to provide continuously better value of products and services to all our customers.

Over a period of time PPAP has expanded its customer base and today supplies parts to most of the passenger vehicle manufacturers in India viz. Suzuki, Honda, Toyota, Renault Nissan, Isuzu, Tata Motors, GM and Mahindra & Mahindra. Today we manufacture over 500 different products for our customers and continuously target to achieve zero PPM in quality and delivery performance for all our customers.

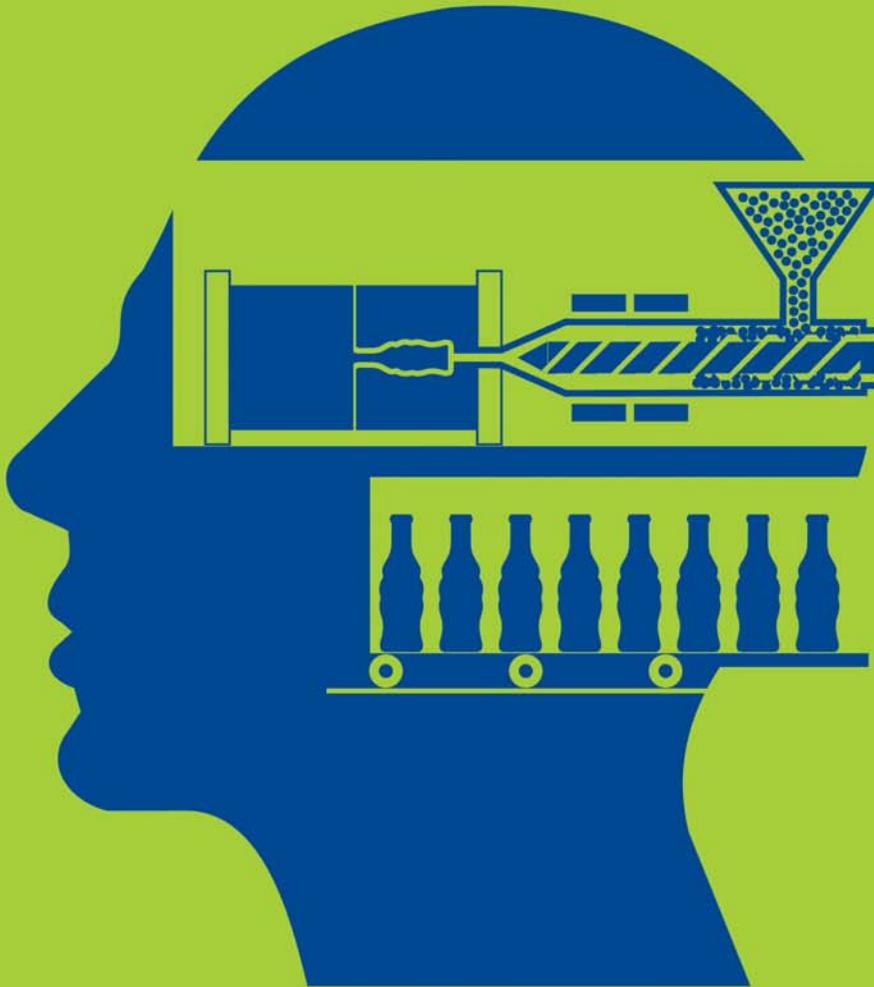
Can you please elaborate on manufacturing capabilities of PPAP Automotive?

PPAP is a leading manufacturer of automotive sealing systems, interior and exterior injection moulded automotive parts in India. The company's state-of-the-art manufacturing facilities are located in Noida (UP), Greater Noida (UP), Chennai (Tamil Nadu) and Pathredi (Rajasthan). All the plants are TS 16949, ISO 14001 and OHSAS 18001 certified. All the facilities are equipped with the latest technology available today for plastic extrusion as well as injection moulding.

The Automotive Sealing Systems are manufactured by the continuous Extrusion process. The company has Extrusion lines which are capable of processing Engineering polymers like PVC, PP, TPO, TPE and TPV materials. The company has Co-Extrusion facilities which are capable of extruding up to 4 different hardness materials into a single profile based on the customer's requirements.

The company also has Injection Moulding machines ranging from 60 to 2500 tons. The company continuously focuses on acquiring the latest technology like Servo controllers, Electric ma-





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chines, QMC, Magnetic platen etc. to give a quality and cost effective product to the customer. These machines have been sourced primarily from the leading manufacturers in the world like Toshiba, JSW, Fanuc, Mitsubishi, Toyo, Nissei etc. The company has also invested in Robotic Assembly technology for the assembly of the products.

The company also has a captive tool manufacturing facility which caters to the in house requirement of all tools, fixtures, moulds and dies required by the company.

The company also has EPDM Rubber Extrusion lines and TPV Glass Run Channel line in its Joint Venture Company. All the lines are fully automated and use the best and most cost effective technology.

Please tell us about some of your products that are leading the market.

We make two kinds of products, the first kind of product are the body sealing system. These include Outer belts, Inner belts, Roof mouldings, Windshield moulding, Skirt air damper, Trim door openings and Weatherstrip Partition. These products are made from plastics and thermoplastics. The basic function of all these products is to seal the vehicle from any water, dust, air or noise so that the passengers sitting inside the vehicle have a comfortable ride.

The second kind of products that we manufacture are interior and exterior injection products. These parts are meant for the aesthetics and for functional purpose. We make parts like the complete inside door lining, pillar garnishes, rear tray assemblies, trunk linings, wheel fenders and side protectors.

Light-weighting is one of the trends that can be observed in the automotive industry. How do you see this trend getting popular in India. What new products/solutions has the company introduced in this regard?

Light-weighting is one of the key trends in the automotive industry and efforts are being made to make the vehicles lighter for achieving better mileage, while retaining all safety parameters.



Light weighting is one of the key trends in the automotive industry and efforts are being made to make the vehicles lighter for achieving better mileage, while retaining all safety parameters. The company is continuously evaluating new materials as well as new design of the products to promote weight reduction.

The company is continuously evaluating new materials as well as new design of the products to promote weight reduction.

Use of plastic is increasing in the automotive industry. On this background, how do you see demand for plastic made auto parts growing in the Indian market in coming few years?

Engineering Plastic material offers many advantages over conventional steel materials. It is easy to mould in any shape and can offer almost similar performance in terms of strength and performance, at

the same time, reducing the overall weight of the vehicle. This in turn promotes good mileage of a vehicle. The use of plastic is increasing in the auto parts industry. Conventional products like exhaust manifold and fuel tanks are also getting converted to plastic material.

What competitive advantages do the company's products offer to its customers?

PPAP is an integrated operation having infrastructure and capabilities right from stage of part designing to their mass production. We have 40+ strong design and development team having access to the latest software, which engages with the customer right at the initial stages of a new car model design. We also have an in-house Tool Room where we can develop and make tools and dies used in the manufacture of parts. We also have a very well-endowed testing facility where a range of tests can be undertaken on both raw materials as well as parts. We have state of the art manufacturing facilities which offer best in class technologies.

Kindly tell us about the exports of the company.

We are exporting our products through our customers in India like Nissan, Honda and Toyota. The countries where CKD parts exported are Japan, Europe, Mexico, Brazil, Venezuela, Argentina, Thailand, etc.

'Make in India' seem to have given a boost to the Indian

manufacturing industry, which was facing a sluggish market environment previously. How has been last couple of years for your company?

We strongly believe in the manufacturing capability of the Indian industry. There are certain roadblocks towards it, but we strongly believe that the Government is working on all fronts to ensure that India remains a competitive manufacturing base.

In the last couple of years, our company has added two new facilities. One in Chennai and other one in Pathredi. Apart from these we have added capacity in our existing facilities as well. Going forward, we will continue to focus on adding new manufacturing facilities depending on the requirements from our customers.

What new trends do you see in the Indian automotive industry?

The Indian automotive industry is one of the most challenging industries in the world. The customer expectations are changing and due to the easy access to internet and information, today the end user is very well informed about the choices available.

This fact is driving a lot of changes in the automotive in-



The vehicles will be getting more fuel efficient; the interiors of the car will have more technology and ultimately go towards a connected car concept. The government is promoting the use of clean fuel cars. We see a strong focus on developing Hybrid or Electric cars by many automobile companies, in the near future.

dustry. The vehicles will be getting more fuel efficient; the interiors of the car will have more technology and ultimately go towards a connected car concept. The government is promoting the use of clean fuel cars. We see a strong focus on developing Hybrid or Electric cars by many automobile companies, in the near future.

Lastly, please tell us about your expansion plans

We are constantly working towards expanding our product base and our customer portfolio. Our endeavour is to provide customers with a superior value

added solution for their vehicles. We are constantly interacting with the customers for new avenues where we can add value to them. We are also looking at expanding the target customer by examining opportunities in the Non Passenger Vehicle segment viz. LCV market, etc. We are also investing in upgradation of technology in our existing plants so that we can become more competitive for our customers. We are also adding new capacities in Chennai in order to service our customers in Southern India. We are also deciding on our strategy to set up capacities in Gujarat since the new Auto hub is emerging in that area. ☺

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By Niranjan Mudholkar

Vectus Industries is a fairly young company. Briefly tell us about your journey so far.

I and Atul Ladha, the promoters of Vectus Industries Ltd are the first generation entrepreneurs. However, the history of Vectus Industries dates back to 1990 when I started my first water tank manufacturing capacity in Uttar Pradesh and Atul started his at Gwalior in 1991. While I focused primarily in expanding in U.P. and North India, Atul went on geographical expansion and established Rotomoulded units in Gwalior, Raipur, Bhopal and Jaipur. Later in the year 2004 both of us joined hands and established Vectus Industries on the back of the marketing strength that they both had gained during the last two decades.

Plastic piping segment was also witnessing a tremendous growth at that time and hence we decided to diversify into plastic piping business under the Vectus brand. We had already generated immense goodwill in the market by our water tank business and so, it was not difficult to sell the products in the same distribution network. Gradually, in addition to the existing water tank

“ The total net turnover of Vectus Industries Limited was Rs.555 crore in FY16. The Company is highly optimistic for its growth in FY17 and in anticipation we have also added new capacities in pipes and water tanks at Gwalior, Trichy and Rajasthan. ”

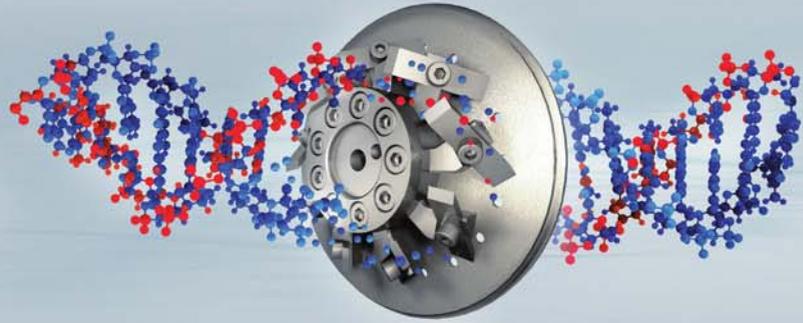
business we kept on adding new piping products – PVC, CPVC, PPR, Composite, HDPE etc. under the wide umbrella of Vectus Industries and simultaneously witnessed tremendous growth rate of 30-35 percent for the next couple of years.

In 2008, we came in contact with an indigenous machine manufacturer who used to manufacture blow moulding machines of lower capacity. I and Atul then formulated the idea of using blow moulding techniques for manufacturing water tanks of the capacity greater than 200 litres. Although, the idea was a risky

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proposition but both agreed to take the risk and with a spirit of innovation and enthusiasm we introduced for the first time in Asia a new technology — ‘the blow moulding process’ for manufacturing water storage tanks ranging up to 2,500 litres.

Later in 2013, we inked a technical collaboration deal with Flotek, a Turkish Company. With the help of Flotek, we built up the capacity to product Euro standard manholes/sewerage systems and underground water tanks. This collaboration positioned Vectus as one of the few companies with domestic production and execution capabilities in the said space. In the same year, Vectus Industries ventured outside India and entered into a joint venture with local partners to manufacture water tanks under the brand name of ‘Vectus’. With aggressive business expansion plans in mind, Vectus went a step ahead in 2014 and secured a private equity funding of Rs.100 crore from a South East Asian fund.

Today, Vectus is one of the leading companies in India involved in processing of all major polymers like Polypropylene, Polyethylene and PVC by using all major technologies like extrusion, injection molding, blow molding and rotational moulding. The company’s products are available under the brand names ‘Vectus’, ‘Ganga’ and ‘Waterwell’.



Vectus has a total of 12 manufacturing facilities in eight states in India processing approximately 75,000 Mt of polymers annually. The capacity utilisation of tanks is approximately 66 percent whereas that of pipes and fittings would be approximately 70 percent.



Atul Ladha, co-founder of Vectus Industries

Tell us about the various product categories that you have presence in.

Vectus Industries is primarily involved in manufacturing of PPR Piping Systems, CPVC Piping Systems, PVC Pressure Piping, Multi-Layer Composite Piping System, SWR Piping Systems, Rotational Moulded & Blow Moulded Water Tanks, Polyethylene Manholes & underground water tanks and various kinds of plastic moulded articles for agricultural and household purposes.

What was your annual turnover in the last FY and what are your projections for the current fiscal? What kind of growth are you looking at in the next two years?

The performance of FY16 was slightly subdued due to overall sluggish market and economic conditions. Still, the total net turnover of Vectus Industries Limited was Rs.555 crore in FY16. The Company is highly optimistic for its growth in FY17 and in anticipation we have also added new capacities in pipes and water tanks at Gwalior, Trichy and Rajasthan. Vectus Industries aims to achieve net sales of Rs.700 core in FY17. For the next two year, the sales growth of the company is expected to be in the range of 22-23 percent p.a.

The ‘Pradhan Mantri Krishi Sinchayee Yojana’ (PMKSY) will have an outlay of a whopping Rs.50,000 crore over a period of five years (2015-16 to 2019-20) for various irrigation projects. What does this mean for companies like Vectus Industries?

The PMKSY will undoubtedly provide major boost to various irrigation projects for the growth of agriculture sector which will further provide significant push to Agri Pipes segment. Though Agri Solution was also a part of our portfolio, Vectus Industries has been primarily in plumbing solutions. In 2015, the Company had set up a new PVC piping capac-



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Today, Vectus is one of the leading companies in India involved in processing of all major polymers like Polypropylene, Polyethylene and PVC by using all major technologies like extrusion, injection molding, blow molding and rotational molding.

ity at Gwalior which would manufacture Agri pipes, column and casing pipes.

Currently, what is the respective size of the pipes and fittings market and the water tank market in the country? How much would be your share in each of these markets?

Both these segments are highly fragmented as majority is in the unorganised sector. In the water storage tanks segment, Vectus is the second largest national leader with 6-10 percent of the total market which includes both organised and unorganised sectors. In the pipes segment, with 1-2 percent share of the overall market, Vectus is one of the fastest growing pipes manufacturers.

Tell us about your manufacturing capabilities and capacities? How much of your capacities are you utilising currently?

Vectus has a total of 12 manufacturing facilities in eight states in India processing approx 75,000 Mt of polymers annually. The capacity utilisation of tanks is approximately 66 percent whereas that of pipes and fittings would be approximately 70 percent.

Continuing from the above, tell us about your R&D activities? How important is innovation in your journey?

Vectus Industries is following four pronged strategy to drive future growth - 1. Product innovation, 2. Capacity expansion, 3. Focus on quality products, 4. Increased penetration through branding.

Product innovation has always been at the core of the company which is driving its growth. Vectus is the first company to introduce blow moulding technology for water tank manufacturing in the world. Moreover, the Company has always been in-

novative and have kept on adding new products in its portfolio.

Starting our journey of innovation in 1989 with Roto Moulded Tanks, we diversified into Pipes Business (PPR & PVC) in 2004. In the year 2009, we started manufacturing Blow Moulded Tanks and other Moulded Product. Later in 2010, we ventured into CPVC Pipes and in 2015 we started manufacturing four layer Tanks. In 2016, we have also entered column and casing pipes manufacturing. Still, we have a large number of innovative products on our radar which we plan to roll out soon.

What is your approach to quality?

Quality is another growth driver of our Company. Vectus is committed to deliver high quality products to its customers. We always produce such products that meet and exceed our customers' expectations. Customer satisfaction is the only motto of our Company.

What is your take on our PM's 'Make in India' initiative? What are the challenges and opportunities for your industry?

The honourable prime minister's 'Make in India' initiative is a wonderful program which apart from increasing exports, opens huge investment opportunities in India, besides generating greater employment and boosting the economy. The initiative is also expected to help in providing ease of doing business by eliminating redundant policies and bureaucratic practice

The key challenges that the industry is facing currently is the competition from the unorganised sector. Today, the tank industry is highly fragmented with 65-70 percent of the market segment is in the hands of the unorganised sectors which resorts to various means of tax evasions and unlawful activities. The Government's initiative of launching GST will have a positive impact on the industry which is expected to curb these unlawful activities going forward.

Are you also looking at the exports market?

No, currently we do not have immediate plans for exports.

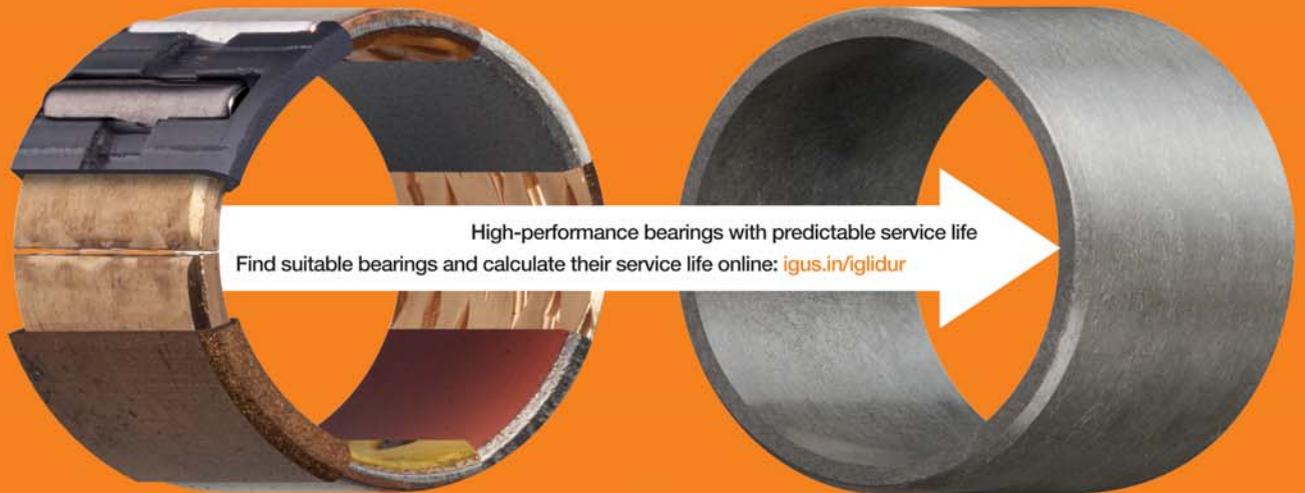
What is your personal vision for this organisation?

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Exploring new horizons



NITIN AGGARWAL, CEO, PRAYAG POLYMERS PVT. LTD. SAYS THAT HIS VISION IS TO BRING MORE AND MORE INSPIRING PRODUCTS

By Niranjana Mudholkar

Prayag started its journey in the year 1986. What have been the highlights of this journey and are you satisfied with the progress so far?

Starting our journey in 1986, we have been constantly exploring new horizons and hence today Prayag has a wide spectrum of products ranging from top-of-the-line Stainless Steel Sinks and a host of Sanitary & Hardware products. In our quest for superior plastic products, we pioneered the revolutionary PTMT SYMET “Polytetra Methylene Teraphthalate” a form of synthetic metal bonded with exceptional properties of synthetic and metals, which offers a very high quality of faucets, showers, sinks and hardware products.

Our progress has also been exceptional, as with each passing year, Prayag touched new heights of popularity. Even during 1989 to 2001 Prayag also offered free products to certain institutions to analyse the viability and performance of its PTMT taps and its products came out to be a huge success. All these products widely accepted with special features of being leakage proof, theft proof, reliable and economical. Gradually, apart from supplying our products in general market, we also undertook various projects for railway authority, airport authorities as well as municipal corporation (MCD) Delhi. Later, there was no looking back for us with PTMT’s success with brands like CPWD, Indian Railways, Defence, N.T.P.C., BHEL, SAIL, ONGC, State PWD’S, BSNL, Defence Ordinance Factories etc.

Tell us about the various product categories that you have presence in and what would be your market share in India in these respective segments? What are the growth drivers in these segments for you?

Prayag is the first company in India to introduce faucets and taps in 316 stainless steel, which have an edge over Brass faucets and taps. Increased market demand and wide acceptability compelled Prayag to expand its product range from 200 products to 2500 today. With over two decades of strong forte in PTMT and CP bath and kitchen fittings and accessories, Prayag is one of the leading players with varied product range of Faucets, Stainless Steel Kitchen Sink, Flush Cistern, Seat Cover, UPVC and CPVC Pipes, fittings and other accessories. Exceptional quality and superlative performance are the two biggest growth drivers of our product line in these segments.

Tell us about your manufacturing capabilities and capacities?



How much of your capacities are you utilising currently?

Equipped with state-of-the-art technology, Prayag’s manufacturing plant is based at Bhiwadi and it is spread over 12000 sq m with total covered area of 200,000 sq. ft. Our capacity utilisation depends on market demand and on scheduling production for the most efficient use of our manufacturing capabilities. We follow a structured approach to capacity planning which lets us determine when we need to expand capacity to satisfy increasing demand for our products.

Continuing from the above, tell us about your R&D activities? How important is innovation in your journey?

Our manufacturing plant is equipped with latest technology and supported with proficient R&D team which keeps on working on the development of new product line as per market demand. Innovation is the lifeline of any consumer centric business like ours.

What is your approach to quality?

At Prayag, we are committed to create best quality products which create an immense level of satisfaction in the minds of the customers. We put it this way as well, “bring home the luxury personified with Prayag.”

Your personal vision for this organisation?

My vision for Prayag is to bring more and more inspiring products which offer an aesthetic value to the interiors and that our innovative products should always be created with finest designs and quality. 📍

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Significant energy savings!



A LEADING PROVIDER OF PRODUCTION EQUIPMENT AND SERVICES FOR LIQUIDS IN PET HELPS NESTLÉ WATERS TO ACHIEVE WORLDWIDE ENERGY SAVINGS EQUIVALENT TO SHUTTING DOWN 20 OVENS

As the result of a worldwide energy-saving programme, Sidel has supported Nestlé Waters in achieving reductions in its energy consumption at production sites in countries around the globe. Consequently, the world's leading producer of bottled water has achieved energy savings equivalent to the consumption of more than 20 ovens, representing savings of more than one million euros a year.

Nestlé Waters first undertook the conservation programme in 2010 when it challenged its long-term supplier, Sidel, to rationalise the energy consumption of all its production equipment. With over 96 production facilities situated in 35 producing countries around the world, Nestlé Waters naturally places a high priority on improving the environmental performance of its processes, as well as keeping its operating costs to an absolute minimum.

Sidel, the leading provider of production equipment and services for liquids in PET, has worked with Nestlé Waters for over 50 years. The companies recently celebrated this landmark milestone in their lengthy collaboration. This relationship has resulted in many important and significant developments within the beverage industry.

Focus on blow moulders brings significant energy-savings

Both companies were already well aware that blow moulding machines generally account for as much as 70 percent of the total energy consumption of a complete beverage bottling line. When

“As we achieved around 20 percent in energy savings, we were really satisfied with the performance resulting from the upgrades to the first two blowers. So much so, that based on these results, we decided to apply a full Eco-programme to share those best practices on all of our blowers worldwide.”

Stephane Bosshart, Corporate Chief Engineer at Nestlé Waters.

charged with reviewing the efficiency of the company's electrical energy usage, Sidel started by carrying out a pilot Eco audit on two of Nestlé Waters' blow moulders.

After monitoring and measuring the electrical consumption of the blowers, Sidel identified corrective energy-saving measures to Nestlé Waters. One such recommendation was the installation of oven-top reflector lamps to maintain energy in the ovens of the blow moulding machines. This achieved a reduction in the electrical power consumption required for the preform heating process equivalent to turning off 20 preform ovens. Despite this significant energy saving, optimal performance is maintained.

Nestlé Waters was particularly pleased with results attained by the recommendations when they were implemented. “As we achieved around 20 percent in energy savings, we were really satisfied with the performance resulting from the upgrades to the first two blowers,” explained Stephane Bosshart, Corporate Chief Engineer at Nestlé Waters. “So much so, that based on these results, we decided to apply a full Eco-programme to share those best practices on all of our blowers worldwide,” he continued.

Global deployment of energy-saving programme

In close collaboration with Sidel, the energy conservation programme was deployed in all Nestlé Waters' plants worldwide. Local Sidel Services™ teams planned and supplied all the necessary resources for the different interventions at sites in over 30 countries. They also provided technical support for the project. By the end of 2015, nearly 130



Sidel blow moulding machines were successfully converted with the oven-top reflector lamps. All of them will have given a return on investment (ROI) of between six and 24 months.

“The upgrades of oven-top reflector lamps have achieved real improvements,” comments Eric Baronnet of Nestlé Waters. “For example, they have delivered a reduction in the use of blower energy in US plants of up to 25 percent.” Advances such as those achieved in the US all contribute to an annual saving of over a million euros in Nestlé Waters’ plants worldwide.

A combined sustainable approach

Both Nestlé Waters and Sidel are fully committed to achieving outstanding energy savings and contributing to improvements in the environmental performance of products. Working on a continuous sustainability improvement plan, Sidel classifies its production lines according to energy consumption. The company also analyses the reasons for potential waste of energy within the whole blow moulding machine, including the oven, the compressor and the chiller.

With Nestlé Waters, Sidel has again collaborated to develop an energy-saving simulator in order to rate the blowers in terms of consumption and to enable solutions to optimise performance.

A long and successful relationship

The history of the Nestlé company began in 1866 when the Anglo-Swiss Condensed Milk Company opened Europe’s first condensed milk factory in Cham, Switzerland. The following

“The upgrades of oven-top reflector lamps have achieved real improvements. For example, they have delivered a reduction in the use of blower energy in US plants of up to 25 percent.”

Eric Baronnet of Nestlé Waters.

year saw Henri Nestlé develop a breakthrough in infant food and in 1905 the company he founded merged with Anglo-Swiss to form what is now known as the Nestlé Group. Nestlé Waters was created in 1992 and became the largest bottled water brand in the world in 2008. The company currently boasts 52 unique brands. Those include Nestlé Pure Life, Perrier and S.Pellegrino, all of which are among the many brands to benefit from the close relationship of more than 50 years between Nestlé Waters and Sidel. For instance, Sidel has been involved at every stage of Vitel’s development since its commercial production, including the re-design of its distinctive ribbed bottle from a square to round shape. Sidel also worked with Perrier to validate the design of its first-ever PET bottle, providing a range of equipment still being used for the iconic brand, which is widely exported around the world. 

Source: Sidel



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Indian aerospace industry to fly high



RANJAN SEN, MANAGING DIRECTOR, TRELLEBORG SEALING SOLUTIONS INDIA SPEAKS TO ET POLYMERS ON THE INDIAN AEROSPACE INDUSTRY.

By Swati Deshpande



“The Make in India initiative, coupled with the Government’s emphasis to bring in private technology players in the aerospace segment, has given a much needed boost to this segment.”

Please tell us about Trelleborg India’s operations emphasising on the aerospace business of the company?

Aerospace is one of the strong areas of Trelleborg Sealing Solutions (TSS) worldwide, with almost all major OEMs being our customers, and a sunrise segments in India. As the ‘Make in India’ movement gains momentum, we see significant impact in this segment. It’s always been our priority to deliver world-class products to the customers in India matching our footprint in the Global aerospace industry. This is an area where performance is the key and we thrive under such situations. TSS has already established a formidable footprint in the aerospace industry in India and our seals are used in helicopters, aircraft aggregates as well as in sealing applications of space launch vehicles. In fact, TSS featured on the

Mangalyaan project and also is one of the sealing partners for the satellite launch vehicles.

Tell us about your manufacturing capabilities in India.

TSS has invested constantly in India. As a result of these prudent investments over the years, we now have a state-of-the-art facility in Bengaluru, which manufactures plastic & elastomer products. These products serve the exacting needs of capital intensive industries like agriculture, aerospace, automotive, fluid power, oil & gas as well as the OHW and construction sectors. The products of the Bengaluru plant meet Trelleborg’s global quality standard and is certified for many critical industries & applications. Most of the products are exported to customers in Europe and the USA through Trelleborg Sealing Solutions distribution centres worldwide.

According to you, how is the Indian aerospace market doing and where do you see it in next five years?

The Make in India initiative, coupled with the Government’s emphasis to bring in private technology players in the aerospace segment, has given a much needed boost to this segment. New investments & tie ups plans have set the first phase for the advancements. While some of the plans will take time to reach the implementation phase, we are sure to witness an intense activity in the next five years. Our local manufacturing

skills along with the design expertise of the leading names is sure to create a significant impact on this quality as well as cost-conscious segment. That day is not far off when Indian products will feature in Boeing and Airbus aircrafts as critical equipment.

How important is the role of polymers in the aerospace industry?

The role of polymers is very critical in the aerospace industry especially when seals are an integral part of components like engine, landing gear, wheel, brakes & flight control. It’s important for us to provide the best solutions that meet the different working requirement of these components. Trelleborg Sealing Solutions innovates to develop material that performs exactly as per the criti-

cal needs of the industry. As we all understand, there can be no chance of error when one is flying 30,000 ft above the sea level. These seals have to perform at sub-zero conditions every time an aircraft takes off and are subjected to very harsh atmospheric conditions.

Can you please tell us about one of your latest innovations in plastics that is wholeheartedly accepted by the aerospace industry?

Trelleborg Sealing Solutions recently developed a new seal material like Turcon M12, Turcon T19, and Turcon M30. Turcon M30 stands out to great extent with higher extrusion, deformation and wear resistance specifically to work on the new surface finishes such as HVOF (Tungsten Carbide) that are new replacing the traditional hard Chrome coatings, due to the REACH demands for environmental friendly processes. It has proven its uniquely long service life in Primary flight controls on the A350 and the B787, and well as in several Main Landing Gear shock struts.



How important is R&D for your company? Can you tell us more about Trelleborg's polymer laboratory?

Innovation is one of the core values of our company, almost 2 percent of the turnover is spend on R&D. Keeping in mind the performance criticality of the aerospace segment, Trelleborg has invested a significant amount of its R&D resources specifically on this segment. We have just commissioned a Primary Flight Control Seal Test Bench that will enhance your capabilities in this field. It will enable us to develop and test the next generation sealing systems - Sealed for life hydraulics! 

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Expanding its portfolio!



A SPECIALTY CHEMICALS COMPANY ANNOUNCED PLANS TO ACQUIRE A US-BASED GLOBAL PROVIDER OF HIGH-QUALITY FLAME RETARDANT AND LUBRICANT ADDITIVES.



Lanxess, the specialty chemicals company has announced plans to acquire US-based Chemtura Corporation, one of the major global providers of high-quality flame retardant and lubricant additives. With the largest acquisition in its history, Lanxess is building on its own additives portfolio and will become one of the world's major actors in this growing market.

The companies have signed a definitive acquisition agreement. Under the terms of the agreement, Chemtura shareholders will receive US\$ 33.50 per share in cash for each outstanding share of common stock held, which represents a 18.9 percent premium to the stock's closing share price of US\$ 28.18 on September 23, 2016. The transaction with an enterprise value of approximately EUR 2.4 billion will be financed by Lanxess mainly through senior and hybrid bonds, as well as from existing liquidity. The transaction, which is expected to close around mid-2017, is subject to approval by Chemtura shareholders, required regulatory approvals and certain other customary closing conditions.

Headquartered in Philadelphia, Pennsylvania, Chemtura has 20 sites in 11 countries and approximately 2,500 employees worldwide. The company reported sales of around EUR 1.5 billion in the last four quarters with EBITDA pre exceptionals of approximately EUR 245 million (EBITDA margin of approx. 16 percent). Approximately 45 percent of Chemtura's revenue is generated in North America. In addition to additives, Chemtura's portfolio includes urethanes and organometallics.

"With this acquisition, we are forming a champion in the field of additives and are strengthening our already profitable portfolio," said Matthias Zachert, Chairman of the Board of Management of Lanxess AG. "Through the acquisition, we are



With this acquisition, we are forming a champion in the field of additives and are strengthening our already profitable portfolio. Through the acquisition, we are further implementing our strategy to become a more resilient and profitable chemical company.

Matthias Zachert, Chairman of the Board of Management of Lanxess AG.

further implementing our strategy to become a more resilient and profitable chemical company. We are significantly building on our competitive positioning in medium-sized markets and increasing our presence in North America. Lanxess is taking a next and major step forward on its growth path."

"The transaction provides premium value to our shareholders and benefits our customers and employees by making Chemtura part of a much larger, stronger global enterprise with the resources to fully support a more diverse suite of specialty chemicals products and services," said Craig A. Rogerson, President, Chief Executive Officer and Chairman of the Board of Chemtura.

For Lanxess, the acquisition of Chemtura will be accretive to earnings per share (EPS) in the first fiscal year, with annual synergies of approximately EUR 100 million expected by 2020.

Lanxess is paying an EV/EBITDA multiple of approximately 7x including synergies for this transaction, meeting its target of 7-9x for acquisitions including synergies.

Chemtura's two additive segments form the main pillars of the company's business. Both will, together with Lanxess' Rhein Chemie Additives business unit (ADD), form the new Performance Additives segment after the closing of the transaction. ADD already offers a wide range of specialty additives and service products for the plastics, rubber, lubricants and colorants production,



and employs around 1,600 employees worldwide at more than 20 locations. "Additives is a very attractive business field in specialty chemicals. In addition to their relatively low capital intensity, they require strong expertise and enable customized solutions. In this area, both Chemtura and LANXESS have long-standing expertise," said Anno Borkowsky, head of the LANXESS business unit Rhein Chemie Additives.

The first pillar of Chemtura's additives business includes lubricant additives and synthetic lubricants for industrial applications, such as in power generation and aviation. "Chemtura holds a competitive position in industrial lubricant additives. Moreover, Chemtura manufactures the necessary precursors and intermediates. Combined with our own additives portfolio, we will be a major supplier for industrial lubricants and will further strengthen our competitiveness through our integrated value chain," explained Borkowsky. Lanxess expects the industrial lubricant additives market to grow at an annual rate of three to four percent in the medium term, primarily driven by steadily increasing requirements with respect to the performance and environmental sustainability of lubricants.

The second pillar is mainly comprised of the brominated flame retardant additives, elemental bromine and further bromine derivatives businesses. Brominated flame retardant additives are used because of their high effectiveness, especially in the construction industry for insulation and in the electronics industry. Chemtura is a major supplier of bromine and brominated

products and is well positioned due to its backward integration. "Flame retardant requirements continue to rise mainly due to the trend for energy-efficient construction," said Borkowsky, adding, "With this acquisition, we will become a major global supplier of high performance flame retardant additives. In the future, we can offer our customers brominated and phosphorous-based products from one source." Rhein Chemie Additives already has a competitive position in the phosphorous-based flame retardants business and features a backward integrated value chain. Lanxess also expects medium-term growth rates of three to four percent per year in the field of flame-retardant additives.

Chemtura's urethane business is a major provider for hot-cast prepolymers and for special, aqueous urethane dispersions and polyester polyols. These are components for special polyurethanes, which are used mainly in the construction, mining, oil/gas, sports and electronics industries. For example, rollers for conveyor belts and roller skates are manufactured from these polyurethanes. The urethanes business will be integrated into Lanxess' High Performance Materials segment, in which the high-tech plastics business is anchored.

Chemtura is counted among the major companies worldwide in organometallics. Organometallics are chemical compounds that are used, among other things, as catalysts in polymer production and for synthesis of fine chemicals and pharmaceuticals. This business will in the future be part of Lanxess' Advanced Industrial Intermediates business unit. 

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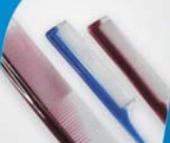




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Bigger... Better... Broader...

PLASTIVISION INDIA 2017 IS JUST AROUND THE CORNER AND WITH EVERY INCH OF EXHIBITION AREA SOLD OUT ONE YEAR IN ADVANCE, THE ORGANISERS ARE BRACING THEMSELVES FOR MAKING IT REALLY BIG AND EXPECTING 2 LAKHS VISITORS. **KAILASH B. MURARKA**, CHAIRMAN, PLASTIVISION INDIA 2017 SPEAKS TO ET POLYMERS ABOUT THE EVENT, ITS HIGHLIGHTS AND NEW CHALLENGES. READ ON TO KNOW MORE...



F 19-20-21-22-23 JAN 2017 MUMBAI, INDIA

Crunching numbers

1500 exhibitors
 Participation from 25 countries
 8 country pavilions
 90,000 sq mtr area
 Over 2,00,000 business visitors expected
 Expected business generation worth Rs. 2,000 cr

By Swati Deshpande

A

gathering of the global plastics industry under one roof. That's how we can describe Plastivision India 2017, one of the largest trade fairs for the plastics industry in India. It is organised by The All India Plastics Manufacturers' Association (AIPMA). As many as 1,500 exhibitors are expected to showcase their products and solutions for five days from January 19-23, 2017. With this massive number of exhibitors, we exactly get an idea about scale of the show. No wonder that it has emerged as one of the top five trade fairs for the plastics industry in the world.

The 10th edition of Plastivision India is going to be held at



Mumbai is considered as Plastics Hub of the Western India. Moreover, it is globally as well domestically well-connected city. Hence this turns out to be the right venue for the upcoming edition of the show.

Kailash B. Murarka,
 Chairman, Plastivision India 2017

Pavillions at Plastivision 2017

- **Plastiworld** – A focused pavilion for finished goods. This pavilion showcases processed plastic products manufactured by India's leading exporters. Visitors can explore a massive display of finished products and perform one-on-one business transactions with the exporter.

- **Automation & Robotics** – Display of innovation in automation engineering

The scope of the pavilion includes auto-mode activation, virtual simulation, digital manufacturing and sustainable manufacturing are the latest practices that impact global manufacturing.

- **Plastics in Infrastructure** – Building a bright future In the transportation sector, plastic is required to reduce load and improve energy efficiency. The energy sector needs plastics for better insulation. Exhibitor Categories: manufacturers and suppliers of traditional materials, pre-engineered materials, plastic materials or a blend of different materials, processors offering infrastructural solutions.

- **Consultant Clinic** – Providing solutions to all Consultant Clinic is a specialised area where you get answers to queries related to design, manufacturing, blending and machine failure analysis. Many plastic industry experts will participate to solve your queries and provide guidance.

- **Job & Career Fair** – Bridging the human talent gap This is a platform that generates employment opportunities for job seekers. It is India's first dedicated job fair for the plastic industry. Companies can directly conduct interviews and hand out offer letters to

deserving candidates.

- **India Mold** – A focused pavilion for mould making & design application development

- **Green Pavilion** – Application of renewable energy in energy intensive manufacturing The prime purpose behind this pavilion is to address and highlight the burning issues of plastics and its effect on the environment. This infotainment zone will stand out in Plastivision India.

- **Solar Energy Pavilion** – Dynamics of economy of solar energy application in plastic industry

- **Plastics in Agriculture** – To showcase the application of plastic in water conservation Plastics can help farmers increase their crop production and improve quality. At the 'Plastics in Agriculture' pavilion, numerous plastics products for water conservation and crop optimisation will be exhibited.

- **Medical Plastics Safe & Sustainable**

Whether it's disposable syringes, intravenous blood bags or heart valves, the modern healthcare industry would not survive without plastics.

The "Medical Plastics" pavilion clearly demonstrates how healthcare segments benefit immensely from plastics. Exhibitor categories: Design, development, prototype and manufacturing of medical plastics.

- **Country Pavilions** – China, Taiwan, UK, Korea, Germany, Italy, USA, Turkey

- International delegation from ASEAN countries, Africa, Europe and America

Bombay Exhibition Centre. "Mumbai is considered as Plastics Hub of the Western India. Moreover, it is globally as well domestically well-connected city. Hence, it turns out to be the right venue for the upcoming edition of the show," informed Kailash B. Murarka, Chairman, Plastivision India 2017.

The event is supported by numerous national and international institutes including British Plastics Federation, IPF Japan, Sharjah Chamber of Commerce & Industry, India China Chamber of Commerce & Industry, Association of Japan Plastics Machinery, TAGMA India, Indian Plastics Institute, NSIC, CIPET, FIEO, Indian Institute of Packaging, PLEXCONCIL, PlastIndia Foundation, TAMI, Italian Plastics & Rubber Processing Machinery & Moulds Manufacturers' Association, Indo-Italian Chamber of Commerce & Industry. "NSIC's support has come as a boon for SME and MSME sector as it offers subsidies over the participation in the show. Therefore, you will see substantial participation from these sectors as well," said Murarka.

Plastivision India is also approved by UFI (the

international Paris-based exhibition rating agency).

Response from the industry

The exhibitors at the show come from different segments. Right from the raw material & chemical suppliers to pre & post process-



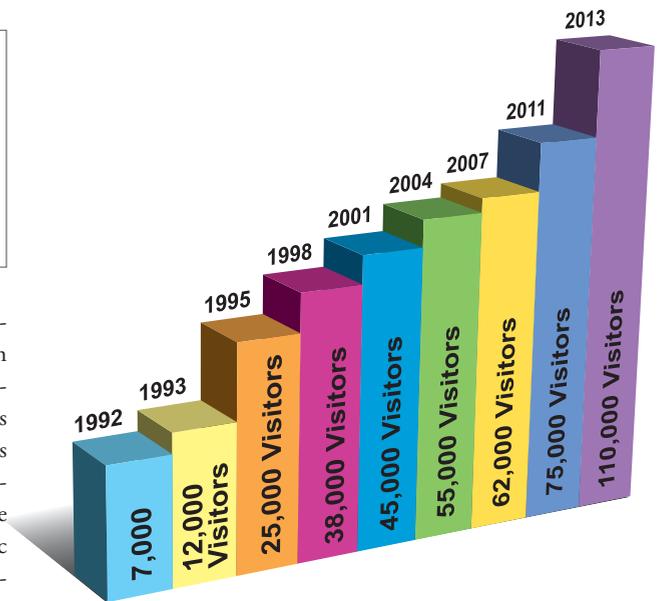
▣ Inauguration of Plastivision 2013



A decade back, the market was estimated to be at 20 million metric tonnes by 2020. However, we have crossed this mark well in advance in 2016. This talks a lot about the potential and growth rate of the plastics industry.

ing machines manufacturers, mould & dies, packaging lines, automation solution providers are in the exhibitors list. Having such an elaborate exhibitor segments are well categorised into pavilions. “Our pavilions are thoughtfully created. We have pavilions where similar kind of businesses will be located together such as Automation & Robotics, Plastics in Infrastructure, Green Pavilion, etc. However, the unique pavilions that we have created are Consultant Clinic and Job & Career Fair. The Consultant Clinic will offer an enthusiast complete guidance — from conceptualisation up to beginning of production — of setting up a plastic related enterprise. On the other hand, Job & Career Fair is a perfect match making place that is aimed at bridging the human talent gap,” mentioned Murarka.

Other than these specialised pavilions, Plastivision India 2017 will have country pavilions from China, Taiwan, UK, Korea, Germany, Italy, USA and Turkey. “As compared to the last edition, you will see bigger German pavilion in terms of floor size while Chinese pavilion will occupy 500 percent more space. That is considerable increase in size of the pavilions,” stated Raju D. Desai, Chairman-National Advisory Board, Plastivision 2017. Adding further, Murarka said that in all, exhibitors are coming from 25 countries. “Such an extensive international participation creates new opportunities for exhibitors as well as



As compared to the last edition, you will see bigger German pavilion in terms of floor size while Chinese pavilion will occupy 500 percent more space. That is considerable increase in size of the pavilions.

Raju D. Desai, Chairman-National Advisory Board, Plastivision 2017

Exhibitor displaying its product at Plastivision 2013





Plastics in Healthcare

visitors,” he continued.

Moreover exhibitors coming from width and breadth of the global industry reinforce the faith that they have in AIPMA as an organiser. “The space for the exhibition was sold out nine months before the show. Exhibitors look forward for this event, keep their budgets and participate wholeheartedly. Many of exhibitors had booked their space in last edition of the show itself. And, we

Journey so far

This is the 10th edition of the show. Speaking on the journey of the exhibition, Murarka said, “Plastivision India’s maiden show took place in 1992 with 120 exhibitors and around 7,000 visitors. From that today it has grown to over 1500 exhibitors and we are expecting over 1.25 Lakh visitors in this edition. We have grown substantially in size and quality.”

are still receiving enquiries and trying to accommodate as many as exhibitors as we can by erecting temporary hanger,” ensured Murarka.

Broadening horizons

Plastic is one of the industries that holds immense growth in the future. And with support from government through ‘Make in India’, the industry can achieve a lot. Speaking on the market scenario, Murarka said “A decade back, the market was estimated to be at 20 million metric tonnes by 2020. However, we have crossed this mark well in advance in 2016. This talks a lot about the potential and growth rate of the plastics industry. Through Plastivision India, AIPMA is offering a platform for the industry to make the most of it.”

Additionally, plastic is a magical material that finds its application in variety of industries. “Therefore, we are targeting to take this show to all these user industries such as infrastructure, automotive, packaging, agriculture, etc. In order to spread the awareness on the show in varied sectors, we are conducting road shows in approximately 50 industrial hubs in the country. We also have invited government bodies and research & development agencies to visit the show,” explained Murarka.



Best stall award was won by Reliance during Plastivision 2013



Rush at registration counter

“We are targeting to take this show to all these user industries such as infrastructure, automotive, packaging, agriculture, etc. In order to spread the awareness on the show in varied sectors, we are conducting road shows in industrial hub in the country. Additionally, we have also invited government bodies and research & development agencies to visit the show.”

To summarise...

A trade fair is normally looked upon as a networking platform. However, Plastivision India 2017 has gone beyond the traditional recognition of the exhibition. Along with live demonstrations of the machines, the show will offer ideal networking platform for B2B meetings. Also, it is a perfect matchmaker for businesses which are looking for exports, agents, dealers, etc. The new pavilions will showcase the expanded use of plastics. In other words, this show is going to be bigger, better and broader in all respect compared to its earlier editions! 

Exhibitors speak



LET'S HEAR THE EXPERIENCES OF EXHIBITORS WHO PARTICIPATED IN THE PREVIOUS EDITION OF PLASTIVISION INDIA.

By Swati Deshpande



Plastivision India is a trade fair that has been attracting more than 1,000 exhibitors. Speaking on his experience of participation in the exhibition Amit Pendse, Managing Director, Electronica Plastic Machines Ltd said, "Plastivision India offers a unique platform for plastic professionals to showcase latest and technically advanced products, processing equipment and materials. The event provides exhibitors an opportunity to appeal and forge a relationship with visitors looking for solutions for their business."

Talking about the show organisers, Pendse added, "The arrangements at Plastivision are improving with every successive event. The emphasis is on showcasing and covering each and every sector of this vast plastic industry to attract huge visitor numbers. It will help enable one-to-one interactions with various manufacturers/traders/processors."

“Plastivision India offers a truly world class platform for various stakeholders in the polymer industry. It brings together polymer, machinery and additive, and the processing industry to interact and transact business in an extremely congenial environment.”

**Jayen Modi,
Managing Director, Baerlocher India
Additives Pvt. Ltd**

Seconding the same, Jayen Modi, Managing Director, Baerlocher India Additives Pvt. Ltd. said, "Plastivision India offers a truly world class platform for various stakeholders in the polymer industry. It brings together polymer, machinery and additive, and the processing industry to interact and transact business in an extremely congenial environment."

Speaking his experience of the last edition, Modi added, "Plastivision 2013 was a great event organised in a very professional manner. The deep commitment of the organisers was evident from their involvement in each and every detail and I believe this was what made it a great success. In last edition, we had customers from various parts of the world visiting our stall. Not only did we get some business at the show, but we also had a great opportunity to partner with several customers. We took forward their agenda on developments of new solutions."

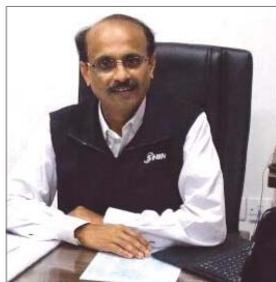
Offering another dimension, Janardhan Bhat, Managing Di-



**Amit Pendse, Managing Director,
Electronica Plastic Machines Ltd**



**Jayen Modi, Managing Director,
Baerlocher India Additives Pvt. Ltd**



**Janardhan Bhat, Managing Director, Shini
Plastics Technologies (India) Pvt. Ltd.**



**Girish Handigol, Jt. General Manager
(Marketing), Toshiba Machine Chennai
Pvt. Ltd.**

rector, Shini Plastics Technologies (India) Pvt. Ltd. said, "Plastivision India is the epicentre of plastic industry. Due to its esteemed name, this exhibition helps target the right audience and generate new business for the plastic processing industry. During Plastivision India 2013, our company's focus was to launch new products in Automation line. We got a good exposure at the event and received a couple of great orders."

He further believes that this exhibition gives an opportunity to reach out to new customers and showcase new developments. "Each year we come to PVI with the intention of reaching out to prospective customers. We also try to showcase new products at every edition of PVI and we are glad that so far we have been successful doing it. Moreover, it is definitely the hub of identifying trends that will shape the plastics industry rapidly!" Bhat stated.

"Plastivision India helped us expand our business to new markets," mentioned Girish Handigol, Jt. General Manager (Marketing), Toshiba Machine Chennai Pvt. Ltd. "It provided us with an opportunity to exhibit our company's latest products and technology. We had direct interaction with visitors from African Countries, Southeast Asia and the Middle East. It was a great leap towards promoting our export business. We also received several orders for products that were showcased in the event," he mentioned

Convergence!



DESIGNERS ARE ONE OF THE MISSING LINKS TO SOLVING SOME OF THE COMPLEX SOLUTIONS RELATED TO MATERIALS, DESIGNING FOR RECYCLING, AND SOCIETAL PROCESS FLOW IN TERMS OF RESOURCE RECOVERY.



The Plasticity Forum was held recently as part of the London Design Festival to help bring the design community into the big discussion on the future of plastic sustainability. The goal was to give them the tools and know-how to become part of the solution in reducing plastics waste. Designers are one of the missing links to solving some of the complex solutions related to materials, designing for recycling, and societal process flow in terms of resource recovery. Those who know the issues will be better able to drive expansion of the Corporate Social Responsibility and UN Sustainable Development Goals (SDGs) that the brands and clients they work for should be striving to meet.

Plastics pollution may be one of the biggest looming challenges of our time, but it also offers one of the exciting opportunities when it comes to creating new design solutions that can be scaled across industries. France's recent announcement to ban all disposable plastic plates, cups and cutlery, and the first country to do so, is evidence of the recognition of the ills that plastic pollution creates.

The Plasticity Forum in London included a unique range of global expert speakers on the topic of plastic sustainability, with challenges and opportunities that included the manufacturing needs for an innovative single-material shampoo bottle, the use of calcium carbonate from large volumes of egg shells as a filler for any types of polymers which can benefit from its inclusion. Giulio Bonazzi, Chairman and CEO of Italy's Aquafil Group, spoke about his firm's unique fiber recycling capacities from carpet tiles and used fishing nets. Aquafil



Float-sink separation example for recycling. Courtesy: Ocean Recovery Alliance

Marilu Valente presented her unique, award-winning prototype design for a mono-material shampoo bottle that dispenses with the separate cap by creating a self-plugging dispensing hole. This allows for better standardization of material use, making it easier to recycle.

has a growing program with carpet maker Interface, which sources fishing nets from local communities in the Philippines and Cameron. Bonazzi and Miriam Turner from Interface said that "over 100 tons of nets have been collected, with over 55,000 families impacted by a cleaner environment, and over 600 families now having access to micro finance as a result of the Net-Works program." Marilu Valente presented her unique, award-winning prototype design for a mono-material shampoo bottle that dispenses with the separate cap by creating a self-plugging dispensing hole. This allows for better standardization of material use, making it easier to recycle. "I am also looking for manufacturing companies and retailers to work with to distribute this innovative product, which is designed for recycling and reuse," she said.

Other speakers included Chris Grantham, Circular Economy Portfolio Director - IDEO, Quentin Drewell, UK Circular Economy Lead - Accenture, Willem De Vos, CEO - Society of Plastics Engineers, Simon Widmer, Project Manager of Circular Design - Ellen MacArthur Foundation, David Wilson, Director - Vanden Recycling, and Pankaj Pancholi, President - Just Egg.

"Plastic is a material that will be with us for years to come, both because it is so useful, and because it does not easily go away. Plasticity offers a venue for collaborations and knowledge sharing to happen across sectors which often is what creates big impacts and results. The design community is a critical component of the path forward to reduced waste, and we look forward to hosting more events with the design community involved," says Doug Woodring, Plasticity's founder. As per estimates less than 15 percent of all plastic every produced actually gets recycled today. 📍

Plastic is a material that will be with us for years to come, both because it is so useful, and because it does not easily go away. Plasticity offers a venue for collaborations and knowledge sharing to happen across sectors which often is what creates big impacts and results.

Doug Woodring, Plasticity's founder.



GCPA: A Grand Success



THE CONFERENCE WHICH AIMED AT HIGHLIGHTING THE OPPORTUNITIES AND CHALLENGES IN THE AREA OF PLASTICS IN AUTOMOTIVE WAS ATTENDED BY WHO'S WHO OF THE INDUSTRY. HERE IS AN OVERVIEW OF THE EVENT.

By Swati Deshpande



In the current trends of light-weighting and cost reduction, plastics play an important role in the automotive industry. On this background, Worldwide Media recently concluded a first of its kind of an event — The Economic Times Polymers Global Conference on Plastic in Automotive (GCPA). The one day conference, which was held at Westin, Mumbai, focused on the various kinds of applications of plastics in the automotive.

Inauguration

The event was inaugurated by Rajan Wadhwa, President & Chief Executive – Truck, Construction Equipment & Power Train Busi-

ness, Head – Mahindra Research Valley; Member of the Group Executive Board, Automotive Farm Equipment Sectors, Mahindra & Mahindra Ltd and President – Automotive Research Association of India (ARAI), Ajay Durrani, Country President, India and Managing Director, Covestro (India) Pvt Ltd, Antony Kurian, Managing Director, igus India, and Vishal Agrwal, President, Yudo Hot Runner India Pvt. Ltd and Yudo Suns Pvt. Ltd.

Later, the Welcome Note was delivered by Ajay Durrani. While welcoming speakers and delegates, Durrani said, one cannot ignore the contribution of plastics to the automotive industry. He further added that “In the days to come, the vision of the industry should be delivering smart solutions while making the world a brighter place to live in.”





▣ Suresh V. Market Development Manager, Covestro India



▣ Deepak Paul, Sales Manager, igus India



▣ Ranjan Halder, Ad Sales Head, WWM - B2B

In the keynote address, Wadhwa highlighted the journey of plastics in the automotive industry over the period of 4-5 decades. Furthermore, the panel of top CEOs discussed the use of plastic in the automotive industry from the management perspective.

Key takeaways

The two panel discussions, on light-weighting of auto components and use of plastics in vehicle exteriors touched upon various opportunities and challenges in the respective areas. Syamal Adhikari, Head - Materials Technology & Test Labs, Mahindra & Mahindra Ltd (Automotive & Farm Equipment Sector) presented a case study on Role of Plastics in Vehicle Interior. Rajeev Sharma, Head Proto Manufacturing Factory & Tool Room, Global Centre for Innovation and Technology, Hero MotoCorp Ltd presented his thoughts on Additive Manufacturing techniques.

Topics discussed at GCPA:

- Past, present and future of plastics in the automotive industry
- Future trends – Additive manufacturing
- Various aspects of use of plastic in the interiors of the vehicle such style, design, shape, aesthetic appeal, etc.
- Light-weighting of auto components
- Various aspects of use of plastic in the exteriors of the vehicle including safety, advanced styling techniques, recycling, multi material designs, etc.



▣ Shiv Kumar from Toyoda Gosei South India Pvt Ltd won the Yudo Lucky Draw.

Apart from opportunities and challenges, the conference also witnessed information on the available solutions in the market. Doing exactly the same, Suresh V. Market Development Manager, Covestro India highlighted various solutions that the company offers for the automotive industry. On the other hand, Deepak Paul, Sales Manager, igus India, informed the audience about offerings from igus. Vishal Agarwal, President, Yudo Hot Runner India Pvt. Ltd. and Yudo Suns Pvt. Ltd. presented various case studies about successful use of hot runners in the challenging situations. The attraction of the event was the lucky draw contest presented by Yudo Hot Runner India Pvt. Ltd. This contest gave a chance to one lucky winner to visit Yudo Hot Runner's facility in Korea.

Also, Tata Strategic Management Group (TSMG) unveiled a knowledge paper titled "Plastics in Automotive the 'Material' Impact". This paper can be downloaded from <http://gcpa.themachinist.in>

In all, with the presence of over 200 delegates, the maiden edition of GCPA was a great success. 📌

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Higher payload, reduced fuel consumption!



WITH THE USE OF A SPECIAL PLASTIC, CONTINENTAL HAS CREATED PISTONS THAT WEIGH 75 PERCENT LESS THAN CONVENTIONAL STEEL PISTONS REDUCING FUEL CONSUMPTION WHILE ALSO ADDING 12–15 KG OF PAYLOAD CAPACITY PER AXLE.

W

ith its innovations for commercial vehicles, international technology company Continental can achieve fuel savings of up to six liters per 100 kilometers. This value is a result of the systematic implementation of all the technologies available during series production and development. “We envisage great potential for future optimization in fleet consumption. Our innovations – some of which are currently in the design phase and some of which are undergoing preliminary development – offer additional potential for reducing consumption by as much as two liters per hundred kilometers,” explains Nikolai Setzer, who is a member of the Continental Executive Board. This calculation takes account of more than 20 different technologies that either have recently been implemented in series production or are currently undergoing development. Continental is thereby improving the efficiency of commercial vehicles, cutting CO₂ emissions, and improving the cost efficiency of goods transportation.

In 2007, the Member States of the European Union agreed to reduce primary energy consumption by 20 percent by 2020. Consequently, vehicle manufacturers have an interest in continuing to lower CO₂ emissions. Innovations developed by Continental – e.g. lightweight technologies and efficient exhaust-gas after-treatment solutions – can help to meet this challenge. Fewer emissions, lower consumption, falling operating costs, increasing payloads, and stricter emissions regulations or exhaust standards such as EURO 6 are therefore constantly driving the development of innovations.

Replacing steel and aluminium

Modern commercial vehicles and buses are subject to exacting demands when it comes to efficiency. To improve the efficiency and cost-effectiveness of goods transportation, payload capacity is to be increased in compliance with statutory limits on axle loads. Reducing the weight is not just about reducing fuel consumption and, in turn, decreasing operating costs, but also brings other advantages, too: E.g., with the weight-reducing air spring family from Conti-

“We envisage great potential for future optimization in fleet consumption. Our innovations – some of which are currently in the design phase and some of which are undergoing preliminary development – offer additional potential for reducing consumption by as much as two liters per hundred kilometres.”

Nikolai Setzer, Member, Continental Executive Board.

ental, forwarding agents can gain 12–15 kg of payload capacity per axle. With a service life of 400,000 km, CO₂ emissions drop by 200 kg. In comparison with conventional steel pistons, this means as much as 75 percent less weight thanks to the use of a special plastic.



75 percent lighter than conventional steel pistons thanks to the use of a special plastic for example, with the weight-reducing air spring family from Continental, forwarding agents can gain 12–15 kg of payload capacity per axle.

Photo: ContiTech

Close-coupled exhaust after-treatment

At the International Motor Show Commercial Vehicles, Continental will be unveiling an innovative solution for close-coupled exhaust after-treatment on heavy-duty commercial vehicles. By positioning the diesel oxidation catalyst (DOC) near the engine, its volume can be reduced by about 30 percent. Also, use of the newly developed catalyst substrate in a CS design (Crossversal Structure) enables a further 20 percent decrease the amount of materials used and the weight of the DOC.

Also, the diminished heat loss and high conversion efficiency of the innovative CS cell structure will help to meet future nitrogen oxide emission limits, such as the CARB 2023 regulation (CARB: California Air Resources Board) in the U.S. Due to the higher working temperature in the DOC, subsequent injection of urea solution can begin sooner. In addition to the DOC, the solution showcased will include the urea metering system integrated in the tank, the SCR controller and the metallic catalyst substrate for 100 percent evaporation of the urea solution.

Plastic has wide scope in the automotive industry



SPEAKING AT GCPA, RAJAN WADHERA, MAHINDRA & MAHINDRA LTD, HIGHLIGHTED THE JOURNEY OF PLASTICS AND ITS USEFULNESS FOR THE AUTO INDUSTRY



time, the oil crisis happened and therefore, fuel efficiency became a big deal. As a result, light weight alternatives of metal were searched. And, plastic emerged as suitable alternative with its lightweight feature,” he mentioned.

Plastics role today

According to Wadhra, today, packaging and construction industries consume Polypropylene extensively. In pie chart of consumption of plastics, these are the leading industries having the share of 39 and 33 percent respectively. “Automotive is also one of the leading industries occupying the share of 14 percent in the same chart,” Wadhra explained.

Why this material is one of the preferred ones in the automotive? Of course in the era of light-weighting, a material which is lighter and stronger will have more acceptance. “But, apart from being light in weight, plastic has numerous other advantages as well. It is extremely cus-

At the Economic Times Polymers Global Conference on Plastics in Automotive (GCPA), Rajan Wadhra, President & Chief Executive – Truck, Construction Equipment & Power Train Business, Head – Mahindra Research Valley; Member of the Group Executive Board, Automotive Farm Equipment Sectors, Mahindra & Mahindra Ltd and President – Automotive Research Association of India (ARAI) delivered a keynote address.

“ Apart from being lightweight, plastic has numerous other advantages. It is extremely customer-friendly as it is odourless, has great visual appeal and there is no problem of any kind of emission. ”

Journey of plastics

While speaking on the journey of plastics, he said, the material started evolving from 1900s. “Since then it has found applications in various areas right from gadgets like cameras to aerospace. In fact, it played a critical role during the World War, as it was extensively used in radars and aircrafts.”

He further added that, plastic started gaining importance in the automotive industry in the era of 1960-70s, “It is during this

“ Not only customers but engineers are also delighted with it as it helps them reduce the weight by 30 percent and cost by the similar number. Moreover, it is consistent and reliable material. It possesses the features to replace steel and high-strength steel in some areas. ”

tomor-friendly as it is odourless, has great visual appeal and there is no problem of any kind of emission,” he continued. Wadhra further mentioned that “Along with customers, engineers are also delighted to work with it as the material helps them reduce the weight by 30 percent and cost by the similar number. Moreover, it is consistent and reliable material. It possesses the features to replace steel and high-strength steel in some areas.”

He also mentioned that working in the automotive industry for over three decades he has developed sincere liking towards plastics. Furthermore, he added, “Though the material is been used in the automotive, there is further wide scope to enhance its applications and making vehicles lighter and hence fuel efficient.”

Wadhra appreciated the concept and organisation of the Conference saying that it was necessary and well timed. He invited various stakeholders to come together and collaborate in the larger interest of the industry.

Addressing one-piece demand!



MERCEDES-BENZ TRUCKS IS USING 3D PRINTING TO PRODUCE TRUCK SPARE PARTS ECONOMICALLY AND WITH FAST PRODUCTION EVEN WITH SMALL QUANTITIES.



enuine spare parts for Mercedes-Benz trucks which are ordered and delivered even after many years; in the Mercedes-Benz Trucks after-sales service this has already been reality for a long time now. As the

next step, Mercedes-Benz Trucks is using the latest 3D printing processes for plastic spare parts as the standard production method in the Customer Services & Parts sector. As of September already, 30 genuine spare parts can be ordered and supplied at the press of a button from the 3D printer, quickly, economically, in any quantity and always in consistent genuine manufacturer's quality ('one-piece demand').

With the use of 3D printing technology as an innovative state-of-the-art production process in after-sales, Mercedes-Benz is taking on the pioneering role and technological leadership among the global truck producers.

"In keeping with our brand promise 'Trucks you can trust', we set the same benchmarks for reliability, functionality, durability and economy for spare parts from 3D production as for parts from conventional production," says Andreas Deuschle, Head of Marketing & Operations in the Customer Services & Parts Mercedes-Benz Trucks Division. "However, 3D offers many more possibilities; this is why we shall be rapidly extending the production of 3D printed parts."

Highest 3D quality

Today at Daimler more than 100,000 printed prototype parts are manufactured for the individual company divisions every year. "We benefit from our extensive experience at Daimler with 3D printing processes in prototype construction," comments Andreas Deuschle. The available spare parts consist of high-quality plastic components. Covers, spacers, spring caps, air and cable ducts, clamps, mountings and control elements are just a few examples of economical spare part production in top quality made possible by using the 3D printing process.

The "printed" spare parts are created with state-of-the-art 3D printers based on the Selective Laser Sintering (SLS) printing process. For the high quality standards of Mercedes-Benz Trucks the process parameters have been optimised and determined by the Daimler research and development divisions. Every 3D spare



Mercedes-Benz Trucks already successfully produces 30 spare parts with the latest 3D SLS printing processes.



Covers, spacers, spring caps, air and cable ducts, clamps, mountings and control elements are just a few examples of economical spare part production in top quality made possible by using the 3D printing process.

part can be ordered using the special spare part number under which it is recorded in the order code lists and the spare parts catalogues at Mercedes-Benz Trucks. Thus, even after several decades, rapid supply to the customer is ensured via the Mercedes-Benz Logistic Supply Chain through all the sales stages – all over the world.

Advantages through secure supply

The eco-friendly and resource-conserving 3D printing process is playing a pioneering role in the after-sales. The challenge in the spare parts business lies in securing supply even for model series which are no longer produced. This means that the range also includes spare parts for which there is only a low demand in small quantities every year. Producing them is thus increasingly uneco-

nomical for suppliers – production facilities and tools have to be retained and maintained for years. With the 3D printing process, these challenges are a thing of the past. For every 3D spare part is available on demand at short notice all over the world.

The printing itself can take place within a short time following receipt of the design definition and order, considerably speeding up the production and supply of spare parts. As spare and retrofit parts can still easily be 'reprinted' even after a long time using the data stored and supplied without any complex stocking, no warehousing is required either. At the same time the burden on costs, resources and the environment is also eased, as there are no material surpluses, the disposal of which is very complex.

Source: Mercedes-Benz



Understanding the Customers is a Key



CEO PANEL AT GCPA DISCUSSED VARIOUS TOPICS INCLUDING SUSTAINABILITY, TECHNOLOGY OPTIMISATION AND OFFERING SERVICE SUPPORT TO THE CUSTOMERS.

By Swati Deshpande



One of the interesting sessions at that Global Conference on Plastics in Automotive (GCPA) was the CEO Panel Discussion, which discussed about the challenges and opportunities of the auto component industry with regard to plastic. Ajay Durrani, Country

President, India and MD, Covestro (India); Dr. Madhu Ranjan, MD, ElringKlinger Automotive Components India Pvt. Ltd.; RK Sharma, Co-Founder & Managing Director, Daejung India; B.P. Shiv, Chief Marketing & Programs Officer, Plastic Omnium Auto Exteriors India Pvt. Ltd. and Amit Kavrie, Executive Director, Supreme Treon Pvt Ltd participated in the discussion.

Speaking at the conference, Durrani said, "OEMs at the global level are struggling on the topic of sustainability. We are living on borrowed resources. How much we are ready to give it back to the environment is the question. Considering this, topics such as weight reduction, energy efficiency are going to be very important in the future. We can be compatible yet sustainable. All we need to do is start thinking from this point of view to find solutions." Seconding the same, Dr. Ranjan added that, "In view of strict regulations that we all have to adhere to such as Euro 6, light-weighting plays an important role in the automotive industry. To progress in this direction, we need to achieve drastic weight reduction and plastic is the answer to this challenge.

In short, going ahead plastic is the future." For enabling weight reduction, what companies need to have is a right technology. According to Shiv, "There are several technologies available globally for using plastics in the automotive industry. However, cost is an important factor in bringing these to India. Hence, such technologies have to be brought in country with some optimisation and localisation. So that, products made out of it are cost effective. Such optimisations will help OEMs upgrade their products to global level at affordable cost."

In such scenario, supply chain as well plays a big role. Speaking on the same, Kavrie noted, "When it comes to the supply chain, we are a unique country and need unique solutions. We cannot copy paste from the world. Right from our solutions, material partners, engineers and also competence has to be local. It has to be Made in India and Made for India. It is very important for the success of the industry." In the process of offering light, cost effective solutions to the customer, what is more important is to understand the customer needs. Speaking on this factor, Sharma mentioned, "In this era where product lifecycle is shortening and upgrades are happening quickly. There is a great opportunity for Tier2 industry to adapt new technology, learn material, learn about the processes and graduate to next level. At Tier 2 level you have the obligation to provide full service support to your immediate customer." 



A LIST OF KEY TRADE SHOWS HAPPENING BETWEEN OCTOBER 2016 TO OCTOBER 2017.

October 19-26, 2016

K 2016

Location: **Düsseldorf, Germany**
 Organised by: **Messe Düsseldorf**
 Website: www.k-online.com

Background

For more than 40 years, K has been and still is the biggest international trade fair for plastics and rubber, and takes place once every three years. The leading raw material producers, processing companies and machinery manufacturers offer an overview of the latest technical developments, procedures and techniques, of current construction methods and future trends. The outstanding importance of K for the industry arises from the excellence and ongoing development of its product range, and the constantly growing number of more than 3,200 exhibitors from 59 nations. The fact that 218,000 trade visitors from over 120 countries expressed their full satisfaction at the last staging of K in 2013 guarantees the future success for all those involved in the industry.

January 8-10, 2017

ArabPlast 2017

Location: **Dubai, UAE**
 Organised by: **Al Fajer Information & Services**
 Website: www.arabplast.info

Background

It promises to be the largest plastics, petrochemicals and rubber industry trade show in MENA region as well as the fastest way to enter the vast MENA region's plastics, petrochemicals and rubber industry. ArabPlast 2017 is envisioned to make better business sense to the participants who are giving shape to a better world. The captains of the plastics and rubber industry would be here to unveil products solutions, cutting-edge technology, and revolutionary innovations and forge international alliances.

January 19-21, 2017

Indian Rubber Expo 2017

Location: **Chennai, India**
 Organised by: **All India Rubber Industries Association**
 Website: www.indiarubberexpo.in

Background:

The India Rubber Expo 2017 is expected to have over 400 companies participating from India and around the globe, will be spread across 25,000 square meters and is expected to see over 30,000 visitors. Large Country Pavilions have been blocked for China, Germany and USA and for a number of companies from Japan, Korea, Malaysia, Sri Lanka, Turkey and Taiwan, among others.

January 19-23, 2017

Plastivision India 2017

Location: **Mumbai**
 Organised by: **The All India Plastics Manufacturer's Association (AIPMA)**
 Website: www.plastivision.org

Background:

It is recognised amongst the top ten global plastics exhibition. Plastivision India 2017 is likely to see participation from about 1,500 exhibitors coming from more than 25 countries. Visitors are expected from over 61 countries and the organisers are anticipating business worth Rs2000 crore to be generated at the show.

January 24-27, 2017

INTERPLASTICALocation: **Moscow, Russia**Organised by: **Messe Düsseldorf North America**Website: www.mdna.com/trade-shows/details/interplastica**Background**

Russia and its neighbors still have a substantial demand for investment and an unbroken interest in advanced machinery, production and process technology as well as high-tech materials. Because of the more difficult economic circumstances, the domestic consumer goods and packaging industry is under pressure to improve its competitive edge and to substitute the decline in imports. At INTERPLASTICA 2017 an impressive range of innovative products and services will again be on display and the potential of market is still substantial.

May 16-19, 2017

Chinaplas 2017Location: **Guangzhou, China**Organised by: **Adsale Exhibition Services Ltd**Website: www.chinaplasonline.com**Background**

Following the very successful staging of the 30th edition this year, CHINAPLAS 2017 will return to China Import and Export Fair Complex in Guangzhou from 16 -19 May next year, occupying 26 exhibition halls with total exhibition area reaching 250,000sqm! The show spotlights "Intelligent Manufacturing High-tech Materials Green Solutions", featuring "Automation Technology Zone", "Composite & High Performance Materials Zone" and "Recycling Technology Zone" which gather international suppliers of advanced plastics & rubber machinery and materials.

September 20-23, 2017

T-PlasLocation: **Bangkok, Thailand**Organised by: **MDNA**Website: www.tplas.com**Background**

A unified business platform for the plastics and rubber industries, T-PLAS - International Trade Fair for the Plastics and Rubber Industries will present a comprehensive range of solutions from the latest machinery and equipment, semi-finished products, raw materials, technical parts and reinforced plastics, to a full suite of services for the two industries.

October 17-21, 2017

FakumaLocation: **Friedrichshafen, Germany**Organised by: **P. E. Schall GmbH & Co. KG**Website: <http://www.fakuma-messe.de/en/fakuma/>**Background**

Fakuma offers a comprehensive overview of all plastics technologies; whether injection moulding – Fakuma holds a top international position here – extrusion technology or thermoforming; the user can find out specifically about all processes machines and tools that are relevant for the working and processing of plastics. The focus here is on practice, as around 1,700 exhibitors present the entire process chain for the economic production of plastic components.

Success story of plastic in interiors



PLASTIC IS LIGHT IN WEIGHT BUT IT CAN BE UNAPPEALING. LEARN HOW MAHINDRA & MAHINDRA ADDRESSED THE ISSUE OF UNAPPEALING INTERIORS.



While speaking on Role of Plastics in Vehicle Interior - 'Is good material good enough to achieve interior aesthetics?', Syamal Adhikari, Head - Materials Technology & Test Labs, Mahindra & Mahindra Ltd (Automotive & Farm Equipment Sector) mentioned the history of the company said, "Mahindra & Mahindra started its automotive business in 1945 by assembling Jeep. Later the company came up with variety of its variants such as Armada, Armada Grand, CJ 340, and so on. If you look at amount of plastics used in these vehicles, it will come to almost nil." Later came the era of Scorpio, which was designed and developed in-house by Mahindra.



"And then came Xylo and XUV 500. These models were doing good business. However one common complaint was plasticky look of the dashboard," he said. To address this issue Mahindra's three teams — Style, Metal's Technology Department (MTD) and Design team started working in shells. However, this approach did not work. "Then we took Collaborative approach. In 2013, our teams collaborated with Global Benchmarking Group & Leading Texture Expert. Objective of this project was to understand the influence of each and every parameter of material, texture and design on aesthetics and good hand," Adhikari mentioned. And the success of this model came through TUV300. "It's dashboard won everybody's heart."

Additive manufacturing - A future trend



RAJEEV SHARMA, HEAD PROTO MANUFACTURING FACTORY & TOOL ROOM, GLOBAL CENTRE FOR INNOVATION AND TECHNOLOGY, HERO MOTOCORP LTD SPEAKS ABOUT ADDITIVE MANUFACTURING TECHNOLOGY.



Today automobile sector demands light-weight and fuel-efficient solutions. Moreover, the vehicle has to be safe for driver and passengers. "Safe means high resistance to failure mode. Simultaneously, material used has to have economic manufacturability, locally available and eco-friendly," said Rajeev Sharma, Head Proto Manufacturing Factory & Tool Room, Global Centre for Innovation and Technology, Hero MotoCorp Ltd. He was speaking at Global Conference on Plastics in Automotive. And plastic most of these criteria. Speaking on the future of plastics in the automotive, Sharma mentioned, "By 2030 the automotive industry will recognise plastics



and polymer composites as a preferred material solution."

However this material too has its own drawbacks. "High performance plastics meet higher requirements than standard and engineered plastics because of their better mechanical properties, higher chemical and/or a higher heat-stability. Especially the latter makes processing difficult and often special machines are required to do it. Most high performance plastics are, for example, specialises in a single property (e.g. heat stability)," Sharma mentioned. One of the apt solutions for this is additive manufacturing. Elaborating on other advantages of this technology, Sharma said, "It reduces the number of steps in the designing to final market release process."

Light-weighting of vehicles with plastics



THE PANEL DISCUSSED ON THE VARIOUS ASPECTS OF LIGHT-WEIGHTING OF VEHICLES AT GLOBAL CONFERENCE ON PLASTICS IN AUTOMOTIVE (GCPA). EXCERPTS OF THE DISCUSSION ARE AS BELOW

D

uring GCPA, one of the interesting panel discussions was Light-weighting of auto components. Sandeep Waykole, Program Director India, Faurecia Interior Systems India Pvt. Ltd.; Vasanth Kamath, VP, Development, Brose India Automotive Systems Pvt Ltd.; Harish Iyyer, DGM, Product Development, Chassis Systems, ZF India Pvt. Ltd.; Ravishankar. S, GM (Product development), Ashok Leyland Technical Centre; Antony P Kurian, MD, igus India, Divakar Gokhale, Head- Business Development – BU-PCS, Covestro India participated in the discussion to throw light on various aspects of correlation between plastics and light-weighting. This discussion was moderated by Hemant Vinod, Project Leader, TATA Strategic Management Group. The various aspects that this panel touched



upon was advantages offered by light-weighting such as fuel efficiency, design flexibility, cost reduction. The panel also discussed various challenges that this material brings in terms of designing. One of the crucial challenges is safety of the vehicle as well as of the passengers and the panelists agreed on this point.

Plastics in exteriors



READ ON TO KNOW MORE ABOUT THE PANEL DISCUSSION ON ROLE OF PLASTICS IN THE EXTERIORS OF VEHICLES THAT TOOK PLACE DURING GLOBAL CONFERENCE ON PLASTICS IN AUTOMOTIVE (GCPA).

V

ehicle exteriors need to be sturdy as well as aesthetically appealing. It gives first impression to the customer and also it is first to be impacted in case unfortunate incidents. A panel that included B. Thej Kumar, GM - Product Development and Quality, Toyota Gosei South India Pvt. Ltd.; Sachin D. Awatade, Sr. Tech. Specialist - Advanced Polymers, Asia Technology Innovation Center, John Deere India Pvt. Ltd. and Kumar Iyer, Head- Commercial operations – BU-CAS, Covestro India discussed the importance of plastics in exteriors, which have to face such impact. This discussion was moderated by Charu Kapoor, Principal, TATA Strategic Management Group.

The various aspects of the manufacturing that the panel discussed were modular assembly practices, cost efficiency, achieving better impact resistance. It also threw lights on aesthetic areas like advanced styling techniques for sleeker, more aerodynamic exteriors, styling, building, and placing of components. Some of the



other aspects discussed were use of coatings & adhesives, molded in finish, foam technologies and multi material (hybrid) design.

When it comes to sustainability, one of the common areas of discussion with regard to plastic is recyclability. The panel also threw light on reuse of scrap plastic and used plastic cost-effectively.

Era of Intelligent Compounding at K 2016

SMART PROCESSORS THAT - CONTROL SHEAR, NEW TASK-ORIENTED SPECIAL ELEMENTS, RECYCLING TECHNOLOGY, END-TO-END PLANT ENGINEERING SOLUTIONS AND PATENTED PROCESSES AND OUTCOMES ON DISPLAY AT HALL 12, D05-03

STEER, creator of advanced materials platform technologies that effectively transform and functionalise materials in the fields of plastics, pharmaceuticals, food & nutraceuticals, biomaterials and biorefining, announced its participation at the K2016. STEER which has been getting a lot of attention for its revolutionary Omega 1.71 Do/Di smart processor with patented fractional lobe geometry, will be present at the India Pavilion. Besides the Omega platform, STEER will showcase new special elements for increased process efficiency, next-gen plant engineering solutions, advanced technology for recycling and barrels & EPZ elements with superior metallurgy. Atanu Maity, Global CEO, STEER Group, said, "Our focus has always been to provide the world Intelligent Compounding solutions using technology that can control shear in a Co-Rotating Twin Screw Extruder that brings significant abilities and supreme advantages in creating or working with materials of today and the future. The ability



to control shear opens up a world of possibilities with significant impact across industries like construction, automotive, electronics and electrical." Besides technology, STEER will also focus on process expertise. "Control over process coupled with high volume, high torque delivers far superior outcomes. We are able to achieve outstanding quality while processing shear-sensitive materials

- effect pigments, natural fiber filled compounds, long glass fiber filled compounds and other low bulk dense and difficult-to-manage applications." concluded Maity. Intelligent Compound: It is a Continuous Manufacturing Process Technology that brings significant abilities and supreme advantages in creating materials of future, opening a world of new possibilities in transport vehicles and construction materials. Importantly, when applied to transforming characteristics of bio-based and

synthesized materials the technology can make plastics, food, nutritional products as well as pharmaceutical products much safer, more effective and better suited.

For more information, visit steerworld.com or email to shyam.pani@steerworld.com

RECYCLING

Converting plastic into auto components

GENERAL MOTORS PLANS TO RECYCLE TWO MILLION BOTTLES. KNOW MORE ABOUT THE COMPANY'S RECYCLING EFFORTS.

General Motors is adding two million water bottles from Flint, Michigan residents into its Do Your Part water bottle recycling initiative. The company partnered with Schupan Recycling to collect the bottles. The plastic is washed, flaked and turned into fleece to make three products: Chevrolet Equinox V-6 engine covers, insulation for The Empowerment Plan coats for the homeless, and air filters for 10 GM plants.

The program engages a supply web of 11 organizations and reduces landfill waste. The resulting social impact contributes to the initiative's progress and expansion.

GM supplier Filtration Services Group involved the N.E.W. Life Center in Flint to make air filter panels from the 9,000 square feet of fleece created since Do Your Part launched in April.

An estimated 1.2 million bottles from five GM facilities throughout metro Detroit and Flint supplemented the significant volumes coming from the Flint community. The company recently added its Romulus Powertrain plant to the program. While many employees bring reusable water bottles to work, all of GM's



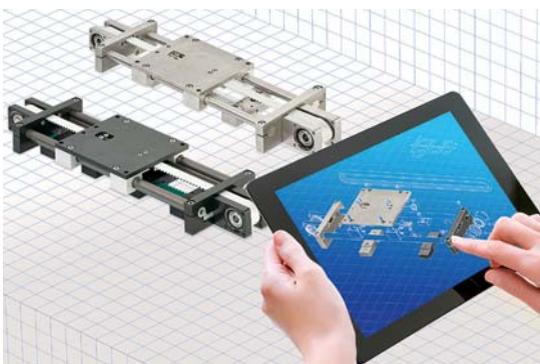
facilities provide water bottle recycling. Employees at these Michigan sites know exactly what the bottles will become when they throw the bottles in the recycling bins.

"People want to do the right thing," said John Bradburn, GM global waste reduction manager. "The Do Your Part recycling initiative is a way our employees and communities can connect their individual actions to broader social and environmental causes."

Source: GM

Linear axes variable width and length

Ready to install, maintenance-free and lubricant-free linear guides are becoming more popular in machine and plant manufacturing. “Off the shelf” solutions that fit exactly to the construction requirements of the user are uncommon. To simplify product selection for design engineers, igus has developed a construction kit for its drylin ZLW axes, with which the customers can individually assemble their own solutions. In this modular system, width, rail distances and length of the axes can be adapted quickly and easily. Due to the low profile of the toothed belt axes, even small installation spaces are sufficient for this. Additionally, users can order the cross beams, rails and carriages made of aluminium or stainless steel. The latter is of particular interest for applications in the food industry, due to the majority of components being made from stainless steel, this is a unique when considering standard ‘off the shelf’ items. A



maximum service life is possible in combination with liners made of iglidur E7. The linear guides can be supplied with

the igus motor or connected to the customer's which enables a variable motor integration to the right and left of the axis by means of solid and hollow shafts. Due to the new installation size ZLW-20, loads up to 75 kg can be lifted, with maximum stroke lengths of up to 3,000 mm. The wide drive belt also permits high speeds of more than 5 m/s depending on the load. The polyurethane toothed belt with steel cable reinforcement

is set centrally on the carriage at the required belt tension. An underwater application is also possible with a special belt. Grooved ball bearings ensure a robust support and greater energy efficiency. A quiet running and a long service life even in continuous operation make the ready to install

solutions interesting for numerous applications, such as the most varied handling tasks in the food or laboratory technology.

For more information, e-mail to vinayak@igus.in or visit www.igus.in

POLYSTAR-Repro One shredder Integrates recycling machine

READ ON TO KNOW MORE ABOUT INNOVATIVE SHREDDER AND RECYCLING MACHINE

POLYSTAR's latest Repro-One recycling technology has an integration of a heavy-duty single shaft shredder that is directly connected with the extruder pelletizer. The one-step recycling technology allows plastic processors to recycle both soft and rigid plastic wastes in one machine, which produces superior quality of recycled pellets.

The recycling machine is ideal for PP raffia/PP non-woven, PE film manufacturer who process their rejected raffia waste (tapes, fabric, jumbo big bags, lumps, blown film start-up waste) generated from in-house production. The recycled pellets can be put directly back into tape extrusion lines or blown/cast film lines for immediate reprocessing. These recycled pellets can be loaded in high percentages and still produce excellent fabric with good tensile strength and elongation. In POLYSTAR' Repro-One, plastic scrap is processed by a single shaft shredder for initial size reduction. The precisely controlled ram inside the shredder continuously pushes the bulky material towards the rotating shredder. After



shredding, the material is fed directly into the extruder. The material feeding is auto-controlled by the hydraulic force. The material then goes through degassing (if the material is printed) and filtered before the die face pelletizing process. The integrated shredder can effectively process large-sized waste such as jumbo bags, raffia, tape, rope, lumps from extrusion start-up, woven and nonwoven, without pre-

shredding in advance. This eliminates the need of pre-cutting/pre-shredding large-sized, thick or bulky waste (including hard plastics), feeding the waste directly from the shredder into the extruder at a very fast and constant rate without over-heating the material. This technology ensures continuous and uniform feeding to the extruder that produces high quality recycled pellets. The flexibility of the Repro-One allows raffia and film producers to reprocess their in-house production waste easily in a single machine. The high quality pellets with minimal material degradation can be reused 100 percent in reprocessing which reduces cost significantly for the producers.

For more info, e-mail: polystar.sales@gmail.com

Next-generation shredders for plastics

Size-reduction technology specialist Rapid Granulator is introducing a new family of shredders for plastics: The Raptor Series. These modularly designed units feature a world-first with their “open-hearted” design. Other notable design features include a unique cutting system, tilt-back hopper, and design for integrated granulation. The Raptor Series has been designed using the more than 70 years of accumulated knowledge in size reduction, in order to maximize productivity with a minimum cost of ownership. During K 2016, the Raptor Series is on display at the Rapid Granulator booth (Hall 9 – stand E19).

“The Raptor Series is a shredder and granulator hybrid with the shredder’s heavy-duty cutting technology combined with granulator features such as Rapid’s “open hearted” design that makes it super-easy to operate, service and clean,” says Rapid Global Sales and Marketing Director Bengt Rimark. “The Raptor Series has been developed with 100 percent focus on every single detail that is of importance for plastic processors, in order to create simplicity and a minimum cost of ownership. As we develop and manufacture both granulators and shredders, we make sure that the machines are tailored for each other and that we can provide complete recycling systems, direct from Rapid.”

The Rapid “open hearted” design of the Raptor enables quick and direct access to the shredder rotor and cutter chamber, drastically simplifying the cleaning and service process. The front door, hinged on the side, provides unrestricted access to the rotor and to the screen, which is mounted in the door. Once the front door is open, the shredder hopper mounted on a rear hinge can be tilted back.

Rapid offers 36 base configurations of the Raptor in order to handle various customer applications. The modular systems feature two diameters and two widths (31.5” and 53”/800 mm and 1.350 mm). There are two system designs for pushing material into the rotor—FlexiPUSH and PowerPUSH. The PowerPUSH is available with an extended pusher length (PowerPUSH-XT); there are also three different cutting systems: Quad Cut, Claw, and Power Wedge.

The low cost of ownership of the new Raptor Series is accomplished through the ease and speed with which it can be cleaned and maintained. The machine can be in a completely open position in less than one minute after it has stopped running. Once the machine is open, all fasteners are accessible



▣ **Rapid ‘Open Hearted’ design and tilt back hopper gives direct and unrestricted access which drastically simplifies service, cleaning and maintenance.** Photo: Rapid Granulator



Once the machine is open, all fasteners are accessible from the outside using air driven tools. The access made possible by the “open hearted” designs makes any contamination immediately visible.

from the outside using air driven tools. The access made possible by the “open hearted” designs makes any contamination immediately visible. The tilting hopper opens with an electrically operated jack, while the screen and granule bin can be handled by a single operator. The unique screen cradle design does not require the removal of bolts in order to remove the screen, and the granule bin slides out easily. The same tool is used to unlock the front door and to rotate the rotor. As an option, a light can be fitted to provide extra illumination.

The FlexiPUSH is a pneumatically driven pusher and is intended for handling basic applications, including lumpy materials. It can handle large products such as a 1200-L IBC (Intermediate Bulk Container) for example. The hydraulically powered PowerPUSH maximizes output for shredding sheet and film. The cutting chamber features a textured floor to reduce the risk of material adhering or finding its way under the pusher and is offset by 5 degrees to enable liquids to drain away. The unique QuadCUT cutting system for general plastic waste features a solid knife that allows the full use of all four cutting edges. The cutting system is extremely durable and has a rock solid clamping system attaching the knife to the rotor.

Crowning Glory

RAJOO ENGINEERS WILL DEMONSTRATE ITS PENTAFOIL ALL-PE 5-LAYER CO-EXTRUDED BLOWN FILM LINE AT THE K2016

Tailored to meet specific needs, PENTAFOIL all-PE 5-layer co-extruded blown film line helps raise the performance bar of films with an unprecedented efficiency ratio; benefits of down gauging, lower cost of final film, adaptability across applications enhances the ROI still further!

Rajoo solutions are always well accepted on global platforms. At K2016, the difference will be evident when Rajoo will be the only Asian company to demonstrate live, a 5-layer all-PE blown film line @ Hall 15, Stand B04. Come and see how Rajoo takes India to the world! Last K, witnessed the 5-layer barrier film line, now operating successful with a reputed customer in South Africa.



This 5-layer line while ensuring a thin skin layer of property polymers and a thick core layer of inexpensive materials, offers enough versatility for processors to produce films that comply to difficult industry demands with specifications that provide a competitive edge to its customers' business."

Rajoo turns 30 and it is celebrating! To commemorate this, Rajoo Engineers introduces the 5-layer all-PE blown film line to re-define application segments such as collation shrink films, lamination films, milk and water pouches, and more. Indigenously designed and built, this line incorporates the latest advancements in technology such as Cylindrical Spiral Die (CSD), Internal Bubble Cooling, Circumferential Profile Control with elevated air ring and triple lip, full automatic winder and touchscreen based supervisory control panel.

Even with this, the Rajoo "Excellence in Extrusion" continues to remain affordable – an approach that has earned Rajoo global acclaim from users, industry experts and media alike. This 5-layer line while ensuring a thin skin layer of property polymers and a thick core layer of inexpensive materials, offers enough versatility for processors to produce films that comply to difficult industry

demands with specifications that provide a competitive edge to its customers' business, both in terms of diverse film properties and of course costs. The film capabilities with a 5-layer are significant when compared to a conventional 3-layer alternative.

Operating at 600.4 kg/hour, TUV certified it during an onsite visit that the specific electricity consumption under standard conditions for the 5 layer co-extruded blown film line PENTAFOILAPE-RECF-260-90/2400 IBC-A is certified to be 0.3001 KWh/kg of blown film (40 micron thickness, 2000 mm width). This is testimony to the energy efficiency measures taken by Rajoo Engineers Limited!

With a growing bet on automation, this line christened PENTAFOIL-APE RECF 2560-90/2400 IBC-A is with 4 x 60 mm and 1 x 90 mm extruders and 500 mm CSD Die. With a maximum output of 650 kg/hour, the line can produce all-PE film in the thickness range of 30 microns to 250 microns. "I would like to highlight here that the all-PE PENTAFOIL 5-layer co-extruded blown film line is truly eco-friendly in a dual way – one from the environment perspective (by getting more out of less by down gauging and lower energy consumption) and the other from the economics perspective (better performance with cheaper raw materials)," opines Khushboo Doshi, Executive Director, Rajoo Engineers Ltd.

Tailored to meet specific needs, PENTAFOIL all-PE 5-layer coextruded blown film line helps raise the performance bar of films with an unprecedented efficiency ratio; benefits of down gauging, lower cost of final film, adaptability across applications enhances the ROI still further.

**For more information, contact:
Ms Khushboo Doshi,
Email: kcdoshi@rajoo.com;
or visit www.rajoo.com**

Lubrication-free plastic ball bearings

IGUS EXPANDS ITS STANDARD RANGE OF XIROS BALL BEARINGS FOR APPLICATIONS RANGING FROM FOOD TO HANDLING TECHNOLOGY

Ball bearings made of plastic are often a better alternative to metallic solutions, since they are lightweight, are low cost and clean and at the same time have a long service life. To provide an even greater choice to its customers, igus has now expanded its range of dirt-resistant and lubricant-free xiros polymer grooved ball bearings by additional DIN sizes. Whether FDA compliant, electrically insulating, anti-static or resistance to media and temperature, users have six different race materials, four cage materials and three ball materials at their disposal.

To make your way through the full range simpler, igus offers easy to use online tools to select, configure and order. Three steps and a few clicks on www.igus.eu/xiros are enough to configure your ideal xiros ball bearing: Find your matching ball bearing according to the material properties, enter application parameters and calculate service life using the “xiros expert” - the order can then be placed online. For example, by



using glass or polymer balls, the option of a non-magnetic metal free solution is possible. For the cage, which holds the rolling element in position, the PA (polyamide), PP (propylene), PEEK (polyetheretherketone) and xirodur B180 specialty plastics are available, which can be perfectly adapted to the respective application. This is regardless of the fact whether your requirement profile

calls for hardness, wear resistance, chemical resistance, electrical conductivity and high temperature resistance. The same also applies to the race material. Whether low priced (xirodur B180) or abrasion resistant (xirodur S180), wear-resistant at high rotational speeds (xirodur D180) or resistant to chemicals (xirodur C160), anti-static (xirodur F180) or heat-resistant and FDA compliant (xirodur A500). All these material options are available in the scope of the range expansion in dimensions from 3 up to 30 mm in inner diameter. In addition, roller bearings with up to 60 mm in inner diameter are also available.

For information, e-mail to ragesh@igus.in or visit www.igus.in

POLYSTAR presents its technological prowess at TaipeiPlas 2016

Polystar successfully presented its technological advancements at TaipeiPlas 2016. Polystar does not only sell machines, but also provides complete after sales support to the global customers. Due to the cost rising of raw material gradually, recycling issue has become a critical topic in the plastic industry. pPOLYSTAR keeps innovating itself according to the customers' feedback. The company has redesigned its recycling machine to implement the new concept 'Simple in design, Flexible in operation' and for which it has been rewarded with 'Excellence in Research & Innovation Award 2016'. The company has proven its strong product development capability and aims to satisfy the diversified needs from the global customers. The company has won this award for the second time. The main competitiveness of POLYSTAR recycling machine as below:

- 10 percent less power consumption; 20 percent higher output; 100 percent pellets re-usability
- Fast and stable cutter compactor feeding control
- High efficient degassing connected with vacuum pump for environment protection
- Non-Stop dual channel piston filtration system
- Automation Die face pelletizing technology



- nology
- Intelligent pressure detection and alarm control system
- Elegant industrial design
- High efficient output by simple operation

As 'Industry 4.0' concept will play a crucial role in the manufacturing in the near future, Polystar will emphasize developing new solutions, which integrate intelligence and automation control features, such as temperature, pressure, speed detection and data compensation system. Through data analysis and warning to the customer, some defect of the machine can be prevented in advance. Polystar will showcase its new recycling solution in K 2016.

More product information, please visit <http://www.polystarco.com/en/>



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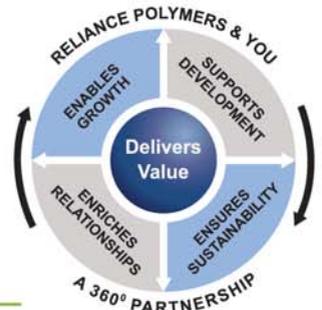
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