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

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Owner Indian Plastics Federation, Printer and Publisher Sri Ashok Jajodia, Published from 8B, Royd Street, 1st Floor, Kolkata 700 016 and Printed from **CDC Printers (P) Ltd.**, Plot No. 5,6,16 & 17, Tangra Industrial Estate - II, 45, Radha Nath Chowdhury Road, Kolkata - 700 015.

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Published by :

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Dear Friends,

I was reading one of the theories propagated by Jack Daly, who is a leader in the area of sales and sales management training. He proposes the SMART theory which I found to be effective in my business decision making and planning. I am just replicating a short snippet to understand what this theory has to offer.

Identify “where you are” – the baseline. You can’t begin moving in the right direction until you know where you are at the present. An effective analogy is to imagine wanting to travel coast to coast. If you didn’t know which coast you were starting from, the journey could be a long and wet one as you started out with just a destination in mind.

Identify “where you want to be” – your end state goal. Putting this in writing is a must; otherwise, it’s a dream, not a goal. Dreams don’t often come true, but goals in writing do. We call this “backward thinking” – determining the end zone and charting back to the present. It’s how you organize your view of the future that determines what the future is.

I’ve heard a number of folks employ the acronym SMART effectively.

The “S” is for Specific. The key is to break down each of our goals into bite-sized chunks that will lead to getting the goal accomplished. One of my goals is to run a marathon (yea, 26.2 miles) in each of the 50 states. I have further broken this down to four marathons per year, and then I went on to identify the specific four marathon events I would run this year. Specificity!

Next is “M”easurable. Inspect what you expect, with a minimum of a monthly review of results compared to plan. Some of the key candidates here for a sales professional include phone calls (inbound/outbound), personal visits, presentations, proposals, orders taken, etc.

“A”ttainable is next on the list. Challenging, yes, but reachable – otherwise we risk the goals being demotivating. This is what I call the “reality test.” If you are the 10th-ranked salesperson in the company, it’s probably not an attainable goal to be #1, at least not in a one-year time frame!

“R” is for Realistic, and often this comes down to time frames. Time blocking and scheduling are the keys to effective implementation. Scheduling your activities is essential to goal attainment.

“T” is for Trackable, which underscores the necessity for the activities necessary to accomplishing the goal to be something which can be tracked and reported. For many years, I have effectively used the simple calendar, in which I record daily activities related to each of my goal action items. I then summarize monthly and compare month-to-month results, as well as year-to-year performance on applicable items.

Too many in business think of goals in terms of only business. Broaden your thinking to personal/life quality goals. I once heard Dennis Waitley put this so well, saying, “Most people spend more time planning Christmas and holidays than they do planning their life.” Make your goals multi-dimensional.

Accountability. This is where you turn the heat up on yourself. Share your goals with people you respect and care about, and establish a system to review your performance with them to garner feedback. This review process should be, at minimum, quarterly. I make it a regular practice of giving my goals to my two adult children, my wife and my two business partners for each to review my progress quarterly. Talk about pressure!

Once the goals are in writing and a system in place to help get the results, identify a few goals that are 1) non-negotiable 2) most difficult and 3) most important. This will further emphasize your focus, and focus precedes success.

With this I wish you a happy, fruitful, effective and action oriented month ahead. Happy reading!

Warm Regards,



Manish Kr. Bhaia

Editor



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P RESIDENTIAL L ADDRESS



Dear Friends,

Wish all members a Very Happy 2016.

Gujarat State Plastics Manufacturers Association held exhibition Plexpoindia 2016 – 7th International Exhibition on Plastics from January 7 – 11, 2016 at Gandhinagar, Gujarat. I had been to Gandhinagar both on behalf of IPF and Plastindia Foundation. This exhibition was held at the same venue Plastindia Foundation held their PI-2015 exhibition. Plexpo exhibition gave us an opportunity to interact with members of the plastics fraternity and discuss issues of common interest.

Consumers today are getting increasingly environment-aware and consciously explore the shelves for brands that provide them with sustainable packaging alternatives. Packaging is an important concern for consumers, particularly those who are interested in converting to eco-friendly and innovative packaging solutions. Reduction in the carbon footprints and use of eco-friendly raw materials constitute new consumer preferences. A leading packaging organisation organises annual distinguished international award in packaging- World Star that illustrates the continual advancement of the state of packaging art and creates a living standard of international packaging excellence.

Coca-Cola Co. unveiled a new plastic bottle made entirely from plant-based materials, but the company has yet to reveal plans for commercial production of the package. The PET bottle, an extension of Coke's Plant Bottle technology, is made from natural sugars derived from sugarcane plants as well as "waste from the sugarcane manufacturing process" that are converted into ingredients used for PET containers. It is an upgrade to the current Plant Bottle, which uses up to 30% plant-based materials per bottle, and accounts for 30% of the Coke's packaging volume in North America and 7% globally. Coke describes the bottle, used for a variety of its soda, water and tea brands, as a key to its vision to develop a more responsible plant-based alternative to packaging traditionally made from fossil fuels and other non-renewable materials." The company aims to convert all new PET plastic bottles, to Plant Bottle packaging by 2020.

This packaging pushes the boundaries on sustainable innovation by using ground breaking technology to create a fully recyclable plastic bottle made from renewable plant materials. Converting natural sugars found in plants into the ingredients for making PET plastic bottles, the packaging looks, functions and recycles like traditional PET but has a lighter footprint on the planet and its scarce resources.

With best wishes,



Pradip Nayyar
President

From the Desk of Hony. Secretary



Dear Members,

I wish all members a Very Happy and Prosperous New Year 2016. May your business grow to greater heights this year, in spite of turbulence in world economy.

The 56th Annual General Meeting of the Federation was held as per schedule at Hotel Golden Parkk on 22/12/2015. The Annual Report of the Committee, Audited accounts and Balance Sheet of the Federation for the year ended 31st March 2015, Budget Estimates for the year 2015-2016 was approved and adopted by the general body of the members. The members also approved re-appointment of our present Auditor as Auditor of the Federation for the year 2015-2016. Thereafter, the AGM was adjourned due to technical reason concerning the process of election of OB and committee members to 29/12/2015. The adjourned AGM was held at IPF office and it was decided to re-initiate the election process for electing the Office bearers and other committee members within 60 days. The Federation will soon decide on the date and venue on which the election of office bearers and committee members will be held. It will be informed to all the members once decided.

After an eventful Indplas'15 – the largest exhibition organised by IPF since its inception, the Federation is now working on the financial gains accrued to the Federation. The accounting work of Indplas'15 is in progress and we shall share more info at the later stage. We had applied for the various awards for the Indplas'15, in the 1st Exhibition Excellence Awards to be held at Greater Noida on 23rd Jan, 2016. We have been informed by the organizers that Indplas'15 has been shortlisted in top 5 entries. The result will be declared on 23rd Jan.

The success of Indplas'15 has motivated us to organise Indplas'18 – 8th International Exhibition on Plastics in a bigger way. The venue of the exhibition has not yet been finalized since it is too early for making any reservation of venue but in all likelihood we plan to hold Indplas'18 in December 2018. During Plexpondia 2016 exhibition held at Gandhinagar, Gujarat from January 7 -11, 2016, I had been to Gandhinagar to build awareness amongst exhibitors that Indplas'18 will be held in December 2018 and shared with them the success of Indplas'15. Most of the Machine manufacturers exhibiting there informed that they got orders more than their expectation and were willing to come back and participate in a bigger space in 2018.

The 3rd IPF Cricket League was played on 16th January 2016 at Pailan ground, Joka. The match league has helped build brotherhood amongst IPF members. This league is sponsored by IPF members and only IPF members and their family members were allowed to participate.

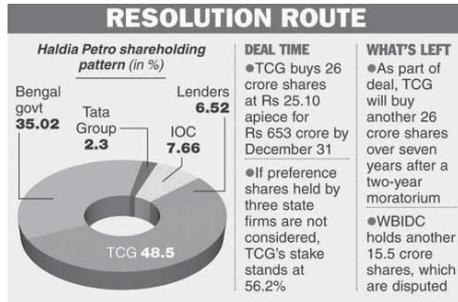
Wish you all, once again a Very Happy New Year 2016 !!!

With best wishes

A handwritten signature in black ink that reads "Ashok Jajodia". The signature is written in a cursive style with a long horizontal line extending to the right.

Ashok Jajodia
Hony. Secretary

HALDIA PETRO STAKE IMPASSE ENDS



The Chatterjee Group (TCG) has emerged as the undisputed single largest shareholder of Haldia Petrochemicals Ltd. (HPL) after it picked up a part of the Bengal government's shares, bringing down the curtain on a decade-old ownership impasse that dogged the state's showcase industrial project.

TCG, headed by Bengali industrialist Purnendu Chatterjee, executed the long-pending transaction by December 31 by coughing up Rs.653 crore for 26 crore shares at Rs.25.10 apiece.

The deal, poised to be one of the largest publicly known foreign direct investments in Bengal in recent times, comes just ahead of the Bengal Global Business Summit this week, meant to showcase the state as an investment destination.

The HPL share sale was crucial as the Reserve Bank had set it as a precondition for a fresh round of loan restructuring, to reduce the interest burden and infuse fresh working capital loan.

Clearing the clutter at HPL could well be one of the top achievements of

the Mamata Banerjee-government as successive administrations had failed to resolve the imbroglio.

Chatterjee and West Bengal Industrial Development Corporation Limited fought a bitter ownership battle in various courts of India and abroad during the tenure of erstwhile chief minister Buddhadeb Bhattacharjee and later Mamata Banerjee.

After finance minister Amit Mitra took charge of the industry portfolio, the relation between the promoters began to look up and the two parties started to work together to bring the company out of the woods.

Following the transaction, which will also qualify as the largest big-ticket divestment that Bengal has ever undertaken, TCG will hold around 48.5 per cent equity in the company compared with 35.02 per cent by state government entities.

However, TCG's stake will go up to 56.2 per cent if the preference shares held by three state firms are not taken into account. Essex Development Investments (Mauritius) Ltd, a TCG entity registered in Port Louis, Mauritius, scooped up the shares in HPL after the transaction.

The deal may also put to rest doubt over TCG's ability to bring in equity fund in HPL. "He (Chatterjee) has brought in whatever he had committed and within the RBI stipulated time frame to facilitate another round of debt restructuring. Over the years, the lenders have been demanding resolution of the

ownership dispute. This has now happened. Chatterjee is clearly on the driver's seat," a source privy to the deal told The Telegraph.

According to an agreement with the Bengal government in September 2014, TCG will buy another 26 crore shares over a period of seven years after a two-year moratorium.

This will leave WBIDC with 15.5 crore shares, which is the mother of all disputes between the two promoters. The issue is likely to be resolved through legal means. Moreover, the state will also have 27.1 crore preference shares.

The government's presence has so far shielded HPL from going belly up several times. Recently, the Union commerce ministry exempted the company from paying Rs.2,277.18 crore in cash on the grandiose ground of "public purpose".

The Centre noted that the Bengal government had provided sales tax remission of Rs.1,877.9 crore already and proposed to give another Rs.3,285.47 crore by way of more incentives, apart from equity, loan, and preference shares.

Set up in 1994 as a joint venture among TCG, WBIDC and Tata Group, HPL began commercial production in 2000. Thereafter, the company went through a roller-coaster ride making profit in some years and plunging to losses in more.

The state government tried to bring in a strategic investor in the form of Indian Oil Corporation but the deal

fell through twice, the last being in 2014.

Observers said the focus would now be on rebuilding the company, making an operational profit now, and take it to a sustained growth trajectory.

Source : The Telegraph

HIGH-BARRIER POUCH MARKET TO GROW 6.1% ANNUALLY TO 2020

According to Smithers Pira's report, global high-barrier pouch packaging totals approximately 49 billion units and consumed 319,000 tons of polymer materials in 2015.

Consumption is forecast to grow at a Compound Annual Growth Rate (CAGR) of 6.1% to 2020, reaching 69 billion units and a market value of almost US\$3.0 billion.

There is rapidly increasing demand for packaging materials that give even greater protection to their contents. This is especially noticeable in the food, beverage and pharmaceutical industries, said Smithers Pira's report, "The Future of High Barrier Pouches to 2020".

High-barrier pouch demand is being driven by several factors including the ability to incorporate value-added features such as resealable zippers and sliders, spouts and handles.

Food markets (retort and non-retort) are forecast to show the highest growth rates during the period 2015–20 for high-barrier pouches. Non-food markets are expected to develop from a low base level,

with drinks and pet food markets growing at the slowest pace.

Non-retort food pouch applications includes fresh and processed meat, dried food, breakfast cereals, snack food and confectionery, dairy products, baby food, powdered instant drinks, hot drinks, fruit compote, ketchup and mayonnaise.

According to the report, non-retort high-barrier pouches are predicted to grow during the forecast period at a rate above the high-barrier pouches market average rate. Fresh and processed meat, snack food and confectionery and dairy products offer good growth potential for non-retort high-barrier pouches.

Juice drinks is the largest area of application for high-barrier pouches in the beverages category, followed by wine. The highest growth has been in fruit compotes and frozen alcoholic cocktails.

Smithers Pira noted that there has been a slower than expected uptake in flexible pouches by soft drinks producers over the five-year period to 2014, as beverage producers believe it is difficult to convey a premium image with a pouch container that is becoming ubiquitous across many different product categories.

Wine is now available in flexible pouches often employing a barrier coating and bag-in-box packs. Single-serve wine demand is growing and pouches offer a light, portable and convenient solution, quality, ease of use and environmentally friendly packaging.

Stand-up pouches also possess advantages that enable them to replace conventional packaging such as glass bottles and metal tins, the report pointed out.

The advantages that are often claimed for barrier pouch packaging solutions over traditional packaging include reduced retort and sterilization time, energy saving and better preserving taste and nutrition values, lightweight packaging material, being economical to transport, very strong and having durable packaging and better shelf appeal.

North America is the largest regional market for high-barrier pouch packaging with a 2014 volume share of 31.9%, followed by Asia Pacific with 27.1%. The high share of the Asia Pacific region is mainly attributable to the well-established Japanese high-barrier pouch packaging market.

Compared to Japan, the rest of Asia Pacific is less advanced in terms of high-barrier pouch packaging demand, but is growing at a faster rate.

The North American and European retort packaging markets have been slower to develop than in Japan due to the competition from the well-established frozen and canned product industries.

In Japan, where these industries were smaller, the development of the retort pouches has been stronger. Furthermore, the widespread adoption of the microwave oven and ever-growing time-pressure on consumers is stimulating demand

for convenient microwavable ready meals in pouches.

While there is overall growth expected in the high-barrier pouches market in 2015-20, Smithers Pira predicted the more mature markets of Western Europe, North America and Japan will grow at less than global market average rates during the forecast period.

Asia Pacific countries such as China and India, as well as South & Central America and Turkey, are forecast to grow sales at higher than market average rates. Eastern European demand for high-barrier pouches, on the other hand, is likely to be restrained by a sharp slowdown in the Russian economy.

Source : China Plastic & Rubber

ADVANCED POLYMER COMPOSITES MARKET TO WORTH US\$12.1 BILLION BY 2020, FORECASTS TRANSPARENCY MARKET RESEARCH

According to Transparency Market Research (TMR)'s new report, the global advanced polymer composites market will expand at a moderate Compound Annual Growth Rate (CAGR) of 7.2% during the forecast period from 2014 to 2020.

Driven by the rising demand from the aerospace industry and the wind energy sector, the global advanced polymer composites market

recorded a value of around US\$7.4 billion in 2013 and by 2020, it is projected to be worth more than US\$12.1 billion.

The aerospace sector held a share of more than 40% in the global advanced polymer composites market in 2013. The demand for advanced polymer composites is predicted to grow significantly due to the rising demand for aircraft carriers around the world.

On the other hand, the global advanced polymer composites market will be constrained by the high production costs of carbon fiber, noted TMR. Nevertheless, players in the global advanced polymer composites market will benefit from the opportunity presented by the automobile sector increasing its demand for advanced polymer composites in the coming few years.

As listed by TMR, some of the key players in the global advanced polymer composites market are Owens Corning, Cristex, SGL Carbon, Solvay, Mitsubishi Rayon, Toray Industries, Cytec Industries, Hexcel, BASF, and Arkema.

Region-wise, the global advanced polymer composites market in 2013 was led by North America with a share of around 38%, followed by Europe and Asia Pacific. Several aircraft makers are based in North America, which will drive the demand for advanced polymer composites in this region.

The Asia Pacific advanced polymer composites market is expected to demonstrate the fastest growth in

the forecast period due to the rising demand from its end-use industries, owing to the economic growth and technological advancement observed in in the past few years, said TMR.

Source : China Plastics & Rubber

PLUGGING THE PLASTICS GAPS IN INDIA

India has the lowest per capita resin consumption of major world markets, with the Northeast region around the city of Kolkata lagging even further behind.

But the industry is eyeing new investment in resin plants and processing infrastructure to help close the gap in the region, which has less than half the per person use of plastic as the rest of India.

During interviews at the Indplas 2015 show, held Nov. 27-30 in Kolkata, industry officials noted new petrochemical investment coming, including projects in Orissa by Indian Oil Corp. Ltd. and Assam by Gail (India) Ltd.

About 46 percent of India's plastics processing capacity is concentrated in states in the west of India, including in Gujarat and Maharashtra, while the east region has only 9 percent of capacity, industry figures show.

Executives expect the new resin capacity in the east will spur more plastics processing investment.

“With [Gail's] project coming up in Assam, another 200-250 [processing] units would likely to

come up in the next few years,” said Pradip Nayyar, president of the Indplas 2015 show and co-chairman of the Plastindia 2018 trade fair.

Some of the new processing plants will be located in polymer parks being developed with assistance from local governments. Polymer parks are clusters of plastics operations including small- and medium-sized enterprises and recyclers.

“We are ready to offer land for a polymer park at Kharagpur and Panagarh,” said Amit Mitra, minister for finance, excise, commerce and industries in West Bengal state, at the Indplas opening ceremony.

The Mumbai-based Plastindia Foundation also has proposed a polymer park, with space for 60 companies, on land about 20 miles from Kolkata.

“A whole lot of possibilities have opened up for the sector with the government’s announcement of various initiatives like Digital India, Skill India, and Clean India, under the ‘Make in India’ program,” said Plastindia President K.K. Seksaria.

Also, West Bengal Industrial Development Corp. is setting up a plastics industrial park for 40 companies in Sankrail, where the Indian Plastics Federation is setting up a knowledge center for skills development.

But to achieve its maximum development, Mitra, the West Bengal finance minister, warned industry to do more to address

perceptions of environmental problems from polymers, and use more biodegradable and recycled plastics.

“The perception towards plastics has to be changed and stakeholders should sit together and find solution,” he said.

Petrochemical plants can become large drivers of investment and employment in processing companies in India.

Executives estimated that the large Haldia Petrochemical Ltd. plastics plant outside Kolkata spurred about 500 downstream processing plants, employing 200,000 direct and indirect workers.

Indian Oil has already started construction of a 1.5 billion pound per year polypropylene plant in Paradip that is scheduled to be commissioned by 2017, said D. Sen, the company’s director of planning and business development. The company will likely invest \$4.5 billion in the next five years at the Paradip refinery on a series of projects related to the polymer sector, he said.

Gail is building an integrated cracker and polymer complex in Assam with production startup scheduled for the middle of 2016. It will have capacity of 485 million pounds per year of polyethylene and 132 million pounds of PP.

West Bengal, which includes Kolkata, has per capita plastics use of 10.3 pounds per year, compared with an Indian average of 21.3 pounds and a world average of 62 pounds.

Source : Plastics News

FINDING NEW LIFE FOR MEDICAL WASTE

This is not a typical plastics recycling story.

One company is taking medical and pharmaceutical waste and turning that hard-to-recycle material into plastic lumber in Pennsylvania.

And there are plans to expand the now-proven process to sites around the country.

Triumvirate Environmental Inc. is not some start-up company with little more than an idea and a sales pitch. The 30-year-old firm, based in Somerville, Mass., does about \$120 million in business a year, primarily in hazardous and medical waste management.

With that long history in the business, the firm has developed a plant in Jeannette, Pa., to take in medical and pharmaceutical waste, which has a high percentage of plastic, and churn out finished plastic lumber under the BestPlus brand name.

“The idea for BestPlus lumber was really borne from the demand from our pharmaceutical and hospital customers on the waste side of the business. The pharmaceutical sector has an industry wide goal of zero landfill by the year 2020. They are looking to recycle whatever they can,” said Triumvirate CEO John McQuillan.

“Medical stuff tends to be heavily packaged and the packaging is, for the most part, plastic. And for the

most part, good plastic that can be used,” he said.

“The problem with this stuff is the plastics tend to be of varying grades of quality and [combined] with non-plastic items such as paper and cardboard. So this stuff tends to be difficult to recycle for ordinary recyclers,” McQuillan said. “We’re in a situation where we take this stuff that is heavily contaminated and we recycle it.”

Triumvirate Environmental acquired two separate companies in 2014 — Medical Waste Recovery Inc. of Jeannette and Northern Plastic Lumber Inc. of Lindsay, Ontario. Equipment from Northern Plastic Lumber was relocated to the Jeannette facility, which now takes in waste and ships out finished plastic lumber under one roof.

The company sterilizes the waste before then separating out any metals and processing the remaining plastic and paper into lumber.

Virtually all medical waste is either sterilized and then buried or incinerated in the United States and Canada, McQuillan said. “Both of which are fairly unhappy alternatives for this waste.”

With the high plastic content in that waste stream, his company started looking at alternatives. The majority of the stream is high density polyethylene, but there certainly are many other plastics as well. The mixed plastic content, as well as the paper and cardboard content, made it cost prohibitive to separate the materials.

McQuillan estimated the waste

stream consists of 70 to 80 percent HDPE and another 15 percent mixed plastics.

“Most plastic recyclers don’t want to see a No. 2 plastic confounded with a No. 3 or 4 or 5, 6, 7, much less do they want to see it confounded with something that is non-plastic. Our process is a very forgiving process. We will sterilize, shred, compound and extrude not only the plastic, but anything that’s riding along with the plastic such as paper, wood or cardboard,” he said.

BestPlus plastic lumber can be colored during the manufacturing process or painted by the consumer.

There is no shortage of medical and pharmaceutical waste customers for the operation, but McQuillan said the company has to be careful about how much feedstock the company takes in.

“The demand on the waste side is insatiable. You’ve got these people who are dying for recycling options for these hard-to-recycle items,” he said. “What I have to be mindful is that I have to make sure I match demand on the front end.”

The Jeannette site has gone from no sales to about \$600,000 per month in less than two years. And Triumvirate has plans to build another five such facilities in the United States now that the company has proven the concept in Pennsylvania.

Employment has gone from 15 to 60 people in Jeannette as Triumvirate ramped up operations over time.

Source : Plastics News

TURNING PACKAGING WASTE INTO VALUABLE RESINS AND COATINGS FOR BUILDING & CONSTRUCTION?

AIMPLAS, the plastics technology center based in Valencia, Spain, is in collaboration with the company Barpimo to develop new alkyd and polyester resins from post-consumed polyethylene terephthalate (PET) packaging for building & construction.

The aim of the two parties is to develop a new process that allow economical transforming of PET packaging waste into high value added products at an industrial level, at a competitive cost and with a low environmental impact.

It is expected to obtain two types of different products. On the one hand, alkyd resins to manufacture enamels and coatings for materials such as metal and wood; on the other hand, polyester resins that can be used in such exigent sectors such as building or transport sectors as pipes or reinforced composites with glass fiber.

The project RESIPET is co-funded by the Ministry of Economy and Competitiveness and the FEDER funds within the National Programme for Research aimed at the Challenges of Society.

Source: CPRJ Editorial Team

SPI: PLASTICS LEADING THE CHARGE FOR ECO-FRIENDLY PACKAGING

The Plastics Industry Trade Association report, "Packaging Market Watch: Plastics Packaging Wraps it Up", plastics is a leading packaging choice among manufacturers who desire environmentally-sensible, inexpensive product options.

The report incorporates the expertise of Ken Gronbach, a multi-generational marketing expert and author; the Society of Plastics Engineers (SPE); the US Environmental Protection Agency; and others.

Of the US\$700 billion global packaging industry, plastics accounted for one-third or US\$250 billion of the packaging industry, the report said. It is also the largest single market for US plastics.

"Plastic packaging is ubiquitous due to its many advantages over other material choices," William R. Carteaux, SPI's President and CEO, commented. "Plastic products are lighter, use less energy to produce and transport, and have multiple recycling and recovery options. Through cutting-edge science that's produced bioplastics and other innovative applications, the plastics industry has answered the call of consumers who are deeply committed to reducing their carbon footprint."

If plastics were not used for packaging, other types of packaging would require 64 million metric tons of material, increasing energy waste by 80%, estimated the Franklin Associates, a Kansas-based research firm quoted in Market Watch. The result would be a 130% increase in the carbon footprint.

Therefore, polymers consistently substitute for other materials in packaging because of their weight, strength, design flexibility and low cost. The global polymer industry is expected to grow with a Compound Annual Growth Rate (CAGR) of 3.9% over 2015-2020. The demand for polymers is driven by growth in end use markets, like packaging, mainly from emerging economies, according to the report.

Source : China Plastics & Rubber

IT ALWAYS SEEMS IMPOSSIBLE UNTIL IT'S DONE

It's that time of year again—the time to look back at what was, and to look forward at what will be. Or, at least, shall we say, at what might be.

One of the more striking developments in 2015 was the increasing visibility of the concept of the circular economy. It's a concept that has been bandied around for the past several years, but this year, it seems suddenly to have zoomed into focus. The circular economy impacts on every aspect of economic activity as we know it. The linear economic system we have

today—'take, make, waste'—has been extraordinarily successful in delivering economic development during the 20th century.

Yet, there are a number of signs that this has started to falter. Hence, as the price volatility of commodities continues to grow, combined with the increasing threat of resource depletion, the search for alternatives has intensified. Defined by the World Economic Forum as "an industrial system that is restorative or regenerative by intention and design," the circular economy is rapidly capturing attention as a way of decoupling growth from resource constraints. It is a system, therefore, in which, among other things, renewably sourced plastics will play a major role.

It is also a role that still remains to be defined, at least in Europe. Biobased materials will ideally tap the waste feedstock from other value streams (e.g. agricultural waste, and manufacturing byproducts such as wood chips). However, earlier this month, the European Commission adopted an ambitious Circular Economy Package, which includes revised legislative proposals on waste to stimulate Europe's transition towards a circular economy.

In it, the Commission acknowledges that 'biobased materials present advantages due to their renewability, biodegradability and compostability.' Yet, here, too, enough work remains to be done: the proposals fall short of fully recognizing the advantages of organic waste collection

for Europe, leading European Bioplastics Chairman François de Bie to point out that “even though production will continue to grow, forecasts show that in 2019, more than 95% of bioplastics production capacities will be located outside of Europe. If EU Member States want to make full use of bioplastics' environmental, economic and social potential, they need to tackle the problem of limited economic and political support.”

“It always seems impossible until it's done,” said Nelson Mandela, who, in his time met numerous challenges and overcame seemingly unsurmountable obstacles. But he also said: “We must use time wisely and forever realize that the time is always ripe to do right.”

The transition towards a circular economy offers exciting opportunities for the bioplastics industry, both in Europe and elsewhere, wherever this shift is taking place. And, while no one expects this transition to be complete any time soon, the good news is that it has now gotten under way, and that renewably sourced materials are viewed as part of the solution. As the Ellen MacArthur Foundation points out, in the future: “The rapidly evolving materials landscape could be screened and potentially guided towards more reusable materials—potentially even those that are fully biobased and regenerative. A take-back system would also be needed to ensure that products are returned and reconfigured as feedstock” closing the loop, in other words.

Another aspect of the circular economy is a new way of looking at pollution by greenhouse gasses. As the importance of carbon capture and storage becomes increasingly evident, a development that looks as if it actually has legs is that of carbon dioxide-based polymers. It's an area that is generating enormous interest, especially as one of the top headline-grabbing issues of 2015 around the world was that of climate change. Floods, droughts, typhoons, retreating glaciers, melting pole caps, wildly erratic weather conditions: the effects were everywhere.

With emissions from burning fossil fuels—‘old dinosaurs,’ as my colleague Clare Goldsberry recently wrote—constituting the major contributor to the problem, it's heartening to see that serious efforts are finally being made to address the problem. According to the International Energy Agency, 82% of the world's energy supply is derived from fossil fuels. While cleaner energy sources are on the rise, overall energy demand is expected to grow 37% by 2040, making immediate carbon mitigation solutions even more urgent.

Plastics based on carbon dioxide “pollution” offer one promising route to carbon sequestration. A pioneer in this area is Novomer, based in Waltham, MA, which recently captured a pair of honors at the 2015 Polyurethanes Technical Conference for, among other things,

its competitively priced CO₂-based Converge Polyol RF-x polyols. Yet, a host of other companies are also active in the development of polymers derived from greenhouse gas feedstock: Asahi Kasei (Tokyo), Oak Bio (Sunnyvale, CA), Newlight Technologies (Costa Mesa, CA), Mango Materials (San Francisco, CA) and Covestro (Leverkusen, Germany) are just five that immediately spring to mind.

Also, interesting in this context is the launch in September 2015 of the NRG Cosia Carbon XPRIZE prize, aimed at spurring innovations that will convert CO₂ emissions into valuable products. It will run through March of 2020 and a total of US\$20M will be awarded to winning teams.

“Through innovation in carbon capture technology, we hope to challenge the world's brightest minds to find a solution that helps solve emissions problems, and simultaneously creates viable products that we use every day,” said Sicily Dickenson, Chief Marketing Officer, NRG.

Plants do it without even thinking and so does coral. They turn carbon dioxide into sugars, starches and cellulose using the sun as their energy source. It's something to look forward to: a cleaner, renewable, economically viable alternative and a sustainable future for when we finally finish up all the old dinosaurs.

Source : Plastics Today

EVEN THE SUSTAINABLE PACKAGING COALITION ISN'T BUYING BIODEGRADABILITY

Science appears to be taking the upper hand at the Sustainable Packaging Coalition (SPC). A paper, titled "The SPC Position Against Biodegradability Additives for Petroleum-Based Plastics," and an open forum webinar held on this topic on Dec. 16 are enlightening in this regard. It seems that SPC, which "takes a material-neutral, lifecycle-oriented approach to packaging sustainability with a goal of enabling and encouraging a more sustainable economy for all materials," has found in its studies—and concluded—that the use of "biodegradability additives for conventional petroleum-based plastics . . . do not offer any sustainability advantage and may actually result in more environmental harm. These additives should not be used," says SPC.

The formal position paper against the use of biodegradability additives in plastics explains that one of the problems is that the term biodegradability "suggests that nutrients will beneficially return to the environment at the material's end of life." Yet it is actually compostability that is the "superior and preferred indicator of a material's ability to result in nutrient renewal and reuse."

Compostability is defined as a "material's ability to successfully undergo a managed process that controls biological decomposition and transformation into a stabilized organic matter within a specified period time."

Compostability, in other words, is a controlled (manmade or managed) process. "The characteristic of biodegradability in itself does not mean that the material will break down in a reasonable, useful amount of time, nor that it will result in any soil-enriching biomaterial." The term biodegradable is misleading, says the SPC position paper, because it causes consumers to assume that the plastic materials labeled as such will break down into useful bio-nutrients into the soil or water. "Petroleum-based plastics made with the currently available biodegradability additives do not break down in such a manner; to date, these additives have not enabled any plastics to become fully compostable," said SPC.

SPC stated that a major problem with biodegradability is its negative impact on recyclability, an optimum end-of-life scenario for petroleum-based plastics due to two inherent attributes that make recovery ideal: "Their high embodied energy content qualifies their value for controlled energy recovery, and their exceptional durability renders them ideal for recycling." Biodegradability additives, "by design, are intended to compromise that exceptional durability," and to date there is no "satisfactory evidence" that plastics with

biodegradable additives will not interfere with the recycling stream. Additionally, says the SPC position paper, "petroleum-based plastics . . . are not bio-based, and the addition of biodegradability additives does not change that characteristic."

Another problem that SPC notes in its position paper is that most additives are "designed to fragment petroleum-based plastics into small pieces in order to make it sufficiently available to the microorganisms that perform biodegradation." While these micro pieces of plastic cannot be seen by the human eye, they contribute to the "environmental impact of micro-pollution." Hence, there is a problem with marketing biodegradable additives as being "less detrimental to the environment" because they may contribute to improper end-of-life disposal and pollution.

People love plastic for its usefulness and longevity; they just want it to disappear when they are done with it. SPC referenced a 2006 study by the American Chemistry Council, which concluded that "when a consumer sees the word 'biodegradable' on a package, about 80% of consumers believe that the package will completely decompose, regardless of the environment in which the package is disposed."

In other words, people want "magic" plastic that disappears!

That is why in 2008 the state of California banned use of the terms "degradable," "biodegradable," "compostable" and similar verbiage

on plastic products, determining that they are "inherently misleading. Given the complex nature of biodegradation . . . and given the intrinsic constraints of marketing claims, including the space on the plastic product, there is no reasonable ability for plastic product manufacturers to provide an adequate disclaimer. . . . Given these and other constraints, and the significant environmental harm that is caused by plastic litter, the use of these terms must be prohibited unless, or until, is established an American Society for Testing and Materials (ASTM) standard specification for the term claimed that has been approved by the legislature," says the California statute. Currently, ASTM D6400 is the standard for biobased plastics.

Oxo-degradable additives have become a popular method to promote biodegradability in plastics in a marine environment. However, studies conducted by the Chico Research Foundation at California State University "have shown that plastics with oxo-degradable additives did not successfully biodegrade in marine environments." Like other biodegradability additives, oxo-degradable additives create "fragmentation" that gives the "appearance" that the plastic has disappeared. However, oxo-degradable additives typically used in plastic bags, do not make the bags compostable, but rather degrade by oxidation. However, there are some claims that oxo-degradable additives are more dangerous to

the environment due to the fact that they consist of "salts of transition metals such as iron, cobalt and manganese," leaving traces of these metals in the soil as the oxo-degradable plastics fragment.

A report released by the Pacific Northwest Pollution Prevention Resource Center in Portland, OR, noted that while oxo-degradable plastic manufacturers "claim the material is recyclable and compostable, and degradable in landfill," studies show that "these bags are not compatible with recycling or composting."

Of course those companies who have invested millions of dollars in manufacturing biodegradable additives will argue that biodegradable additives are optimal, while the oxo makers will claim their products make plastics more eco-friendly. It all depends in which basket they've put their eggs. Private companies need to make a good return on their investment, so their sympathies lie with their money.

At this point, we can read all the arguments for and against the various means and methods of getting rid of plastic at the end of its useful life. After all is said and done, however, what we need to do is to look at what solution provides the greatest value and the best return on investment for that solution. We have to look at the input required to recycle, compost, degrade and produce waste-to-energy, and the resulting output in terms of value—both monetary and environmental.

Ultimately there is no single magic bullet that can make plastic disappear. And I don't think that most people want plastics to disappear. What we'd like to see disappear is the litter in our communities and in the world's waterways. And that's not a plastics problem—that's a people problem. An additive that makes plastic litter "degrade" to fragments in 180 days is not exactly what I'd call a solution.

Source : Plastics Today

NEW STRETCHABLE POLYMER EXTENDS DESIGN POSSIBILITIES OF WEARABLE ELECTRONICS

Responding to demand for a conformable material that combines heat resistance and durability, Panasonic (Osaka, Japan) has developed a soft and flexible resin that can repeatedly stretch more than 2.5 times its relaxed length and return to its original form without damage. Combined with a transparent electrode material and material paste, also developed by the company, the insulating material made of a thermoset resin augmented by Panasonic's proprietary resin design technology is well suited for wearable devices, among other applications.

The new material adapts to desired manners of folding and to varying free-form surfaces, according to Panasonic, substantially reducing existing design constraints.

Typically, materials that are stretched repeatedly tend to degrade in mechanical strength and recovery performance over time. To prevent this, Panasonic has optimized the three-dimensional cross-linked structure of the thermosetting resin, distributing mechanical stress consistently across a large area. By relaxing the internal stresses that come with repeated stretching, the material can help to realize electronic devices that remain wearable for an extended period of time.

Using this stretchable resin as a base material, Panasonic has also developed a transparent electrode material and conductive paste that remain conductive after repeated cycles of stretch and restore. The transparent electrode material comprises a thin conductive layer of carbon nanotubes formed on the base material. A conductive paste was produced by combining the stretchable resin, used as a binder, with silver filler.

The proprietary resin technology imparts the following properties, according to Panasonic data:

- Tensile elongation that exceeds 2.5 times the relaxed state
- Percentage of stress relaxation of 60%
- Recovery rate of 98% or more

In addition to wearable devices, the material can be used in a range of other applications including sensors, displays and robots, according to Panasonic.

In the wearables sector, in

particular, the material may be a game changer, as it shifts the design equation from bulky devices to electronics that are easier to apply to the skin, more like a Band-Aid than a watch. The wearable device market is surging, as we noted in a recent article, "How medtech will—and will not—change in 2016." In 2015, 39.5 million U.S. adults 18 and over used wearable devices, including smartwatches and fitness trackers—an increase of 57.7% over 2014, according to digital marketing company eMarketer. It predicts that growth will continue in 2016 and beyond, with 81.7 million adults using wearables by 2018. The wearable medical device segment of that market is especially robust, reaching a value of more than \$41 billion by 2020, according to some estimates.

As noted in the aforementioned article, materials have a unique role to play in the development of medical-related wearables that people will actually wear. Although Panasonic does not make mention of potential medtech applications for its newly developed polymer resin film in its press release, the material's elasticity and softness seem to indicate that it has a solid future in this application area. By combining the stretchy resin with silver to make a conductive paste that could help affix stretchable displays to clothing or skin, "the development could help biosensors and medical monitoring devices become less obtrusive," notes Hilary Brueck in an article

Source : Plastics Today

ABS PRICES HIT 5-YEAR LOW IN CHINA

In China, both import and local ABS markets have hit the lowest levels since the beginning of 2012, as per Chemorbis. New prices emerged with fresh declines for December driven by lower production costs in Asia with respect to a month ago. Players also blamed muted demand heading to the year-end amidst a slower economy in China as another reason behind the renewed price drops for ABS.

A source from a producer commented, "Converters are not purchasing beyond their immediate needs given the volatile upstream chain which keeps overall demand slack. Supply, meanwhile, is regular. We believe that activity will not show any improvement in the near term unless crude oil prices witness a notable increase. We are currently operating our plant at 80-90% of capacity." Another ABS maker was said to have reduced their operating rates for the first time in years in order to keep their offers stable for December. They are running their 830,000 tpa plant at 85% from the previous 100% nowadays.

A Shanghai based trader commented on the local ABS market, saying, "The local market is performing weakly. Most players are still waiting to hear new offers from producers and are not in a hurry to replenish their inventories yet."

Meanwhile, media reports showed that total domestic production of

household air-conditioning units declined 27% on the year in October while domestic sales were also down 31.3% from a year earlier, suggesting weakness in a major ABS application. An agent of a South Korean ABS maker in Turkey argued this week, "ABS and HIPS prices are almost on par recently although ABS should traditionally carry a premium of up to US\$200/ton over HIPS. ABS makers will try to recover their margins at some point." New December offers were announced with drops of up to US\$30/ton to this country.

Looking at the upstream chain, spot styrene costs were down by US\$35/ton on FOB South Korea basis since early November, while butadiene prices plunged by around US\$95/ton in the same period amidst fluctuating energy costs during the last one month. Spot ACN prices, in the meantime, soared US\$65/ton on CFR Far East Asia basis from a month ago as reported on www.ChemOrbis.com.

Source : Plastics News

POLYPROPYLENE MARKET TO REACH US\$133.3 BLN. BY 2023

The global polypropylene market was valued at US\$81.6 bln in 2014 and is predicted to reach US\$ 133.3 bln by 2023, as per Transparency Market Research. It is expected to expand at a 5.7% CAGR in the forecast period between 2015 and 2023. The rising demand for polypropylene within the food and beverages packaging industry,

along with the rising demand for lightweight vehicles, is predicted to fuel the market for polypropylene in the coming years. On the other hand, the rising concern regarding the hazardous effects of plastics on the environment and the unpredictable prices of raw materials may inhibit the growth of the market for polypropylene in the coming years. To overcome this obstacle, manufacturers of polypropylene are focusing on bio based polypropylene, which will bring in new opportunities by the end of 2023.

On the basis of end user, the polypropylene market is segmented into automotive, packaging, electrical and electronics, consumer products, construction, and others including agriculture, medical, furniture, etc. Amongst these, in 2014, packaging dominated the market, representing a share of over 45% and is also the most swiftly developing end-use segment in the polypropylene market. This is due to the fact that polypropylene has significant uses in both rigid and flexible packaging because of its resistance to high temperatures and strong chemicals. The automotive end-use segment trailed the packaging segment and took the second biggest share in the market the same year. Polypropylene presents the right amount of mechanical strength and flexibility and provides a high-quality surface finish in vehicles. Polypropylene is also lightweight - around 15-20% lighter when compared to other plastics. This lowers the total weight of vehicles and as a result reduces fuel consumption and resultant

carbon dioxide emissions. Hence, the growing demand for lightweight motor vehicles in developing and developed economies is accelerating the global market for polypropylene.

On the basis of geography, the polypropylene market is segmented into Europe, North America, Latin America, Asia Pacific, and the Middle East and Africa (MEA). Amongst these, in 2014, Asia Pacific constituted a share of more than 50% in the global market for polypropylene and is predicted to rise even more by 2023. The demand for polypropylene is predicted to rise in India, China, Brazil, and the Association of Southeast Asian Nations (ASEAN), owing to rising demand for food containers within these countries. Additionally, the increasing number of supermarkets within these countries is further raising the demand for polypropylene in the packaging industry. On the other hand, Latin America is predicted to increase at an above-average rate owing to rising polypropylene demand from the automotive, construction, and packaging industries. Europe is a stagnant market for polypropylene, however, the rising automotive industry in this region is expected to fuel the polypropylene market in the forecast horizon. BASF SE, Total S.A., Braskem, LyondellBasell Industries N.V., SABIC, Borealis AG, Sinopec, and Reliance Industries Limited, among others are the key players dominant in the market.

Source : Plastics News

LATEST DEVELOPMENT OF EXTRUSION PROCESS

Extrusion is one of the most important techniques in plastics processing, responsible for producing roughly 40% of the world's plastics products. This article illustrates five major trends in extrusion development: bigger capacity, higher efficiency, smarter and better connectivity, larger scale and more precise production.

As an important plastic processing method, extrusion molding is almost applicable to all thermoplastics and extrusion molded products account for 40% of all plastic products. While constantly meeting the diversified needs of plastic products, new plastic processing technologies are witnessing booming application market.

Multilayer co-extrusion molding

In recent years, multilayer co-extrusion molding technology has been extensively favored by flexible packaging production enterprises. Compared with traditional composite molding process, co-extrusion molding technology has the following features: ❶ Give full play to the intrinsic characteristics of various materials to produce products for special purposes; ❷ Short molding cycle, low energy consumption and low environmental pollution; ❸ Diversified products for extensive applications. Specifically, one product may have the outstanding characteristics of several different materials.

Jingming Machinery is first enterprise in the Asian Pacific region to turn out 11-layer high-barrier cast film equipment. This equipment features outstanding processing performance and high output, representing the most advanced manufacturing technology in the international market. The 9-layer high-barrier film blowing equipment from Jingming Machinery is mainly used to produce 5-layer+ film of various specifications to meet the packaging needs of high-barrier performance for gases (such as O₂, N₂ and CO₂) and thus meet the packaging purposes to maintain flavor, keep fresh, preservative and gastight and extend shelf life. In addition, the 5-layer co-extrusion blowing equipment from Austrian SML Lenzing consists of 5 extruders and features 2500kg/h in production capacity. The 5-layer co-extrusion blowing equipment from Canadian MACRO reduces thickness tolerance to 5% when processing film and reduces material consumption by over 20% than similar multilayer film equipment. The 7-layer co-extrusion blowing equipment from FoshanJiele features 0.025~0.200 mm in film processing range, 1800mm in maximum width and ±3% in thickness tolerance.

Microcellular foam extrusion molding

Microcellular plastic is lightweight and material saving. In addition, it features low heat conductivity, excellent impact load absorptiveness and outstanding buffer performance, sound

insulating performance and high strength. As a result, it is extensively used as lightweight structural material for noise reducing, heat insulating, antifreezing, thermal insulating, buffer and shockproof purposes in such sectors as transportation, construction, packaging, everyday articles, aerospace and national defense. Microcellular plastic production has become an important sector of the plastics industry. Therefore, it has become a hotspot to research and develop microcellular foam. Promising remarkable performance and extensive applications, microcellular foam has attracted extensive attention from many developed countries. Many prestigious corporations, such as U.S. Trexcl (MuCell process), Microcellular Plastics Technology and Axiomatics, Japanese SeKISUI Plastics of Tokyo and Austrian Engel, have been engaged in application development and commercial promotion of microcellular foaming technology. The foam extruding system developed by Japanese plastic auxiliary equipment manufacturer KAWATA using microcellular foaming technology (MFC) can promote the development of high-foam biodegradable injection molded products. In addition, this technology can mold microcells and precontrol their quantity.

Precision extrusion molding

Precision extrusion is a process to maintain precise control on extrusion process elements, high precision on geometric dimension for products and high uniformity

on microcosmic structure for materials, mainly including three technical contents such as precise plasticizing, precise control and precise molding. The precision extruding system used by U.S. Precision Extrusion, Inc. (PEI) for medical catheter production leverages special design and manufacturing technology and SPC (Statistic Process Control) technology such that the system can keep temperature deviation for different temperature sections within $\pm 1^{\circ}\text{C}$ and keep pipe wall thickness deviation within 2%.

High-speed extrusion molding

High-speed extruder has a full range of advantages from high torque, high thrust, high-performance, high-strength alloy steel gear and axle, operator-friendly control interface, high-speed extrusion, high quality and high output, making a plastic processing machine extensively favors by users. High-speed extruder screw needs longer melting section and greater L/D ratio (normally L/D=30:1~40:1) to provide higher output at identical screw speed. For most high-speed extruders, their screw diameter is 60~75mm, seldom exceeding 90mm. Kuhne can provide high-speed extruders with 60~72mm for screw diameter and 33:1 for L/D ratio. BEX can provide high-speed extruders with 75mm for screw diameter and 34:1~40:1 for L/D ratio to optimize output. The high-speed extruder with 72mm in screw diameter from Kuhne is now used by Orka/Hipol in their PP and PS sheet production line and its production speed is up to 900r/min.

FaerchPlast of Czech is now using Battenfeld extruder with 1500r/min screw speed to extrude PP sheets.

Super shear plastic extrusion molding

Super shear plastic extrusion molding leverages the transport mechanism of normal stress. In operation, materials enter via the larger end of the eccentric cavity. Then, they are pushed to the smaller end of the cavity by blades and extruded to the next cell. In this process, materials are ground, pressed, vented and plasticized under the action of normal stress. In the extruding process, the impact of die head pressure on extrusion output is insignificant and extruding performance is remarkable. In addition, the dwell time of materials in the extruder is more uniform, thus reducing the heat experiencing deviation of materials and effectively improving product quality. The SSPE-40 Super Shear Plastic Extruder developed by South China University of Technology exhibits excellent dispersion effect and materials go through without dwelling. In addition, maximum LDPE extrusion output may reach 55kg/h and energy consumption is no more than one third that of conventional screw extruders. Another model is SSPE-80 with extrusion output up to 200kg/h.

Multi-screw extrusion molding

As another innovation in extruding machinery, multi-screw extruder leverages its advantages such as flexible arrangement, multiple engagement zones, low L/D ratio, high production capacity and excellent blending property to meet

specific requirements on polymer processing quality, elaborate output, serialization, functionality and low cost, thus attracting increasingly more attention. This system has found excellent applications in production of functional plastic and high-gloss coating and processing of new-type nutritious fast food excellent in color, flavor and taste.

1. Three-screw extrusion molding

Unlike single-screw or twin-screw extruders, three-screw extruders don't need large diameter or high L/D ratio to accomplish production conditions of identical quality and output, thus fully exhibiting the advantages of three-screw extruders such as high blending homogeneity, structural compactness and cost-effectiveness. In collaboration with enterprises, Beijing University of Chemical Technology Institute of Plastic Machinery and Engineering successfully developed delta-arranged fully engaged three-screw extruder. As shown by practical application of industrial prototype, three-screw extruder features reliable operation, lower specific energy consumption, greater blending capacity and excellent venting performance, thus exhibiting excellent technical and economic advantages. As one of the first enterprises to research and develop three-screw extruders, Shijiazhuang Debeilong Technology has successfully developed two series (LTS in-line series and TTS inverse-triangle series) and 5 models of three-screw extruders and both series outperform twin-screw extruders in blending quality, output,

energy consumption and venting performance.

2. Planetary screw extrusion molding

For planetary screw extruders, the most important part is the planetary section, which plays an important role in ensuring excellent plasticizing and blending effect, short dwell time, high extrusion output, low energy consumption and excellent aids dispersing effect. Since its birth, planetary screw extruders have been most frequently used for medium flexible and rigid PVC blending and pelletizing, calender feeding and coating. The planetary roller sheet extruder from Battenfeld-Cincinnati Plastic Equipment for A-PET sheet production is particularly suitable for PET processing and production and via its revolving planetary shaft, this extruder has extremely large specific surface and high surface updating speed. Without needing pre-drying, this extruder features energy saving, high flexibility, low cost and excellent wear resistance.

A planetary extruder from German Gneuss for drying and PET bottle flake processing is similar to Extricom Ring extruder in principle but has a conveyor screw at each end of the planetary system. The extruder has 8 or 10 planetary screws, and melt flows between these screws and master screws. As a result, the surface generates 25 cycles more than conventional extruders. The ring extruder, a planetary screw extrusion molding machine from German 3+Extruder, consists of 12 screws with 26.525mm diameter for each screw, up to 119.38mm for

maximum diameter and 19.05mm diameter for laboratory use, making it the largest system for a recycling facility in Germany.

Energy-saving extrusion molding

For extruders, energy saving comes from two parts: One is the power section and the other is the heating section. To save energy, the power section mostly uses AC servomotor.

This approach improves the product grading and quality for plastic extruders, reduces energy consumption by 30~60% compared with three-phase asynchronous motors, and in addition, it has smaller footprint and higher cost performance than DC servomotor.

GLSS-65X35 extruder from L&S leverages low-speed high-torque AC servomotor to directly drive screw plasticizing and extrusion, thus accomplishing 500r/min in maximum speed, 1000kg/h in maximum extrusion output and 15~20% in energy saving. Traditionally, the heating section often uses resistance wire heating approach to save energy, thus resulting in higher ambient temperature. This not only wastes energy, but also deteriorates ambient working environment and causes environmental pollution. To deal with this challenge, energy-saving and environment-friendly heating approach has become a R&D focus for plastic extrusion.

UHMWPE extrusion molding

Ultra-high molecular weight polyethylene (UHMWPE) is a new type of thermoplastic engineering plastics and its viscosity-average molecular weight is up to 1,000,000

to 8,000,000. Thanks to extremely high molecular weight, UHMWPE has far better performance than other plastics and can substitute metal materials such as carbon steel and stainless steel, thus extensively used in textile, papermaking, food machinery, transportation, metallurgy and coal. Based on single-screw ejection approach, Beijing University of Chemical Technology successfully developed melt extrusion-grade UHMWPE extrusion equipment and accomplished batch production. In cooperation with Beijing University of Chemical Technology and leveraging UHMWPE macromolecular chain disentangling technology, Shanghai Research Institute of Chemical Industry has basically completed the research and development of 2,500K+ melt extrusion-grade UHMWPE pipe materials and those melt extruded pipes can match those processed via ejection method in smoothness and roundness and outperform them in efficiency. Currently, extrusion speed is up to 15.0m/h, 6~10 times faster than ejection method in extrusion speed.

Extrusion molding equipment is one of the three plastic machines. In general, the development direction for extrusion equipment is to accomplish higher speed, higher efficiency, more energy saving, higher intelligence, functional diversity and specific applications. With the constant development of high molecular materials and plastic products, this will help give birth to more new-type extrusion molding equipment with unique features.

Source: CPRJ Editorial Team

India Can Offer a New Way of Thinking to the World

Dr. Devdutt Pattanaik

The new edition of the much anticipated literary festival in the country has just been announced. The Bangalore Literature Festival will be held at the Royal Orchid hotel (Near KGA) on 5-6 Dec 2015.

The two-day festival will feature writers from India and abroad. Kulpreet Yadav interviewed one of the bestselling Indian writers, Devdutt Pattanaik, who is scheduled to speak at the festival. Devdutt, a trained doctor, writes on Indian mythology and symbology, illustrates his own work for his books, and is one of the most sought after speakers in India.

Kulpreet Yadav: Where do you place contemporary India in our increasingly shrinking world where cultural identities are mutating by the day & scientific advancement the only litmus to measure success?

Devdutt Pattanaik: I think India can offer a new way of thinking to the world, provided we rein in one thing: an obsessive desire to mimic the West. We are mimicking the West in both the Left and the Right and are forgetting India offers a unique worldview that enables the world to include diversity and dynamism. We are so obsessed with measurement and objectivity that we have stopped valuing the subjective, the inter-personal, and the cultural and are embarrassed by femininity.

KY: By agreeing to your idea of India and its being at peace with itself, some argue we might lose an edge in a globalised world. Is it a better idea to find strength from our myths, legends and symbols? Or we should be open to accept other cultures, values and belief systems even if they are not aligned with our way of thinking.

DP: What is the point of life? Is it to dominate others, or to find happiness? We have to ask this question. The globalized world has decided that 'having' more creates happiness. They simply created power hierarchies where the powerful are those who deprive others of property. The globalized world is one that is increasingly becoming technocratic. We find more pleasure and security in WhatsApp. We avoid conversations and connections. Even on a date, there is a tendency to connect via an App. Is that a world that we find aspirational? Whether we accept other cultures or not, we will always be influenced by them. The point is to include them, rather than let them overwhelm us as we are ashamed or unaware of our own belief systems. We need to contribute to the globalized world, not just be passive recipients. For that we have to actively engage with who we

are and not simply engage with Western versions of who we are.

KY: The western idea of happiness through alcohol and other forms of debauchery is rising in India. Bars are mushrooming, the western movies and television shows are a rage among the young, and pairing food and wine the very idea of a great evening etc. How do we make spirituality and mythological relevant to our future generation. Make our myths and legends cool, more fun maybe? You have written a lot of books for children. That is certainly one of the ways forward. What more?



DP: Where did you get that thought from? Varuni, goddess of wine, was churned out of the ocean of milk, according to the Puranas. Bhairava, a form of Shiva, is offered wine. Offering wine is part of many tribal and folk traditions. We have assumed that 'Monastic Hinduism' that rose from 10th century AD/CE, is 'real' Hinduism; hence we shun all form of pleasure. We deny the truth of our scriptures and present it in a puritanical way because of this monastic obsession. We also try to see Hinduism through a Western lens and so try to shape our children's story to 'protect'

them from reality, which is hardly good parenting.

KY: You are one of most read and highly rated Indian writers. What are the three things in your writing you can attribute this success to?

PS: Honesty, clarity and simplicity.

KY: Out of the 31 books that you have written, only one is fiction. Why do you rely more on nonfiction than fiction to convey your stories? Doesn't writing fiction give you more bandwidth to play around, to excite and entertain the readers by dovetailing your own imagination?

PS: I am interested in mythology and all books present various aspects of mythology to different audience. Even the fiction story is part of this process. Mythology expands your horizons and creates a wider framework of writing fiction. Our own imagination is rather limited. Most fictions simply endorse this limited reality. Mythology helps us appreciate the wider world of our ancestors.

KY: What are the three things that strike you the most about Bangalore as a writer, both good and bad?

PS: I like the food, the weather and the people of Bangalore. I hate the traffic, the roads and the increasing Americanisation.

C I R C U L A R

TO ALL MEMBERS OF THE FEDERATION

MEMBERS ARE REQUESTED TO SEND THEIR GRIEVANCES / PROBLEMS FACED ON VAT / CST / ENTRY TAX ETC. IN DETAILS ALONGWITH SUPPORTING DOCUMENTS TO THE IPF SECRETARIAT SO THAT WE CAN PUT THE SAME TO THE CONCERNED AUTHORITY.

PLEASE SEND THE SAME TO THE HONY. SECRETARY, INDIAN PLASTICS FEDERATION
8B, ROYD STREET, 1ST FLOOR, KOLKATA – 700 016.

E-MAIL: office@ipfindia.org, FAX : 22176005

FREE CONSULTANCY OFFER TO IPF MEMBERS

MEMBERS WANT TO SET UP NEW PLASTIC INDUSTRY AND TO AVAIL SUBSIDY AND OTHER GOVERNMENT BENEFITS AVAILABLE FOR MSMES' MAY CONSULT WITH **MR. PINAKI SINHA ROY, EX-PROJECT MANAGER, DIC AT IPF SECRETARIAT, 8B, ROYD STREET, 1ST FLOOR, KOLKATA – 700 016 ON EVERY WEDNESDAY FROM 3.00 P.M. TO 5.00 P.M. WITH PRIOR APPOINTMENT.** INTERESTED MEMBERS MAY CONTACT DIRECTLY WITH THE IPF SECRETARIAT AND FIX AN APPOINTMENT AT LEAST 2 DAYS BEFORE THE SCHEDULED MEETING. MR. ROY WILL PROVIDE THE KNOWLEDGE REQUIRED FOR SETTING UP PLASTIC INDUSTRY UNDER MSME POLICY 2013 ISSUED BY DEPT. OF MSSE & TEXTILE, GOVT. OF WEST BENGAL.

PLEASE FIX AN APPOINTMENT AT

2217 5699 / 5700 / 6004; FAX: 033-2217 6005, E-MAIL : office@ipfindia.org

SPECIAL ADVERTISEMENT TARIFF FOR IPF MEMBERS

The Federation has decided to offer advertisements to IPF members at a Special Rate of Only ₹1000/- (Rupees one thousand only) per insertion in our monthly Journals for the undermentioned advertisements (**Maximum 60 words per advertisement**)

Advertisement can be only made for:

1. **Spare Product capacity for sale**
2. **Used Machinery for sale**

Members desirous to advertise may send their advertisement materials in high resolution (**pdf format or cdr**) by 10th of each month along with their requisite payment. Please send to The Editor, **INDIAN PLASTICS FEDERATION** 8B, Royd Street, 1St Floor, Kolkata – 700 016. E-mail: office@ipfindia.org

C I R C U L A R

ADVERTISEMENT TARIFF FOR 'PLASTICS INDIA' JOURNAL (Per Insertions)

Front Cover (Colour)	:	₹ 15,000/-
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Colour Full Page	:	₹ 6,000/-
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MECHANICAL DATA

Overall Size of the Journal	:	28.5 cm X 22.0 cm
Front Cover [Print Area]	:	20.0 cm X 18.0 cm
Full Page [Print Area]	:	23.5 cm X 18.0 cm

Note : 15% discount will be allowed on 12 insertions
10% discount on 6 insertions to DIRECT ADVERTISERS



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IPF IS ON SOCIAL NETWORKING SITES :

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Mobile : 98315 25026

INDUSTRY SPONSORED CANDIDATES PREFERRED

GLIMPSES

IPF PARTICIPATION IN PLEXPOINDIA AT GANDHINAGAR, GUJARAT

The 7th Plexpoindia International exhibition was held at Gandhinagar from 7th to 11th January 2016. It was organized by GSPMA.

The show was held in two Halls and was very well organized. IPF was allotted a complimentary booth on barter basis by GSPMA. They had visited in large numbers in our Indplas'15 to promote their exhibition. The booth was managed by Mr Ashok Jajodia, Hony. Secretary and Mr Ranjit Chowdhury an active EC member. We showcased the success of Indplas'15 and also the activities of IPF with the details of upcoming Knowledge Centre. Membership forms were also distributed.



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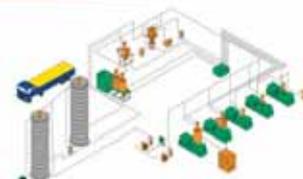
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