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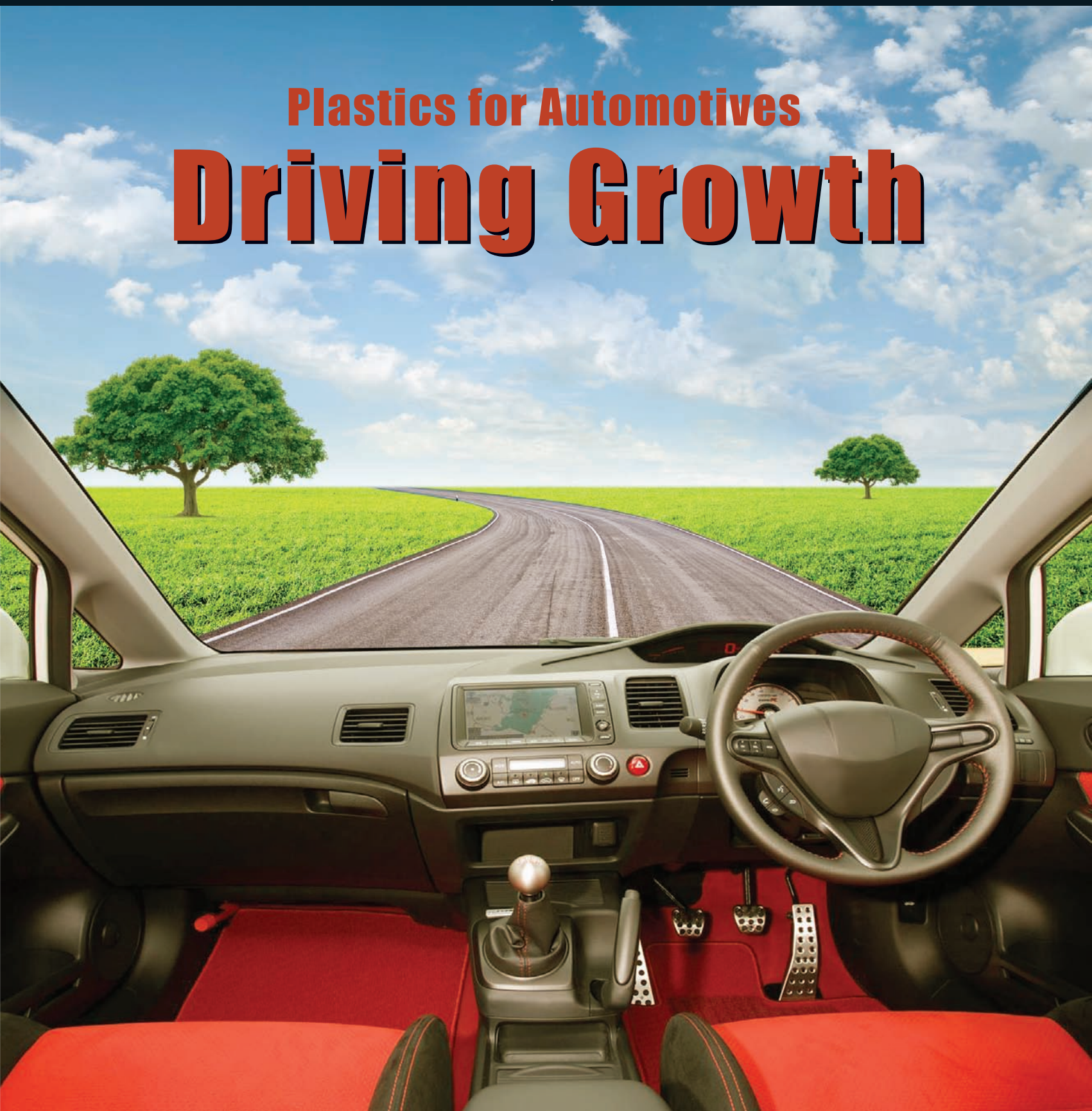
25 Years In Service Of The Indian Plastics Industry – Plastindia Foundation Celebrates Silver Jubilee

Plastics for Automotives

Driving Growth



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- Raffia Tape Stretching Line
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- Multi Layer Blown Film Plant
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- Air Bubble Sheet Plant
- PP / PET Box Strapping Plant
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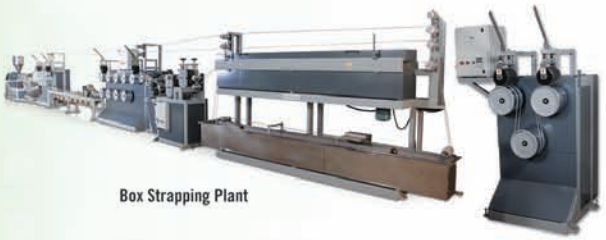
- Synthetic String (Sutli) Plant
- PP/TQ Blown Film Plant
- Re Process Plant
- High Speed Rotogravure Printing Machine
- Adhesive Lamination / Coating Plant
- Slitter & Rewinder Machine

Raffia Tape Stretching Line with inverter cheese winders

Extrusions Coating Lamination Plant

Mono-Layer Blown Film Plant



Box Strapping Plant

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From the **President's Desk**

May Our Growth Continue to Rise & Shine...

Season's Greetings!!!

At the outset, I would like to wish the entire plastic industry, a very prosperous New Year 2013.

First of all, I would like to express my deep gratitude to all the Founder Members for electing me unanimously as Plastindia Foundation President. I have also handed out to the Managing Committee Members my desire of the future roadmap – "The Path Forward" on the day of the installation.

The Path Forward has to be carved with the help of all members, with assigning responsibility. The committee formation shall take place very shortly when we will be assessing and estimating the level of achieved performance on all projects and discussing the future course of action.

The most successful project of KISAN RAAJA has taken a giant stride. Initially from eight farmers, we are now involving 160 farmers and finally, it will be stepped up to 600 farmers by February 2013. This is with the help of NGO viz Savitribai Phule Mahila Ekatma Samaj Mandal (SPMESM),and NABARD. The project will not cause financial dent to Plastindia Foundation. On the contrary, we may be able to induce qualification fees in time to come. Our dream is to make reality of this successful food security project involving marginalized farmers. to other states as early as possible. We want volunteers to come forward and extend the scope beyond the drip irrigation implementation of utilities like pond liners, pond covers, greenhouse, mulching films, shadenets etc. This will be a great opportunity for the industry especially, the processors to qualify as a quality supplier by showcasing their ability and make their presence felt.

The work in the Plastic Recycling and Solid Waste Management has to be reviewed at grass root level. We are compiling the work done by OPPI, ICPE and other agencies by creating a step by step approach, which has to be initiated to offset the negation of the plastic waste management. The banning of Plastic bags in the NCR region has given the challenge to Plastindia Foundation on how to first reach the neutral ground and then take the advantage of use of plastics forward. We are engaging specific agencies to work on that subject.

From the **President's Desk**

Our step to create Plastindia International University is taking shape in the right direction. We hope that Independent University status will be granted to us by the Government of Gujarat shortly. One of our collaborators, viz. University of Massachusetts, Lowell, USA, visited India to conduct gap analysis and devise methodology for course and industrial training curricula. They will be followed by academic formalities in all avenues.

We are working with our industrial brethrens for our Knowledge Centre activities and are awaiting their inputs for the desire course of actions. Our manpower development program needs to be reviewed.

The most ambitious dream is to move the exhibition venue from New Delhi to Ahmedabad with the help of ITME, INDEXTB and the Government of Gujarat. We are very hopeful that our wish list will be addressed to and by 20th of January 2013, land allocation shall be completed. The project in terms of design development and articulation is completed; the committee for implementation shall be headed by Secretary of Government of Gujarat.

Let's hope that this immense shift from established place to a new venue will be fruitful to the exhibitors and the visitors alike.Plastindia Foundation will spare no efforts to make it a grand success.

We are also collaborating with U.K. based company "Wintech" who are specialized in cluster approach. They will visit us in 28th February/ March 1st, 2013 to deliberate and select potential Indian partners in mutually engaging field in plastics.

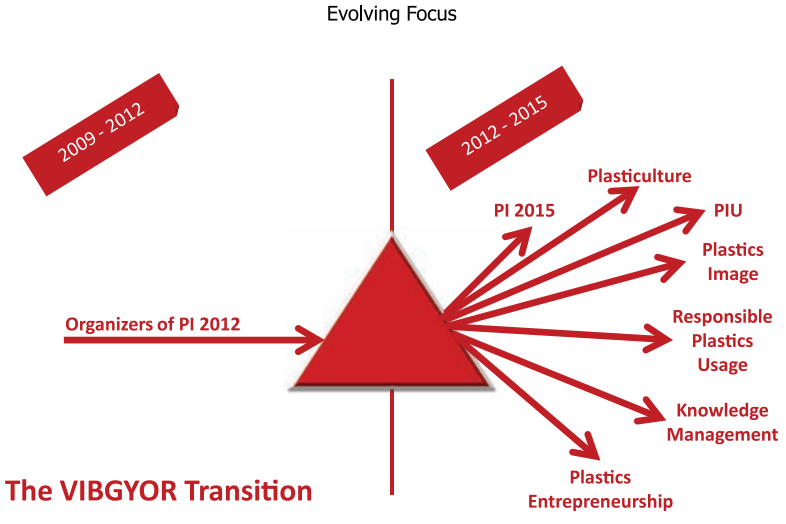
Also we are in dialogue with a multifaceted match making company which can provide opportunity to the plastics and packaging industry for export market. This program is scheduled for February 13 - 14, 2013 in Prague. PACE is inviting us for this joint approach to establish vendor/vendee relationship in the international arena.

Time has come in the history of Plastindia Foundation to engage and bring on board the professionals and for each avenue, it shall be looked into.

From the desk of President, I request to all concerned to come forward and take up the responsibilities of their liking to organize this momentous task.

Thanking you,

Bipin Shah
President - Plastindia Foundation



From the **Vice President's Desk**

R. A. Lohia

Dear Friends,

It gives me immense pleasure and pride to address you for the first time from my desk as Vice President, Plastindia Foundation. I am grateful to the new Managing Committee for having faith in me by unanimously electing me as Vice President of this great institution for the term 2012 – 2015. It is indeed a honour for me to be at the service of Plastindia Foundation.

The entire plastic industry is passing through a critical period, both domestic and exports due to global slow down caused by different factors. We need to bring back our industry to its normal growth path. The Mission and Vision of this great institution should guide us to fulfil our commitments.

Plastic industry is looking forward for a growth in per capita consumption from 8 Kg to 20 Kg by 2020. Plastindia Foundation will play a greater role in achieving this target in times to come. Initiatives taken by our predecessors will be taken forward by all of us to achieve this goal. I hope we will accomplish this mission.

Plastic image needs to be improved on environmental issues with the help of all plastic associations in India. It needs to be debated threadbare amongst ourselves to find a solution to the problem of plastic waste disposal. We have to act as a facilitator with local bodies and / or authorities concerned to suggest a practical and sustainable way of waste plastic disposal. The industry through all its associations is working hard on this issue, but due to non-cooperation of authorities concerned the problem is still persisting and the industry is getting a bad name. I hope Plastindia Foundation with ICPE will take lead in this regard and hope that the plastic image is improved with our good intentions and selfless service for better environment.

With all good wishes for a happy festival season.

Yours

R. A. Lohia
Vice President - Plastindia Foundation

From the **Editor's Desk**

Choices are in plenty... Opportunities in abundance

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Dear Members,

Mr. Bipin Shah, President – Plastindia Foundation and the new Managing Committee for the term 2012-15 has now taken the reign of Plastindia Foundation and set the ball rolling from the day one with great spirit and enthusiasm.

This issue covers the various events and activities organized during the first three months to take Plastindia Foundation to new heights. In order to serve the purpose of Qualified man power creation, image building and higher education opportunities in plastic industry through' Knowledge Centre at Vapi, Plastindia Foundation has taken an enormous step ahead.

Indian automobile industry is continuously reaching to new heights of progress since last two decade. Polymer choices are in plenty and opportunities in automobile industry are in abundance, the plastics industry will grow in this sector where challenges are unlimited.

This issue focuses on recent trends, challenges and demands in automobile industries. So go ahead, drive the future road map and serve the industry to your advantages!! !

Subash Kadakia
Chairman - Publication Committee
Plastindia Foundation

Role of Plastics in Automobile Industry

Automotive Plastics Market for passenger cars to grow at a CAGR of 8.5% uptil 2016

The global automotive plastics consumption is expected to grow from 6.7 mln tons in 2011 to 10.2 mln tons in 2016 at an estimated CAGR of 8.5% for the same period. The high growth rate is attributable to increasing passenger car production and initiatives by automobile manufacturers towards light-weighting of cars. Global automotive plastics market is mainly driven by passenger car production and increasing utilization of automotive plastics in vehicle designs. A report by Reportlinker.com covers global consumption of seven types of plastics in passenger cars such as polypropylene, polyurethanes, polycarbonates, high density polyethylene (HDPE), polymethyl methacrylate, Acrylonitrile butadiene styrene (ABS), and composites. The use of plastics in interior, exterior, and under bonnet components of automobiles help in weight reduction, improve aesthetics, vibration and noise control, and cabin insulation. The properties of plastics such as easy mouldability, recyclability, scratch resistance, high volume to weight resistance, thermal stability, impact strength, and resistance to abrasion make them suitable for use in automobiles. Among all the automotive plastics polypropylene leads consumption by 36% followed by polyurethanes (17%), ABS (12%), composites (11%), HDPE (10%), polycarbonates (7%), and PMMA (7%) due to their easy forming properties and their availability at cheaper price than other materials.

As per ICB in ICIS, a 10% reduction in vehicle weight results in a 5-7% fuel saving, A typical passenger car's plastic content is 8% of vehicle weight with Europe leading as high as 11% plastic content of vehicle weight. Vehicle interior plastics occupy 48%, exterior plastics account for around 27% and under-hood plastics around 14% of the total plastics used. Electrical and cable materials occupy the remaining 11%. Globally, demand for plastics in passenger vehicles is set to grow to 9.1 mln tons by 2017 from 5.5 mln tons at present, with PP showing the fastest growth, as per Frost & Sullivan. Plastics demand from the automotive industry is set to grow and significant research is being carried out by OEMs, part manufacturers and plastics producers to develop high performing, high strength plastics and to find new applications for these materials. As per ICB in ICIS, polypropylene is used in interior, exterior as well as under hood parts. Bumpers, bumper spoilers, roof/trunk spoilers, lateral sidings, rocker panels, body panels and wheel arch liners are exterior applications while dashboard, dashboard carriers, pillar cladding, door pockets, door panels, consoles and chairs are interior applications for PP. Currently, PP accounts for around 64 kg (141 lb) of vehicle content, estimated to grow to 84 kg by 2017. The rise in PP consumption will be driven by increasing application of reinforced PP as a replacement for metals in some under hood and exterior parts, as well as a replacement for PU foam in seating applications. PA6 and PA66 offer light weight, temperature and chemical resistance to underhood components such as air intake manifolds, engine covers, radiator end tanks, valve covers and oil pan modules.

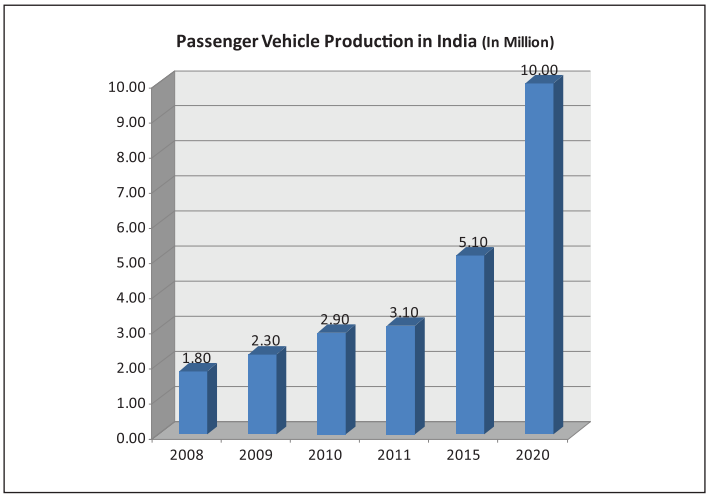
The plastics to total weight ratio in passenger cars varies between 11% and 14% across all the geographies and according to industry experts this ratio is likely to increase between 3% and 4% in the next five years. As of year 2011, Asia-Pacific leads automotive plastics consumption by 52% followed by Europe (29%), North America (10%), and rest of the world (9%). Major automotive plastics suppliers/producers include Dow Chemical Company, Bayer Material Science, Momentive Performance Materials, Akzonobel, and Evonik. The leading consumers of automotive plastics include major automobile manufacturers such as Toyota, Hyundai Motor Company, Mitsubishi, General Motors, Honda, and Peugeot SA.

The main drivers of automotive plastics utilization are their potential for maximum mass reduction of automobile and carbon emission reduction potential by light-weighting of the vehicle.

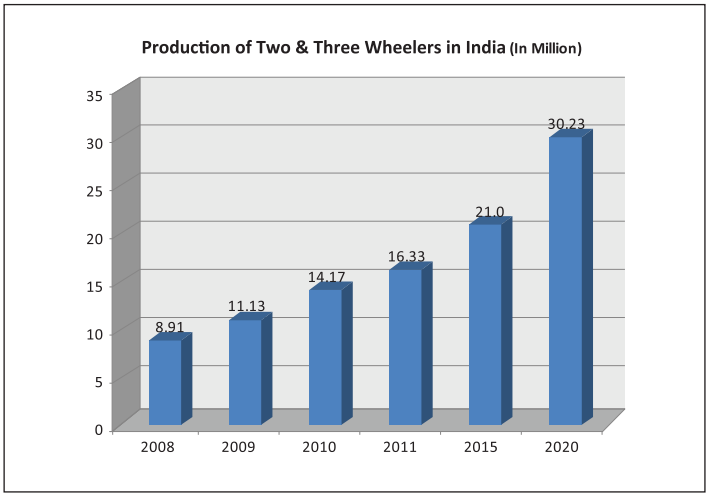
The global passenger car production is dominated by Asia-Pacific region followed by Europe, North America and rest of the world. The major players in Asia-Pacific region are Toyota (Japan), Hyundai (South Korea), and Honda (Japan). In Europe the major players are Volkswagen (Germany), Peugeot SA (France), Fiat SPA (Italy), and BMW (Germany). In North America major players are General Motors (U.S.) and Ford (U.S.).

Source: www.plastemart.com

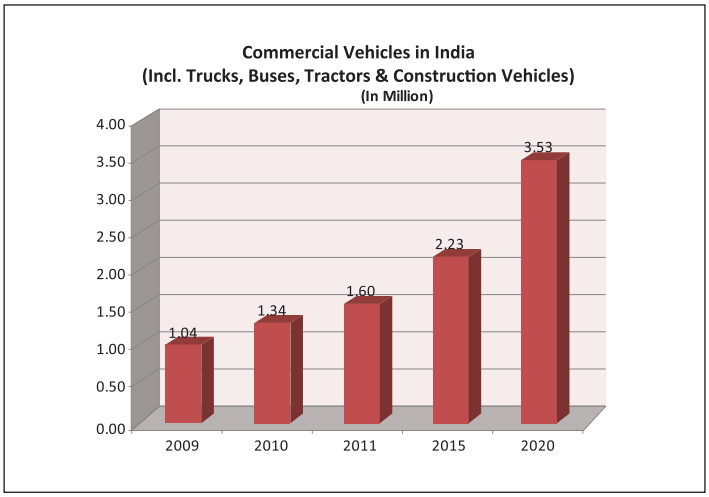
Role of Plastics in Automobile Industry



Passenger cars production in India witnessed resurgence despite the 2008 global financial crisis. In the year 2008/09, the overall production of passenger cars in India stood at little over 1.8 million numbers. In 2011/12 the country produced over 3 million passenger vehicles, which is a growth of over 70% in 4 years. This continuous growth path will take us to 5.1 million passenger vehicles by 2015/16 and by 2020/21 we should reach a distinctive milestone of slightly less than 10 million cars.



The Two & Three Wheelers production in India has seen rapid growth and currently stands at over 16 million numbers. This number is likely to reach 21 million in the year 2015/16 and cross 30 million by 2020/21. This signifies a healthy growth of over 10% CAGR from 2008 till 2020.



It is estimated that the production of commercial vehicles (trucks, buses, tractors & construction vehicles) in India will cross 3 million numbers by the year 2020/21.

This automotive segment has witnessed a steady growth. In 2009/10, the production of commercial vehicles was little over 1 million numbers. By 2011/12, our country produced 1.6 million commercial vehicles. In 2015/16 commercial vehicle production is expected to reach 2.2 million.

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Recent Trends : Plastics for Automotives

FUTUTRE OF AUTOMOTIVE ELECTRIC MOBILITY

A new concept vehicle that combines both companies' ideas for holistic electric mobility has been developed by Daimler and BASF. The resulting vehicle is the 'smart forvision', developed with a special emphasis on energy efficiency, temperature management and lightweight design. The clear objective of greatly increasing the zero-emission range resulted in completely new concepts and materials in the areas of insulation, reflection, lightweight design and energy management. In addition to transparent organic solar cells, transparent and energy-saving light-emitting diodes and infrared-reflective films and coatings, high-performance foams are used for insulation against cold and heat. Smart is also setting new standards of lightweight design with the use of the first all-plastic wheels. This vehicle showcases technologies for sustainable and holistic electric mobility of the future. The researchers and designers intentionally realised a mixture of visionary materials and technologies in the concept vehicle: some of these are still at a laboratory stage, while others have a realistic chance of entering series production.

ENERGY EFFICIENCY: LIGHT AND ENERGY FROM ABOVE

The hexagonal transparent areas on the roof are an eye-catching feature - as the first light-transmitting roof that also generates energy. Transparent solar cells covering the entire roof surface are the technology used here. They are based on organic dyes embedded in a sandwich roof. The transparent dyes of the solar cells are light-activated. Even in diffused light and poor light conditions, they generate enough energy to power the multimedia components and the three fans that assist with climate management in the vehicle interior. If the vehicle is standing in the sun, the ventilation is permanently operated with the help of these solar cells, keeping the car cool. This new photovoltaic technology opens up further efficiency potential and the energy generated can be used for additional applications in the car. There is an additional new feature under the solar cells: transparent OLEDs (organic light-emitting diodes) that illuminate the vehicle interior when the door is opened or a button pressed. When switched off, they allow for a clear view outside. This results in a glass roof effect during the daytime, whilst the areas are pleasantly illuminated without any dazzle at night. Thanks to a free choice of colours the new OLEDs not only offer more design freedom, they also consume less than half as much energy as conventional energy-saving lamps.

LIGHTWEIGHT: DIFFERENT, BETTER, STYLISH

A world first leads to a considerable weight reduction and a unique design: the first all-plastic wheel suitable for high-volume production. In its current development status, the wheel developed by BASF from a new high-performance material results in a considerable weight saving of 3 kgs per wheel. Unlike conventional polyamide composite materials, this new plastic has long reinforcing fibres which improve its mechanical properties. The result: excellent thermal and chemical stability, dynamic strength, toughness and good continuous operating characteristics. First intensive product tests at smart show the performance capability of the all-plastic wheel and confirm the potential for possible use in production vehicles. In addition to the tridion passenger cell, further components such as the doors are made of carbon-fiber-reinforced epoxy resin – a high-performance composite material. The use of such materials enables a weight saving of more than 50% to be achieved compared with steel or 30% compared with aluminium. Thanks to short hardening times the resin systems are also suitable for producing larger volumes.

HEATING: CLOSE TO THE BODY AND EFFICIENT

The multifunctional, comfortable and lightweight seats offer a unique combination of efficient temperature management and an energy-saving lightweight design. Here, several innovative products are combined with one another for the first time. A new, lightweight, self-supporting plastic seat shell forms the basis. Numerous studies have shown that the body only absorbs heat efficiently through certain contact points. This is why "e-textiles" - thin fabrics with custom-tailored conductive coatings - replace conventional seat heating in the smart forvision. With direct heating close to the body in the middle and lower back area of the seats they provide for a pleasant feeling of warmth. The energy, space and weight-saving e-textile technology is also found in the armrests of the doors and ensures that body contact

points sensitive to the cold are also warmed in this area. The innovations continue with the seat foam, which provides for both comfort and weight savings. The material from BASF is around 10-20% lighter than other materials and enables different degrees of hardness to be realised in different areas of the upholstery in a single work operation – resulting in clear ergonomic advantages. Superabsorbent containing fleece fabric integrated in the seat greatly enhances seating comfort through its passive climate control. Compared with conventional climate-controlled seats the lightweight seat in the smart forvision does not have the complexity and energy requirement of mechanical ventilation.

TEMPERATURE MANAGEMENT: HEAT STAYS OUTSIDE

As a large amount of energy is needed to air-condition and heat a vehicle, temperature management was a key focus area. A whole package of measures has been implemented to ensure more efficient air conditioning of the vehicle. At the same time they make energy-intensive heating of the whole interior superfluous. A heat shield that has not been previously used for automotive applications consists of a new kind of infrared-reflective film from BASF, applied in the windscreen and side windows, protecting the car interior from heating up. Integrated between the panes of the safety glass the metal-free film ensures that the infrared rays are effectively reflected. Thanks to its high transparency in the visible range it can also be applied to tinted windows and guarantees an unprecedented level of reflection of sunlight and heat. Unlike metallized films, which are already used in some vehicles, the new film reflects only the infrared rays of the sun. Radio waves that are necessary to use GPS, Bluetooth, mobile phones or toll collection pass through the glass unhindered. The high-performance foams from BASF fitted in the body panels also provide for a pleasant climate inside the car. They keep the vehicle pleasantly cool in summer and also insulate it against the cold in winter. Thanks to their high efficiency even in a small width, they can be fitted everywhere in the vehicle. With this innovative insulation system, the two companies are breaking new ground in the automotive sector.

COOL COATINGS - COOL INTERIOR

The infrared-reflective and extremely scratch-resistant coatings system covers two important aspects at once. Firstly, it supports the extensive temperature management system and, secondly, the brilliant and high-quality look of the coating underlines the unique design. The concept vehicle features a white special-effect coating with glass flakes that create a gleaming metallic look. An important side effect: the colour white reflects heat rays from sun and light particularly well. But even surfaces coated with dark colours stay much cooler, thanks to special colour pigments from BASF. They ensure that heat radiation is reflected rather than absorbed. This leads to a temperature reduction of up to 20°C on the paint surface and of up to approximately four degrees in the vehicle interior.

FUTURISTIC DESIGN TRENDSETTER

Painted in pearl white and accentuated by the tridion safety cell coated with a copper-coloured liquid metal paint, there is a deliberate connection between the basic structure of the smart forvision and the design of the smart for two. Trendy yet high quality - the aluminium flakes in the liquid metal paintwork create a reflecting surface on the safety cell, changing between light and dark depending on the viewer's perspective. Both the panels and the cell are additionally painted with an extremely scratch-resistant clear coat. The faceted side doors with integrated door openers are a real eye-catcher. Here, plastic is presented in a new, expressive and three-dimensional form; a reinterpretation that is only possible at smart, thanks to the consistent use of plastic. The precise facets give the area stability and enable a smaller material thickness to be used. Optimal use is made of the possibilities offered by plastic as a material. In contrast, the front and rear have a softer design with smooth transitions from the doors. Just as the integrated door handle does not need an additional component, the familiar smart air inlet is represented by small hexagons located right on the outer skin. The jet-like rear lights are reminiscent of small aircraft turbines and give the rear a futuristic and sporty look. Inside the lights, small propellers convey the air from the inside to the outside. In addition to all the light functions needed, transparent stacks in the form of rings around the lights also show the charge status of the battery during charging. The headlamps are emphasised by a ring comprising the daytime driving lights and indicator functions. The lights add to the likeable expression.

Recent Trends : Plastics for Automotives

DOORS OPEN TO THE FUTURE

With a mix of polygonal surfaces and organic shapes the interior builds a bridge to the architectural design handwriting of the exterior. This also applies to the colour concept: a cool white dominates in the interior as well, accentuated by the inner part of the instrument panel in liquid copper. Hexagons in the form of white rubber nubs on a white floor are a reference to the design idiom of the overall vehicle, as is the tone-in-tone design of the seat upholstery. The faceted surface of the side doors is also found on their inside. The polygonal surfaces with integrated armrests and stowage compartments curve into the interior. They are painted in the body colour and feature coloured LEDs. These greet the driver with a light animation when the door is opened and closed with light running from the outside to the inside and also guide him out again. After closing the door the animation changes to unobtrusive ambient lighting. The elliptical user interface with a copper coloured frame - matching the lightweight tridion - is semi-transparent when switched off. When the vehicle is switched on all cockpit information is then projected onto the transparent surface. The driver uses a touchscreen to switch between operating menus. The white steering wheel that is reminiscent of an aircraft yoke gives the cockpit an additional futuristic look. Function buttons as well as the LED display for the battery charge status are found here.

FORWARD-LOOKING TECHNOLOGIES

The smart forvision not only shows that electric mobility can make emission-free driving possible. At the same time, it also paves the way for new technologies in the automotive sector. Many of these innovations are based on nano technology, the key to the development of sustainable solutions. Nano materials serve as drivers of innovation in the automotive industry, as they do in the fields of construction, energy, healthcare and electronics.The total of all technologies integrated in the concept vehicle make a perceptible contribution to increasing the range. This is always at the centre of discussions relating to battery-electric driven vehicles. With maximum energy efficiency, intelligent temperature management and consistent lightweight construction it is possible to increase the range by up to 20% - an additional bonus for electric mobility of the future.

Both Daimler and BASF are engaged in wide-ranging research and development work aimed at getting electric cars on the road and ensuring that electric mobility becomes part of everyday life as soon as possible. The two companies have combined their technological competencies for the first time, developing a forward-looking vehicle concept that offers decisive solutions to the challenges of the future. The new vehicle brings design, lifestyle and technology together to form a new functional whole.

Source: www.plastemart.com

GROWING USE OF NATURAL FIBRES BY AUTOMOTIVE MANUFACTURERS

Growing environmental awareness and a drive towards sustainable solutions among consumers is driving automakers towards advancements in the development of natural fibre composites, with end-use primarily in automotive interiors. Natural fibres have instrinsic properties - mechanical strength, low weight and low cost - that have made them particularly attractive to the automobile industry. Natural fibre composites provide better thermal and acoustic insulation than fibre glass in automobiles and reduce irritation of the skin and respiratory system. The low density of plant fibres also reduces vehicle weight, reducing fuel consumption. The moulding process consumes less energy than that of fibreglass and produces less wear and tear on the machinery, leading in up to 30% reduction in production costs.

Ford Motor is continuing its research into the use of natural fibres and bio-based plastics, with its latest move being investigating the use of coconut husks as a composite reinforcement. The company is looking at uses for coconut husks or coir to increase the sustainability in vehicles. Ford has used wheat straw as a filler in door trim bins, uses a soyabean oil-based urethane foam blend in seats and castor oil blend for instrument panels. The automaker plans to research the use of the husk as reinforcement in plastic parts, which would reduce the amount of plastic needed and lighten part weight. Visible natural fibres would also provide a more natural look to reinforced parts than traditional fillers. Ford is also working with a biodegradable plastic called polylactic acid (PLA). Derived completely from the sugars in corn, sugarbeets, sugarcane, switch grass and other plants, a plastic part made from PLA can biodegrade after its life cycle in 90 to 120 days. Potential automotive applications for PLA are wide ranging, from textile applications for vehicle carpeting, floor mats and upholstery to interior trim pieces that are injection molded. More immediate possibilities include using PLA for nondurable auto applications such as protective wrappings used during vehicle manufacturing and transit. Ford has already made great inroads with other bio-based, reclaimed and recycled materials that are in Ford, Lincoln and Mercury vehicles today. They include:

- Soy-based polyurethane foams on the seat cushions and seatbacks, now in production on the Ford Mustang, Expedition, F-150, Focus, Escape, Escape Hybrid, Mercury Mariner and Lincoln Navigator and Lincoln MKS. More than 1.5 mln Ford, Lincoln and Mercury vehicles on the road today have soy-foam seats, which equates to a reduction in petroleum oil usage of approximately 1.5 mln lbs. Ford has expanded its soy-foam portfolio to include the industry's first application of a soy-foam headliner on the 2010 Ford Escape and Mercury Mariner for a 25% weight savings over a traditional glass-mat headliner.
- Underbody systems, such as aerodynamic shields, splash shields and radiator air deflector shields, made from post-consumer recycled resins such as detergent bottles, tyres and battery casings, diverting between 25 and 30 mln pounds of plastic from landfills.
- 10% post industrial recycled yarns in seat fabrics on vehicles such as the Ford Escape. The 2010 Ford Fusion and Mercury Milan Hybrids feature 85% post industrial yarns and 15% solution-dyed yarns. The 100% usage represents a 64% reduction in energy consumption and a 60% reduction in CO2 emissions.

A new foam made with plant-based castor oil is being used in the Ford Focus in the industry's first seamless soft-touch instrument panel that's stronger, better-looking and better on the environment. Castor oil from plants helps deliver sustainable interior foam that reduces petroleum use while improving vehicle craftsmanship. Castor oil is derived from the flowering spurge plant, which is widely grown in tropical regions. The oil does not compete with food sources. The foam is made with 10% renewable content and passes all Ford performance requirements for interior components, and has 36% better tensile strength than material previously used. The foam also takes 43% less time to cure than the previous foam, and scrap is reduced due to improved flow and processing characteristics. BASF estimates that the foam saves more than 5,000 barrels of oil for every 300,000 Focus models produced. Ford plans to incorporate castor oil-based foam across more products globally over time. The company also uses seat foam made from soy, storage bin plastic that incorporates wheat straw, recycled yarn for seat covers, and natural-fibre plastic for interior components.

Recent Trends : Plastics for Automotives

Ford's use of a new nylon resin made from recycled carpet saved more than 1.9 mln kgs of waste going into landfills in 2010. Use of the resin, called EcoLon, has amounted to recycling more than 900,000 metres of carpet and reduced oil consumption by more than 1.6 million litres. The material, produced by Wellman Engineering Resins, is used to make cylinder head covers for Ford's 3 and 5 litre engines. The engine cover is the first automotive product of its kind manufactured from post-consumer recycled nylon. Wellman grinds used nylon carpeting into fibre and recaptures the material through a proprietary and patented process. The resulting product is a high-quality nylon resin that is injection-molded to produce the covers. Over the past several years, Ford has concentrated on increasing its use of non-metal recycled and bio-based materials, including soy foam seat cushions, recycled resins for underbody systems, recycled yarn on seat covers, and natural-fibre plastic for interior components.

The BioCar Initiative is an Ontario government-funded project designed to advance the use of more plant-based materials in the auto and agricultural industries. Ford holds a spot on BioCar's advisory board and directs some of the project's automotive research with biomaterials. Issues on the working block include:

- **Moisture absorption:** Natural fibre-reinforced plastics are more likely to absorb moisture over time, causing functional and durability concerns.
- **Odor:** Injection molding at high temperatures with a natural fibre-reinforced plastic emits an undesirable odor.
- **Decomposition:** PLA is designed to decompose quickly, but researchers want to make sure it will last the lifetime of a vehicle before that decomposition process starts.

Plastic material used to soak up oil in the Gulf of Mexico will be recycled into new auto parts for the Chevrolet Volt. General Motors said it has developed a method to convert an estimated 160 kms of the oil-soaked material off the Alabama and Louisiana coasts and keep it out of landfills. The ongoing project is expected to create enough plastic under-hood parts to supply the Volt for its first year of production. The recycling program will result in the production of more than 45,360 kgs of plastic resin for the vehicle components. The parts, which deflect air around the vehicle's radiator, are made of 25% boom material and 25% recycled tyres from GM's proving ground test facility in Michigan. The remainder is a mixture of post-consumer recycled plastics and other polymers. GM worked with several partners throughout the process, including Heritage Environment, which managed the collection on the coast; Mobile Fluid Recovery, which used high-speed drums to remove all absorbed oil and waste water; Lucent Polymers to manipulate the material into a state for plastic die-mold production; and tier-one supplier GDC Inc. which combined the resin with other plastic compounds to produce the components.

Source: www.plastemart.com

LIGHT WEIGHT AND HIGH PERFORMNACE MATERIAL, BIOPLASTICS DRIVE DEVELOPMENTS AND AUTOMOTIVE INDUSTRY

Driven by CO2 emission legislation, environment regulations and growing consumer awareness worldwide, the global automotive industry continues to strive towards greater fuel efficiency. The drive for greater fuel efficiency leads to light weighting that augurs well for the polymer industry. Penalties for excess emissions from vehicles have ensured that manufacturers use every material as a design variable to ensure that vehicle weight is reduced, with no compromise on safety and performance. As per ICB in ICIS, a 10% reduction in vehicle weight results in a 5-7% fuel saving, if the power train is downsized (or a 3-4% fuel saving without power train modifications). Material studies have shown that aluminum, advanced high-strength steel (AHSS), and some plastics like polypropylene (PP), polyamide (PA) and polyurethane (PU) have emerged as preferred choices for light-weight design. The inherent features of plastics have been major drivers for their use in vehicles. These include light weight, lower tooling costs for high volumes and the possibility to be fabricated as a single complex component, eliminating the need for mechanical fasteners. A typical passenger car's plastic content is 8% of vehicle weight with Europe leading at as high as 11% plastic content of vehicle weight. Vehicle interior plastics occupy 48%, exterior plastics account for around 27% and under-hood plastics around 14% of the total plastics used. Electrical and cable materials occupy the remaining 11%. Under-hood components offer good margins and high penetration potential, particularly in Asia and Latin America. In the mature markets, like North America and Europe, plastics are finding inroads into newer interior and exterior applications. Globally, demand for plastics in passenger vehicles is set to grow to 9.1 mln tons by 2017 from 5.5 mln tons at present, with PP showing the fastest growth, as per Frost & Sullivan. Plastics demand from the automotive industry is set to grow and significant research is being carried out by OEMs, part manufacturers and plastics producers to develop high performing, high strength plastics and to find new applications for these materials. Although plastics are light-weight and have other advantages, strength is lacking and needs to be addressed in order for plastics to be used in more demanding and structural applications. Plastics have a long way to go to exhibit similar demand to metals, which constitute the bulk of materials for automotive construction. The industry is seeing development of high strength plastics, such as polyoxymethylene (POM) for components such as gears, but they do not offer a cost-effective solution, as metal does. Thus, a balanced set of properties strength, crash-resistance and cost needs to be exhibited by plastics to see greater adoption in the future.

As per ICB in ICIS, polypropylene is used in interior, exterior as well as under hood parts. Bumpers, bumper spoilers, roof/trunk spoilers, lateral sidings, rocker panels, body panels and wheel arch liners are exterior applications while dashboard, dashboard carriers, pillar cladding, door pockets, door panels, consoles and chairs are interior applications for PP. Currently, PP accounts for around 64 kg (141 lb) of vehicle content, estimated to grow to 84 kg by 2017. The rise in PP consumption will be driven by increasing application of reinforced PP as a replacement for metals in some under hood and exterior parts, as well as a replacement for PU foam in seating applications. PA6 and PA66 offer light weight, temperature and chemical resistance to underhood components such as air intake manifolds, engine covers, radiator end tanks, valve covers and oil pan modules. The average content of PA is around 11 kg and is expected to grow to 13 kg by 2017. In the interior segment, door handles, parts of air bag assembly, instrument panels, levers for seats and pedals use PA6 and PA66. In exterior applications, PA is used where the plastic does not need to meet Class-A (high aesthetic quality) surface requirements. Comparatively, polyphenylene sulphide (PPS) performs better than PA, and is a strong contender for automotive component manufacturers as a metal replacement that results in vehicle weight reduction. However, its currently high levels of pricing is a drawback and limit its use. Polyurathane finds application in seating foam and has barely any substitution. The average vehicle content of PU is around 23 kg. PU foams occupy around 55% while rigid PU occupies the balance 45%. Flexible PU foams are most common, while rigid PU foams are used in niche applications, such as noise, vibration and harshness materials and insulation. PU is used in seats, door skins, boot lining trays, parcel shelves, centre consoles, dashboard trims, spare wheel trays, steering wheels, carpet backing and headliners. Acrylonitrile butadiene styrene (ABS) finds applications largely in interiors, such as interior grills, trims, headliners and centre consoles. However, ABS faces a significant substitution threat from PP. The average ABS content is therefore expected to fall from 10.5 kg to 9.5 kg. ABS will remain the plastic of choice in applications where paintability or adhesion to other surfaces is required.

End of life vehicle legislation and the consequent recyclability issues have led to a mixed response from OEMs for the thermoset market. The consumption of thermosets per vehicle is expected to decline to under 4 kg from 4.2 kg, due to increasing competition from aluminum. Exterior Class-A body closures/panels like fenders, hoods and decklids will remain the main applications for thermosetting composites, as they showcase excellent strength and low weight. Non-compostable, bio-based materials are being increasingly used by several leading automotive manufacturers. However, weight advantages are not assured with every switch to these environment friendly materials. Reduced dependence on volatile energy markets is one of the benefits of bioplastics.

Source: www.plastemart.com

Recent Trends : Plastics for Automotives

LONG FIBRE PP COMPOUNDS DRIVE AUTOMOTIVE INNOVATIONS

LFT PP will become a material of choice for automotive designers. Short glass fibre compounds are the best known products and they are used widely in under-the-hood components. They offer price advantage versus polyamide and PBT, but do not have the same high temperature benefits as engineering plastics. Glass Matt Thermoplastics (GMT) is another long established PP-based product. The product is produced as a sheet and is typically shaped by compression moulding. The resulting product is very stiff and has been used quite extensively in applications such as under body shields and spare wheel wells. Amongst the best known GMT brand names are Azdel and Symalit. In a new report recently published by AMI Consulting the use of LFT PP (long fibre thermoplastic polypropylene) is examined in detail. Glass fibre and PP have long been combined to make car parts.

Since the late 1990s, two new families of PP based products have been gaining an increasing role in automotive design: LFT-G and LFT-D. LFT-G (Long Fibre Thermoplastic PP) refers to a product sold as a granule, whereas the name LFT-D is used to describe the process in which an LFT is compounded and moulded in-line or directly. LFT-G PP is made in conventional compounding equipment but with modified dies: the long fibre length is achieved by using either wire coating or pultrusion technology. There are a number of variants in the LFT-D process but in essence fibre length is maintained because, rather than granulating the product it moves through an open die directly into the mould. The first successful promoter of this technology was Dieffenbacher which makes compression moulding machinery, but more recently Krauss Maffei has emerged as the largest supplier of in-line injection moulding machinery. The in-line compression moulding process is particularly suitable for 2-D parts and the in-line injection moulding process suitable for more complex 3-D parts. LFT-D's economic benefits lie where the moulder is producing high volumes of relatively large parts. In other circumstances LFT-G PP is the preferred choice. While the two processes compete with each other their proponents also report differences in performance depending on part design. Indeed the technical and commercial performance of the finished part relies deeply on its design.

LFT PP is now used widely in automotive front end carriers, instrument panel carriers, door panel supports, consoles, pedals, under body shields and a number of other applications. The exciting feature of many of these applications is that LFT PP is permitting automotive engineers to either replace steel and thereby reduce weight and improve fuel efficiency, or replace more expensive engineering plastics. The parts made in LFT PP are routinely so large that a moulding may weigh 3-4 kg although wall thickness below 1mm is also found in some designs. An excellent example of LFT-D PP in practice is the under body shield moulded by Polytec Group for the VW A5/PQ35 platform (that's the platform which includes Audi A3, Volkswagen Golf, SEAT León, Škoda Octavia and quite a lot of other vehicles). The production plant in Germany has capacity to make 2.4 mln mouldings pa enough to supply to VW plants making these models around the world. An equally impressive application, but this time using LFT-G PP is the instrument panel carrier for the new BMW 7 Series which is made from an LFT-G grade supplied by Borealis. The LFT-G PP contains 20% glass fibre whereas the same part on the prior model used a PPE/PS blend containing 10% glass fibre.

The largest producers of LFT-G include Ticona with its Celstran brand, Sabic which markets the product using both Stamax and Verton brands and Chisso which is now JNC Corporation and linked with Japan Polypropylene and Mitsubishi. Autotech Polymers and Indore Composites are two leading manufacturers of LFT in India. Demand for LFT PP has been growing strongly in many applications and in most regions of the world and is predicted to grow at double digit rates during the coming years. To date the penetration of LFT PP varies significantly by OEM within the various applications and as design experience builds there is plenty of evidence that LFT PP will become a material of choice for automotive designers.

Source: www.plastemart.com

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Enhanced Aesthetics and Performance

Requirements for Plastics in Automotives

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TATA Autocomp Systems Limited Technical Centre

I. Introduction

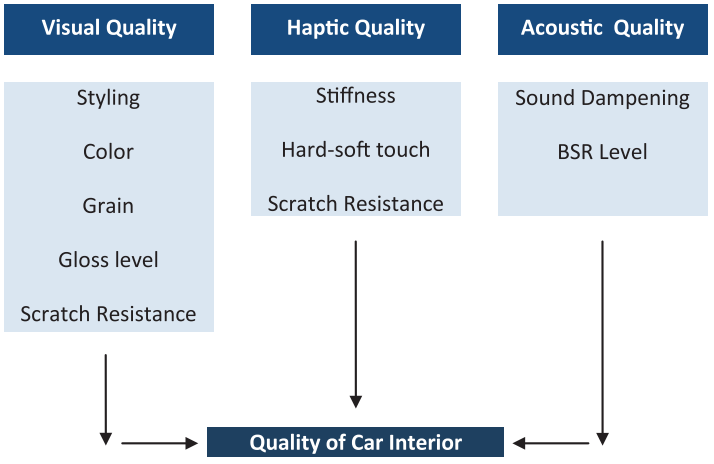
There is increased usage of plastics in automotives. The key to meet the challenges in terms of performance requirements is by (a) innovations in material formulations / compounding technologies (b) development of new material grades and (c) integration of process technologies. For improved carbon foot prints vehicle weight reduction is achieved by increasing the plastic content in an automobile, especially by metal to plastic conversion. However, this is offset by safety systems, additional features/ subsystems which further increase the weight of a vehicle. The materials have to meet the following to achieve high performance and customer expectations: Some of the challenges plastics must meet are: (a) enhanced surface properties (b) performance properties (free from stress whitening) (c) paintability and adhesion (d) emissions (f) odour (g) stickiness (h) weathering properties (g) ageing behaviour. Figure 2 shows the factors responsible for the overall perceived quality in car interiors.

Visual quality:

Low gloss appearance along with good scratch and mar resistance is the requirement in car interiors. Higher gloss gives a reflection of the dashboard on the windshield. Type of texture and depth of texture on a plastic surface defines the gloss level of the part as well as the resistance of the plastic part surface to scratch and mar. Deep aggressive textures usually are lower gloss than shallow textures as they reflect less light. But deeper textures also tend to show scratch damage more while mar damage is more visible with shallow surfaces [1, 2]. PP compounds used in car interiors are mostly talc filled, which further increase tendency towards scratch. Scratch resistant additives are incorporated in these formulations to achieve required level of scratch resistance without compromising for tackiness under the action of heat. For materials like ABS or PC/ABS the gloss levels are inherently high. Low gloss grades of these materials are also available. However many times to have a lower gloss these parts are painted. There are many other materials (polyamides, PC/PBT, low gloss POM) used in interior applications.

Injection molding process related parameters ensure the retention of the grain on plastic surface. As reported better replication of the mold texture is obtained with a low melt viscosity at a high shear and a high mold temperature as shown in figure 1. This gives a higher gloss in the smooth surface regions and a lower gloss in the textured regions. An increase in the holding pressure has an effect similar to but smaller than increasing the filling rate or mold temperature. The gloss has a significant effect on the color; an increase in gloss was associated with an increase in the color coordinate b* and a decrease in the lightness L*. Rheological studies indicate that Material elastic modulus (material related parameter) during injection and cooling also contributes to replication of mold texture on plastic surface.

Figure 1: Factors influencing the perceived quality of car interiors



II. Haptic Quality:

Inputs regarding touch and impression regarding hard and soft feel of the component are discussed under haptic quality. Higher modulus materials produce a hard touch or poor haptic. Poly(propylene) being used in interiors extensively, lot of focus is on improving haptic quality of PP composites.

Besides a single material, combination of processing techniques can also help to achieve the end product requirements. Figure 2 shows the door arm rest which is manufactured using the combination of three processes. The objective is to provide comfort to the occupant. This is achieved by using three polymer processing operations and three different materials. To achieve the end requirement, the part is manufactured using (a) conventional injection molding of plastic substrate for the arm rest followed by (b) reaction Injection Molding where the plastic substrate is kept as an insert in a foam tool and PU foam is injected over the substrate and after this (c) thermoforming where the plastic insert after taken out from the foam tool is thermoformed where a soft TPO skin is wrapped around to produce the arm rest. The process is known as selective foam positive vacuum lamination.

Figure 2: Arm rest produced using selective foam vacuum lamination

An alternate process to slush molding is In Mold Graining (IMG) Figure 3. It is the process of laminating soft leather like skin on plastic substrate such as dashboard using a matched mold thermoforming process. In this case the grain on the skin is formed by thermoforming tool advantages of this process are high grain retention, thickness stability and sharp features. The plastic substrate is first formed using injection molding process and then TPO skin is wrapped around the same by thermoforming. Thus it combines the two processes: injection molding and thermoforming.

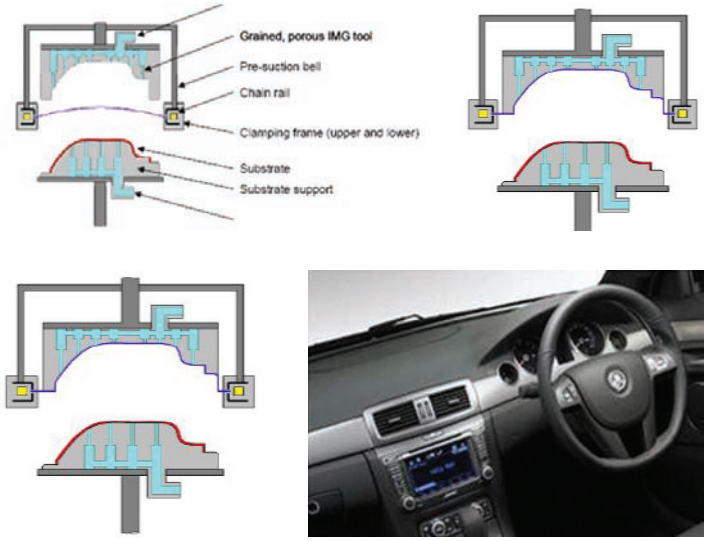


Figure 3: Schematic of In Mold Graining process (IMG)

Another example is using the concept of over molding where a soft material is injected over a hard plastic. This involves a specially designed injection molding machine with two injection barrels, one on the fixed half and other on a moving half of the injection tool. The injection barrel on the moving half is additionally equipped with a foaming unit. All these are integrated in a single process. A uniquely designed feed system in the tool ensures this process to be efficient. Thus it is a process that consists of injection molding the core part and foaming of the outer skin for improving the haptics of interior trims. A specially formulated thermoplastic co-polyester elastomer is used in this case which can be easily foamed and meets all the protocol related to haptics and material performance. It is therefore material technology, and injection molding process integration with the help of which the product quality is achieved .

III. Occupant Safety:

Air-bags are a part of supplemental restraint systems incorporated in a vehicle which use a crash sensor to protect car occupant from the impact of an accident. The airbags are located below the surface of the dashboard/steering wheel/door/roof/seat and so

on. The air-bag is deployed by tearing the plastic door which is made on the surface. Figure 4 explains the same. (1) Air-bag is located below the surface of the dashboard and is not visible. (2) During the crash, the air-bag pushes the pre-weakened portion of the dashboard and inflates completely as shown in (5) whereas (3) - (4) show the stages in between. This event occurs in a span of 40-50 milliseconds. The portion of the plastic is pre-weakened by a technique called as laser scoring of the plastic. In seamless laser scoring very tiny perforations are made on back side of the dashboard the air-bag can come out by tearing the seam. The plastic part has to withstand the push of the air-bag and only the pre-weakened portion should open out without any fragmentation. In this case, a combination of materials used to ensure the flexibility of the material and at the same time withstanding impact when air-bag comes out. The safety regulations demand energy dissipation requirements in case of impact where the plastic material properties are of importance.

Seamless laser scoring perfectly hides the air-bag and give the dashboard a continuous feel and improves perceived quality.

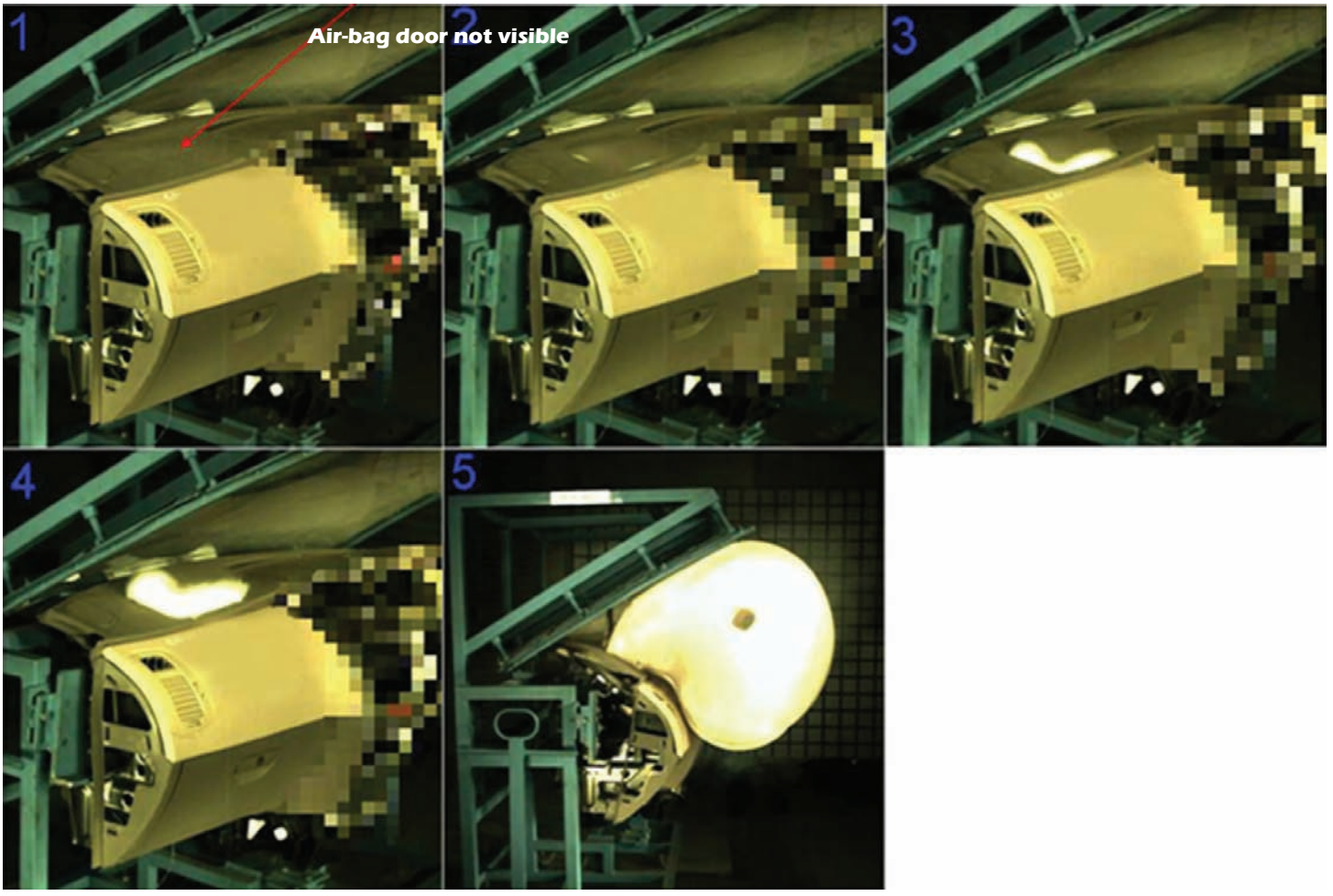


Figure 4: Sequence of air-bag deployment in seamless laser scored dashboard.

IV. Vehicle light weighting by metal to plastics conversion:

Lot of research is ongoing to reduce the vehicle weight and plastics play a very important role in this regard. SPE awards announced every year in various categories reflect this trend very strongly [5]. Under hood components with stringent conditions of heat and pressure are successfully replaced with plastics. Polyamides composites with long glass fibres reinforcement are used under the hood as applications air intake manifold as well as structural applications such as impact beam. Engineering and high performance polymers have successfully replaced metal components in transmission such as clutch cylinders, components in fuel systems, engine cooling systems, intercooler tubes and so on.

There is a trend to upgrade the commodity plastics such as PP to suit the end application by new additives and compounding technology. Applications Polypropylene and long glass fibres composites are successfully developed for front end module carrier frame, bumper brackets IP carrier and so on.

Usages of nano fillers to enhance the impact stiffness balance where flexural modulus is increased by 30% retaining impact properties. PP composites prepared using special talc with very high surface area showed that the properties of PP composites obtained using conventional talc used in automotive formulation can be achieved by using the talc with higher surface area at much lesser loading.

New processing techniques are designed to accommodate new requirements that assist in metal replacement applications and process simplification. For example in-situ polymerization injection molding of inserts for brake pedals where caprolactum polymerizes inside the injection tool at 1600 C.

In future more replacement applications will be developed for reducing the weight of the vehicle where may be on metal-polymer sandwich panels and hybrid part construction can result in substantial weight savings.

VI. Conclusion:

Advances in material and compounding technology have helped to a great extent to meet the challenges of the future. Stringent performance requirements with respect to the points discussed in the article, there appears to be competition amongst various plastic materials for the end application. This is evident from the trend that usage of PP composites in automotive applications is growing and is replacing some applications where earlier engineering plastics were used. With increased expectations from the customers there is improvement in the material specifications and new test methods are been set up so as to check for added functionality of plastic parts.

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Plasticulture - Extension Activity – KISAAN RAJA

Dr. Yatish B. Vasudeo
Chairman - Plasticulture Committee, Plastindia Foundation

The natural extension of KISAAN RAJA activity, after showcasing higher yield through Natural Resource Management techniques (drip irrigation) was to make the technology easily available with farmer beneficiaries at Jalna, where the pilot activity was conducted. This entailed two important players who would be corroborative with Plastindia Plasticulture. Towards this objective PPC had an supporter in NABARD who were to deploy their product UPNRM - (Umbrella Programme on Natural Resources Management) for Effective Natural Resource Management designed for sustainable development. And, through a credible mechanism the NGO Savitribai Phule Mahila Ekatma Samaj Mandal, Aurangabad SPMESM has come on board and as channel partners of NABARD for UPNRM implementation at the project district at Jalna.

This extension activity was envisaged for 900 farmers which was pruned down to 600 farmers as advised by NABARD. This was because, SPMESM had not worked for NABARD in the past and it was imperative that the first program they undertake is successful. There is always scope for extending these numbers. At the onset of Rabi 2012, the plan was to facilitate the identified farmer beneficiaries from 10 villages in 2 clusters. The plan was as follows:

FIRST PHASE UPNRM		
Taluka / Cluster	**Village**	**Farmers**
Badanapur	6	360
Ambad	4	240
TOTAL	10	600

The villages to be covered during the first phase were as under :

FIRST PHASE VILLAGES		
Sr. No.	**Village**	**Farmers**
1	Shelgaon	100
2	Najik Pangari	60
3	Mhatrewadi	60
4	Dhopateshwar	50
5	Pagirwadi	100
6	Dahigavhan	50
7	Khamkheda	40
8	Anjandoh	40
9	Morhira	50
10	Donwada	50
Total	**Villages**	**600**

While formalities were underway, acute shortage in monsoons for the year 2012 was observed and an extended monsoon was expected. In the district of Jalna and in the project region, Marathwada region, extended monsoons did not happen. This led to further scrutiny of the farmer beneficiary base and Phase I of the deployment program was deferred at 8 villages. In 2 villages it was taken up for implementation as these villages showed better ground water levels. However, due to further limitations in water, installations could be delayed further at Dahigavan. This village will see the program implemented in the next couple of months. The other 8 villages the program will be implemented before the onset of Kharif 2013. The villages where Joint Liability Groups have been formed as a pre-requisite to the program and covered for the loan through NABARD are as under:

PHASE 1 PROGRAM	
Village	**Farmers**
Pagirwadi	100
Dahigavhan	50
Total	**150**

Village	Farmer beneficiaries	Joint liability groups	Average land holdings	Average land irrigated	Average land for drip deployment
			(acres)	(acres)	(acres)
Pagirwadi	100	20	7	5	1.8
Dahigavan	50	10	5	3	

Besides drip intervention, there will be programs that will run concurrently in allied farm and nonfarm activities like cropping patterns & cropping Intensity, adoption of improved cultivation practices. These include; interactions leading to increase in irrigated area, improvement in area under cultivation, empowerment of local people with confidence building amongst villagers, etc.

The first phase at Jalna is important as some NGOs' who had attended the all NGO meet at Aurangabad have indicated that they would like to undertake the developmental work. Such an extension activity was new to them and they will be studying the first phase implantation to replicate the same.

The inauguration of the extension activity was conducted on 3rd November, 2012 at Pagirwadi village by the partner NGO SPMESM. President, Plastindia Foundation, Mr. Bipin Shah was the Chief Guest at this function. Mr Khose, District Development Manager – NABARD, Jalna District also graced the occasion. Key functionaries and dignitaries from SPMESM were also graced at the function which was attended by over 100 farmers from the village.

A modest beginning has been made to complete the pilot of KISAAN RAJA. This has been possible because of some dedicated work in the project and the initiative. This has been mainly possible because of the like mindedness of organisations and the people therein and the cause the initiative addressed. The path ahead as envisaged is now being planned. A lot more needs to be taken up as the causes are a plenty in the agricultural landscape of India.

And, as always, Plastindia Pasticulture looks forward to the support and well wishes of the industry.

Inauguration of 1st Drip system disbursement Program under Kisaan Raja activity at Jalna

Plasticulture - Extension Activity – KISAAN RAJA

Inauguration of 1st Drip system disbursement Program under Kisaan Raja activity at Jalna

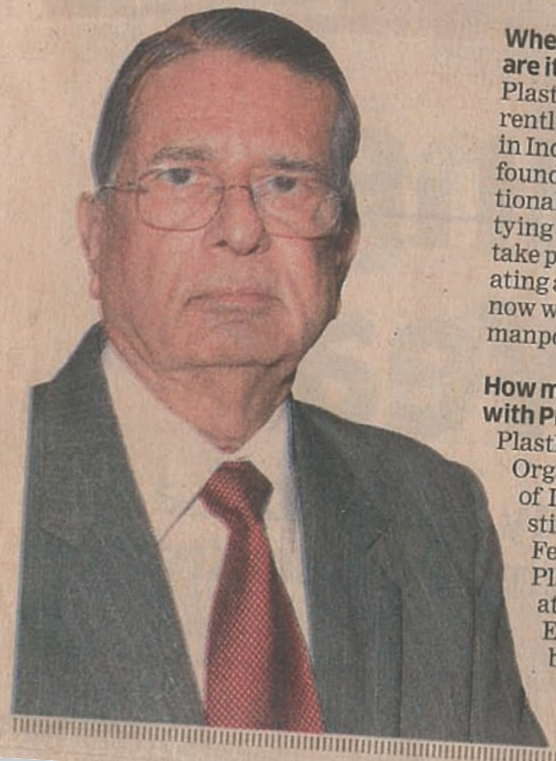
150 Farmers meet for Loan Disbursement under the Kisaan Raja Scheme at Jalna

Foundation Activities

2 Business Street

'Andheri Collection Ce

Q&A **Bipin Shah, president, PlastIndia Foundation, throws light on the plastics & polymer industry and its rapid expansion in an interview with Irum Khan. Edited excerpts:**



When was PlastIndia founded and what are its existing projects?

PlastIndia was formed in 1987 and is currently the apex body of plastic industry in India. The existing projects of the foundation include organising international plastic exhibition and conference, tying up with municipalities to undertake projects on plastic recycling; creating awareness about the industry and now we are keen to focus on training manpower to cater to the industry needs.

How many associations are affiliated with PlastIndia Foundation?

PlastIndia is the umbrella body for the Organization of Plastics Processors of India, Mumbai, Indian Plastics Institute, Mumbai, Indian Plastics Federation, Kolkata, Gujarat State Plastic Manufacturers Association, Ahmedabad, The Plastics Export Promotion Council, Mumbai, Central Institute of Plastics Engineering & Technology, Chennai and The All India Plastics Manufacturers Association.

How will the University benefit student fraternity?

The industry will be giving students the hands-on training, problem solving methodologies, process control and innovation in research.

What is the foundation's contribution to the industrial sector?

We have taken up several projects by tying up with the municipal corporations like the recycling of plastics in Sanjay Gandhi National Park in Borivali, Colaba, Lonavla and other areas. We want to take up more and more of such projects and we are prepared to invest around a crore of rupees in each of such projects. Also, we want to clear the misconceptions surrounding the plastic recycling.

Most governments are contemplating banning plastic bags. What is your take?

The politicians and bureaucrats are using plastics (thin plastic bags) as a scape-

Centre is a Boon for Us'

goat because they have no mechanism to segregate waste. Out of every tonne of waste produced only 3.3 percent comprises plastic. It is the most energy efficient alternative to paper and metal.

In July 2006 Mumbai deluge plastic bags were blamed for the choking of drainages, however, there was a lack of awareness on how dry and wet garbage should be segregated. The lack of awareness still persists. However we are willing to tie up with the government and have the technological strength to combat the issue of plastic bags littering on the streets.

Why did the foundation select Gujarat for the university when the office is located in Andheri?

The Government of Gujarat invited us and there is a cluster of 1,500 processing units in Vapi/ Silvassa areas. Further, new clusters are coming up in Dahej and an automobile sector is also coming up in Gujarat, so the choice was obvious.

What are the other upcoming projects of the foundation?

The projects are in the pipeline and will be announced in a phased manner.

What is the contribution made by PlastIndia Foundation in Andheri towards recycle management?

Andheri is one of the most populated areas and thus our collection centre operating out of Andheri is being seen as a boon by many. This centre is managed by NGOs such as Force Forum, Stree Mukti Sanghatana. The NGOs pay the rag pickers fixed rates for different types of dry wastes brought by them. After which, they sell waste to scrap dealers who in turn send the wastes to recyclers. We have other centres too.

How will the collaboration between foreign faculties and Foundation work?

It is a bipartite deal. The faculties will visit India to impart training here and similarly the Indian faculty will be sent there to get some additional knowledge. The Indian students stand to gain a lot. Ultimately, there will be a campus of a kind of University of Massachusetts in India.

Why did PlastIndia select to collaborate with International Universities over national university?

This is the only institution in Polymer Engineering which creates graduates with hands on training. Unfortunately, such training does not exist in national universities. The manpower too is not available in the country.

What is the potential of plastic industry in India and the current growth rate?

We have been growing at a CAGR of 15 percent per annum and the current growth rate is about 9 percent. This is primarily due to the Eurozone crisis and the slow economic growth witnessed last year. However, we will reach 20 million tonnes in terms of consumption by 2020. The proposed retail in FDI also expands the scope of usage for plastics in India.

How is the job market for this industry in India and abroad?

It is being observed that trained professionals are not available in the country and the industry suffers in productivity and precision.

What are the challenges faced in such international collaborations?

Gap analysis to know what India needs and what they would be teaching is a major challenge. We are exposing the foreign faculties to the wide horizons of the India's plastic industry, then be it Tata Motors or the slums of Dharavi. Thus, setting up curriculam, implementation of the same, creation of the faculty of international standards are some of the challenges.

irum.khan@timesgroup.com

PLASTINDIA INTERNATIONAL UNIVERSITY

Plastindia Foundation focuses on generation of skilled manpower for the plastic industry in India

Mumbai, December 5th, 2012: The Plastindia International University deemed as one of the prestigious universities to be set-up in Vapi Gujarat, saw the presence of delegates and faculty members from University of Massachusetts Lowell (U-MASS), as they visited India to familiarize themselves with the technology practices applied in plastic manufacturing companies in Vapi, Daman and Silvassa, known as a plastic manufacturing hub. The undergraduate engineering program at The Plastindia International University (PIU) will incorporate all the components of the curriculum that has made U-Mass Lowell Plastics Engineering program an international success.

The delegates also interacted with renowned industrialists to understand the educational needs of the Plastic Industry in India and incorporate those elements in the curriculum. The program aims to create a pool of skilled technicians/engineers who can think globally and implement expertise on the work floor that would be beneficial to the industry and economy at large.

To address the growing needs of Plastics and Polymer industry and its rapid expansion in Asia, Plastindia Foundation conducted a survey with a sampling of 50 key industrialists. The findings highlighted that majority of the employees are non-degree holders with an average work experience of 1-5 years. The industry is in dire need of a knowledge centre and short-term training to the technical staff.

As majority of the manufacturers are SMEs, it becomes difficult for them to obtain the industrial higher skill courses needed for the technical knowledge required for product innovation. Moreover, it is expensive and are un-available locally. Long-term training is not feasible to the manufacturers as they operate on lean workforce.

Plastindia International University will be the first institution in India which will teach Polymer Technology from Concept to Commercialization. The focus is on providing a knowledge based institution rather than a resource based one.

This survey data will be used to design and focus the educational curriculum needed to built skilled professionals in the plastic industry, staying within the set guidelines of the accreditation authority.

Speaking on the occasion Mr. Bipin Shah, President of Plastindia Foundation "Our aim is to keep people first, followed by the approach and ultimate selection of the process, which keeps integrity of the environment and ultimately brings sustainability for future growth. Our efforts will be to create entrepreneurship, logistics and problem solving methodology. With our two associates, University of Massachusetts Lowell and University of Wisconsin-Madison we are taking the faculties aboard and under the guidance of these experienced faculty, our future is assured in the decades to come."

- Plastindia Foundation collaborates with University of Massachusetts Lowell (U-MASS), USA and University of Wisconsin-Madison, USA to set up Plastindia International University in Vapi
- Novel initiative by the Plastic industry to develop a world class facility to nurture skilled manpower for our future needs
- Gujarat is an un-disputed leader in petro-chemical and plastic industry in India. Vapi is 2 hrs. North of Mumbai
- Delegates and faculty members of University of Massachusetts Lowell (UMASS), visited India in December, 2012 to meet industrialists and ascertain the gap between education and skilled professionals in India.

Panel Discussion at Vapi

Faculty at Plastindia International University site

Interactive meet with Industry delegates at Plastindia Foundation' Office.

Prof. Mark Reimer from University of Massachusetts Lowell addressing Industry delegates.

From L-R : Mr. Hemant Minocha (PIF) , Ms. Sonam Monga (PIF), Prof. Ramswamy Nagarajan (UMASS), Ms. Parulben Desai (Mayor of Vapi), Prof. Mark Reimer (UMASS), Mr. Raju Desai (PIF), Mr. Bipin Shah – President Plastindia Foundation (PIF), Prof. Stefen Burke Driscoll (Steve) (UMASS), Prof. Nick R. Schott (UMASS)

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ORGANISATION OF PLASTIC PROCESSORS OF INDIA

28th Annual Get-Together – 29th August, 2012

28th Annual Get-Together of OPPI was held at Grand Salon, Hotel Sofitel, Mumbai on 29th August, 2012.

Mrs. Naina Lal Kidwai, Executive Director, HSBC Ltd. and Country Head, HSBC India An Executive Director on the Board of Hongkong and Shanghai Banking Corporation Limited was the Chief Guest at the Annual Get-Together.

While delivering the welcome address Mr. Paresh Parekh, President, and OPPI said – "On this occasion, I seek your unstinted support in promoting healthy growth of Indian Plastics Industry and in making OPPI a world class Plastics Association". He also further said few words about Mrs. Naina Lal Kidwai and her career achievements.

Mr. C. Bhaskar, Vice-President, OPPI, introduced Mrs. Naina Lal Kidwai formally.

Mr. C. Bhaskar further informed the gathering – "Mrs.Naina Lal Kidwai is Executive Director on the Board of Hongkong and Shanghai Banking Corporation Limited and Country Head of HSBC India, which employs 32,000 people comprising Banking services, Insurance, Asset Management, HSBC Securities and Capital Markets, Retail broking, HSBC Software Development (India) Private Limited and the Global Services centres (BPOs servicing HSBC's operations in the UK, EU and USA)".

"Mrs. Naina Lal Kidwai has been recognized in India and abroad with several Awards and listings for leadership and business. Repeatedly ranked in the Fortune Global list of Top Women in Business, in the Wall Street Journal and Financial Times Global Listings of Women to Watch and listed by Time Magazine as one of their 15 Global Influential's 2002. She received the Padma Shri from the Government of India for her contribution to Trade and Industry" – said Mr. C. Bhaskar in his formal Introduction.

The gathering was further informed – "Mrs.Naina Lal Kidwai is on several Government, national and International bodies. She is Non-executive Director on the Board of Nestle SA, Global Advisor Harvard Business School, Chairman, City of London's Advisory Council and the list goes on. She is on the Governing Boards of National Council of Applied Economic Research and National Institute of Banking Management (NIBM) etc".

Mr. Achal Thakkar, Treasurer, OPPI proposed Vote of Thanks. He said – "I am certain that you will agree with me that we have had a very captivating and stimulating address by Mrs. Naina Lal Kidwai. At the outset, our deep gratitude to Mrs. Naina Lal Kidwai for accepting our invitation to be the Chief Guest this evening. Our grateful thanks to the sponsors – XPRO INDIA and MUTUAL INDUSTRIES. I also thank the Media for covering this event".

Mr. Paresh Parekh delivering Welcome Address

Mr. C. Bhaskar introducing Mrs. Naina Lal Kidwai

Founder Members Activities

Mrs. Naina Lal Kidwai receiving Bouquet from Mr. Dharmendra Gandhi, Managing Director, Mutual Industries Ltd, Mr. Paresh Parekh is all smiles

Mrs. Naina Lal Kidwai delivering her talk on – 'The Reform Agenda'

Section of Audience

Senior Members of OPPI with Mrs. N. L. Kidwai

INDIAN PLASTICS INSTITUTE

INDIAN PLASTICS INSTITUTE

PLASTINDIA FOUNDATION New Managing Committee Members Get-together Meet

IPI felicitated New Plastindia Foundation President Mr. Bipin Shah and his New Team members on 7th Sept, 2012 at a get-together at Khar Gymkhana. Many members of Plastics fraternity joined hands for this felicitation as well as for thanking the departing Plastindia Team.

Dr. Prakash Trivedi, Chairman, IPI congratulated Shri. Bipinbhai Shah for getting elected as President, Mr. R. A. Lohia as Vice President and Mr. Rajiv Raval as Treasurer of PLASTINDIA FOUNDATION and also for being the unanimous choice of all the Founder Members.

On behalf of IPI, Dr. Hiru Patel handed over a small gift to Bipinbhai, Dr. Ramesh Thakkar gave to Mr. Sakseria, Mr. Arvind Athalye to Mr. Rajiv Raval and Mr. Nirmal Thakkar gave to Mr. R. A. Lohia. A floral bouquet was also given to Mr. Bipinbhai on behalf of all present by Shri. J. R. Shah to welcome him as President and to wish him and his team full support to them from IPI. Since Mr. Ashok Goel, now Immediate Past President of PLASTINDIA FOUNDATION could not be present, a thank you gift was forwarded to his office separately.

All present, expressed wish and hope that the New PLASTINDIA FOUNDATION Managing Team will take PLASTINDIA FOUNDATION and Indian Plastics Industry to a new height and next level of progress. Dr. Hiru Patel and Mr. Kamal Nanavaty specially expressed this sentiment. Mr. Saksaria thanked the PLASTINDIA FOUNDATION Team for 2009/12 for their excellent team work and for the myriad achievements.

Mr. Bipin Shah conveyed his gratitude to IPI for choosing him as their representative to PLASTINDIA FOUNDATION and further for his candidature for the post of President and convincing all Founder Members to support him. PLASTINDIA FOUNDATION will provide him and his managing committee a vital platform to experiment his innovative ideas for the benefit of plastic fraternity.

Apart from those already mentioned the gathering included members of last and present PLASTINDIA FOUNDATION Managing teams, Past Presidents of PLASTINDIA FOUNDATION Shri. Shyam Tibrewal, Mahesh Shah and Arvind Mehta, GC Members of IPI, Presidents of GSPMA, AIPMA, IPF, and others.

Around 60- members representing all avenues of Plastics Industry and Academia joined the Get-together. A very fruitful fellowship with cocktail was followed by excellent dinner.

Our Special thanks to Shri J. R. Shah for his help in making all the arrangements of Get-together at Khar Gymkhana.

Dr. J. R. Shah, Mr. C. V. Jain and Mr. Bipin M. Shah

Dr. R. M. Thakkar, Mr. Bipin M. Shah and Dr. Hiru Patel

Mr. R. A. Lohia, Vice President of Plastindia Foundation being congratulated by Founder President Mr. Nirmal B. Thakkar

Founder Members Activities

Plastindia Foundation's new Managing Committee get-together organized by IPI.









Indian Plastics Federation

Indplas '12

INDIAN PLASTICS FEDERATION

From The Desk of Amar Seth, Chairman Indplas '12 EOC.

INDPLAS '12 generates business of Rs 100 crores

Kolkata, October 15,2012: The largest international plastics exhibition of Eastern India, Indplas 12, concluded on a positive note with business worth Rs.100 crore (USD $ 20 M).Indplas 12 - 6th International Exhibition on Plastics held at Science City, Kolkata from October 5-8, 2012 was a grand success where a total number of 271 exhibitors participated as compared to 237 exhibitors in the 5th edition. Exhibition was occupied with 4605 sq mtr (2700 sq mtr-5th edition in 2006). We had footfall of above 75000 visitors. The exhibition was supported by Taitra (a Government of Taiwan organisation) and 12 exhibitors from Taiwan participated in this year's Indplas, moreover exhibitors from China, South Korea and Italy also participated in Indplas 12. A Taiwanese business delegation of 30 business people visited the exhibition. We also had visit by Consul General of the People's Republic of China in Kolkata Mr. Zhang Lizhong.

Amongst distinguished visitors were Dr Nayak DG CIPET, Senior Office Bearers and Members of all founder members of Plastindia Foundation and other Supporting Associations.

Polymer manufacturers like Haldia Petrochemicals Ltd, Reliance Industries Ltd., Indian Oil Corp. Ltd., Dhunseri Tea and Polymers Ltd, Hindustan Mittal Energy Ltd, machinery manufacturers like Ferromatik Milacron, Lohia Starlinger, Electronica, Rajoo Engineers, Gujarat Machinery, Mamata Group and many others additive and master batch manufacturers as well as reprocessing machinery manufacturers participated in large number.

The National Committee of Plasticulture Applications in Horticulture (NCPAH) displayed the latest use of plastics in Horticulture and Agriculture with live demonstration. At the Indian Centre for Plastics in the Environment (ICPE) stall, the myths about plastics were clarified. Emphasis on plastic waste management was exhibited. Students from around 30 schools visited the exhibition on invitation. The students also visited the Theme Pavilion where the various uses of plastics in the field of Health care, Automobile, Aviation, Agriculture and many other areas of interest both in Household and Industry were showcased. Theme pavilion was jointly organized with CIPET.

Proposed Elevation of IPF Knowledge Centre Building was also displayed both at IPF stall and theme pavilion.

Two street shows were organised by college students related to environment and use of plastics as well as waste management. Live machinery were on display and visitors could see for themselves advanced machinery manufactured by Indian machinery manufacturers.

The fair was inaugurated by Janab Firhad Hakim, Hon'ble Minister of Municipal Affairs and Urban Development, Govt of West Bengal in presence of Special Guest Shri Alapan Bandopadhyay IAS, Principal Secretary, Commerce and Industries & Municipal Affairs, Govt of West Bengal, Shri Vivek Bharadwaj IAS, Chief Executive Officer, KMDA, Shri Bipin Shah, President - Plastindia Foundation; Shri P R Singhvi, Vice Chairman & MD - Borouge (India) Pvt. Ltd., Shri S. Mitra - Executive Director - Petrochemicals, Indian Oil Corp. Ltd. and Shri N. K. Surana, CMD Kalpena Industries Ltd. were the Guest of Honours. All the Platinum Sponsors were handed over Mementos for their support.

At a Glittering Award Nite programme held on 5th October, 2012 in presence of leaders of the Founder Members of Plastindia Foundation and senior executives of Reliance, GSFC, HMEL as Guests of Honour, Six Awards to exhibitors under various categories were distributed as well as GOLD and SILVER sponsors were felicitated by Guests of Honour.

On 6th October, 2012 GALA Nite was enjoyed by all exhibitors at a SUFI Nite over Cocktail Dinner. AIPMA President Mr Jayesh Rambhia felicitated Mr Rajesh Mohta President of IPF and the Chairman Indplas '12, EOC, Mr Amar Seth for successful Indplas '12. Mr Amar Seth dedicated the Felicitation to entire Indplas '12 team and thanked the team members.

Visitors from all over the country, mainly Eastern India and neighbouring countries like Bangladesh, Nepal, Myanmar, Bhutan, Thailand visited the exhibition in large numbers. Visitors from Italy, Iran and South Africa also visited the exhibition.

Team Indplas '12 thank all exhibitors and visitors for making Indplas '12 a grand success.

Looking forward to Indplas'15.

Founder Members Activities

ALL INDIA PLASTIC MANUFACTURERS ASSOCIATION

Grand Success of Kenyaplast 2012 Exhibition – Nairobi, Kenya

17th September, 2012 to 19th September, 2012

Kenyaplast 2012 was held at KICC, Nairobi from 17th September, 2012 to 19th September, 2012.

Compack Kenya (Packaging Exhibition) and Kenya Pharma expo were held as concurrent events.

There were 180 exhibitors all together accommodated in one indoor Hall and 2 outdoor hangers...

The exhibition was inaugurated by H E Tanmaya Lal, Acting High Commissioner of India at 10.00 AM on 17th. September, 2012. High Commissioner has allotted only 20 minutes for the show but spent more than an hour and interacted with many exhibitors. Visitor response was much beyond expectations based on past experience. Machinery section was well attended and most of the exhibitors received serious enquiries. Exhibition attracted close to 7000 business visitors. Visitors were from Kenya, Uganda, Tanzania, Ethiopia, Nigeria and Oman.

There were approx. 1,500 visitors on 1st day, more than 2,000 visitors on 2nd day and the 3rd day also witnessed good number of visitors. Out of total number of exhibitors 92 were from plastic industry, 80+ was from pharma industry making a total of approx. 175 exhibitors. In all the entire exhibition was successful in terms of business.

The infrastructure of Kenyatta International Conference Centre Exhibition ground was excellent.

AIPMA has organised 43 number of delegation who stayed in Hilton Hotel which is 5 min walking distance from the exhibition ground. All the exhibitors were impressed by the hospitality of Hotel Hilton Management. The Indian food provided was also appreciated.

AIPMA Stall

AIPMA had 24 sq. m stall in the main hall which was inaugurated H E Tanmaya Lal, Acting High Commissioner of India in presence of the authorities of Vibrant Gujarat Shri Vajubhai Vagasia, officers of The Kenya Chamber of Commerce & Industry and Kenya Packaging Institute.

The MOU regarding bi-lateral promotion of plastic industry between India and Kenya was signed with The Kenya Chamber of Commerce and Industry and Kenya Packaging Institute.

AIPMA generated 11 new memberships, approx. 198 sq. m. Plastivision India (PVI) 2013 space and 4 enquiries for land and 2 enquiries for Plastivision Arabia (PVA) 2014 space.

Harish Dharamsi
Chairman – Keynaplast 2012
Co-Chairman – Plastivision India 2013

Plastindia Foundation is proud to announce induction of its past president Shri Arvind Mehta into the executive committee of CIPAD.

CIPAD is Council of International Plastics Associations Directors based in USA

Congratulations!!

GUJARAT STATE PLASTIC MANUFACTURERS ASSOCIATION

Countdown to Plexpo 2013

Article by Shri Pinakin Shah-President, GSPMA

PLASTICS – path to progress

About GSPMA

Gujarat State Plastic Manufacturers Association (GSPMA) is one of the leading associations, having large number of members, representing Plastic Industry at State as well as Central level. GSPMA is working for the cause of Plastic Industry since last more than four decades. GSPMA is also one of the founders of PLASTINDIA FOUNDATION, dedicated to the progress through PLASTICS. Alongwith its other activities, GSPMA is also organizing plastics exhibition at every three year interval. The 6th Plexpoindia exhibition was organized from 8th to 13th January, 2013 at Gandhinagar (Gujarat).

Status & Scope of Plastic Industry in India

The Plastic Industry in India has made significant achievements since its modest but promising beginning by commencing production of polystyrene in 1957. Plastic Industry in India symbolizes a promising industry and at the same time helps in creating new employment opportunities for the people of India. The Indian Plastic Processing Industry is highly fragmented and comprising of about 30,000 units, providing employment to 3 million people and achieved the growth rate of 15%. A large investment in telecom, ports, roads, power and railways has ensured that his sector continues to grow at more than 15% p.a. The focus on plasticulture in the agricultural sector – envisaged coverage of 17 mn hectares under micro-irrigation schemes, will further boost the prospects of the Plastic Industry. The plastic processing industry is a source of great potential for global business. There is tremendous scope for innovative technological upgradation and thus rapid growth of the sector. Overall turnover of the plastic processing industry, which currently stands at USD 17.5 billion, is expected to touch USD 20.3 billion by the end of 2012 and further USD 27 billion by 2015.

India is already one of the fastest growing markets with a growth rate of around 15%. However, the per capita consumption of plastics is still low at 6 kgs/per capita vs. the world average of 26 kgs/per capita which brings with it a large latent opportunity for this sector to grow. The Indian plastic industry is expected to be worth US$30 bn by 2015, employing over 7 million people. An estimated US $ 100 bn of capital investment in new capacity is planned. The planned growth in the Indian economy is expected to be fueled by the development of the infrastructure, automotive and consumer goods sector, all of which will be significant drivers for the plastics sector.

Plastic Industry in Gujarat

Gujarat is the polymer State of India, where 70% of total plastic raw materials (produced in the country) being manufactured in India. At present around 7000 plastic processing units are working in the State. With the commissioning of RIL (Jamnagar) world class plant, the plastic industry flourished in the State. Reliance Group today has the greatest and outstanding contribution to the Plastic Industry in India by giving it a global identity in every respect to produce world class polymers.

Vision

To be globally competitive Gujarat have to have intelligent manufacturing and enhanced design capabilities, conformation to best global practices in production and quality, effective energy management, efficient knowledge management and proficient supply chain management.

Conclusion

Plastics play a significant role in the key sectors of the economy including agriculture, water management, automobiles, transportation, telecommunication and electronics desides defence and aerospace, computers and power transmissions. As of now the Indian Plastic Industry has enormous potential for growth as polymer use in India is far below the world level. With the increasing competition in the global market and the constant drive to improve our living standards, the scope for use of plastics is bound to increase manifold and make the production double in the coming years.

Founder Members Activities

Ketan Shah
Chairman-Plexpoindia 2013

The 6th Plexpoindia exhibition was organized by Gujarat State Plastic Manufacturers Association from 8th to 13th January, 2013 at Helipad Ground, Near Mahatma Mandir, Gandhinagar (Gujarat).

Plexpoindia 2013 was one of the best shows in the world of Plastic Industry, wherein major exhibitor groups were raw material manufacturers, machinery & equipment manufacturers, finished goods, moulds & dies, recycling, quality control & testing equipments, major promotion bodies & trade associations, etc. At display were latest equipment and machinery from leading manufacturers. The show offered a good opportunity to see live demonstration of plastic machinery. Major raw material suppliers, and manufacturers of plastic products were present offering latest products. There was Theme Pavilion which was one of the major attractions of the show highlighting the important role plastics can play in our day-to-day life and also in nation's economy, including Plasticulture, Healthcare, Environment protection and how it helps in preserving natural resources.

The Indian plastic industry is growing @ 15% p.a. and the consumption of plastics growing significantly. Agriculture, packaging, automobiles, Electronics, Telecom, Healthcare, Infrastructure, Transportation & Consumer Durables are major drivers of growth in plastic consumption. The focus on plasticulture in the agricultural sector – envisaged coverage of 17 million hectares under micro-irrigation schemes, which will further boost the prospects of the plastics industry.

Plastindia Foundation at Plexpoindia 2013

Mr.Bipin M. Shah, President - Plastindia Foundation at Innaugaration of 6th Plexpo India 2013

CENTRAL INSTITUTE OF PLASTICS ENGINEERING & TECHNOLOGY

(a) Inauguration of High Learning Centre, Chennai

The High Learning Centre at CIPET, Chennai was inaugurated by Shri M.K. Alagiri, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India on 26th March, 2012. The Centre offers Doctoral, Postgraduate and Undergraduate programs in Plastics Engineering and Technology in affiliation with Anna University, Chennai.

Shri M.K. Alagiri, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India inaugurated the High Learning Centre, Chennai on 26th March, 2012

(b) Inauguration of Centre for Bio-Polymer Science & Technology (CBPST), Kochi

Centre for Bio-Polymer Science & Technology (CBPST)-which would be a model centre for Academic Programs in Bio-Polymer Science & Technology - was inaugurated jointly by Shri M.K. Alagiri, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India and Shri Oommen Chandy, Hon'ble Chief Minister, Kerala on 25th Aug. 2012. CBPST, Kochi would focus on promoting Bio-Polymers and allied industries. CBPST in collaboration with Cochin University of Science & Technology (CUSAT) is offering Post Graduate Program in Bio-Polymer Science (M.Sc. – BPS) from the academic year 2012-13 onwards. The centre is also recognized by CUSAT for conducting Doctoral programs in the niche areas of Polymer Science & Technology.

(c) National Award for Technology Innovation

The Government of India announced the National Policy on Petrochemicals in April 2007. The policy envisaged

Inauguration of Centre for Bio-Polymer Science & Technology (CBPST), Kochi by Shri M.K. Alagiri, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India jointly with Shri Oommen Chandy, Hon'ble Chief Minister, Kerala on 25th Aug. 2012

institutionalization of National Awards for Technology Innovation in various fields of Petrochemicals and downstream Plastic Processing industry. In the Downstream Plastics Processing industry, the areas that were identified for the awards includes Plastics, Elastomers, Synthetic fibre, Surfactants & intermediates, new emerging areas. CIPET was entrusted with all the work related to this award. Shri K. Jose Cyriac, I.A.S., Secretary (Chemicals & Petrochemicals), Govt. of India presented Shield, Citation and cash award to the winners and runners up at the 2nd National Award function held on 26th April, 2012 at New Delhi.

Founder Members Activities

Shri K. Jose Cyriac, I.A.S., Secretary (Chemicals & Petrochemicals), Govt. of India presenting the award to an awardee on 26th April, 2012

(d) Signing of MoU

MoU was signed with Shanghai University on 19th April, 2012 at Shanghai University for Exchange of Academic Staff, Exchange of Students, Cooperative Research and Exchange of Academic Materials.

Signing of MoU with Shanghai University, Shanghai by Smt Neelkamal Darbari, I.A.S., Joint Secretary (PC), Dept. of Chemicals and Petrochemicals

(e) International Conference

Laboratory for Advanced Research in Polymeric Materials (LARPM)-R&D wing of CIPET had organized an International Conference titled "Advancements in Polymeric Materials (APM-2012): Exploring the Hidden Potential of Polymeric Materials" during 10th – 12th Feb. 2012 at Ahmedabad. Around 260 Research papers on different themes were deliberated during the Conference. The participants included eminent scientists, Researchers and students from eight foreign universities.

Shri k. Jose Cyriac, I.A.S. Secretary, Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India and President - CIPET Governing Council addressed the gathering during the inaugural function of APM 2012

(f) Workshop on Plastic Waste Management

CIPET has been contributing to the issue of Plastic Waste Management in the society by organizing Conference/Workshops/ Seminar for the Government Officials, NGOs and various stake holders. A workshop on "Plastics Waste Management: Recycling Technologies" was organized at New Delhi on 21st March, 2012

Inaugural Address by Shri K. Jose Cyriac, I.A.S, Secretary to the Govt. of India, Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers

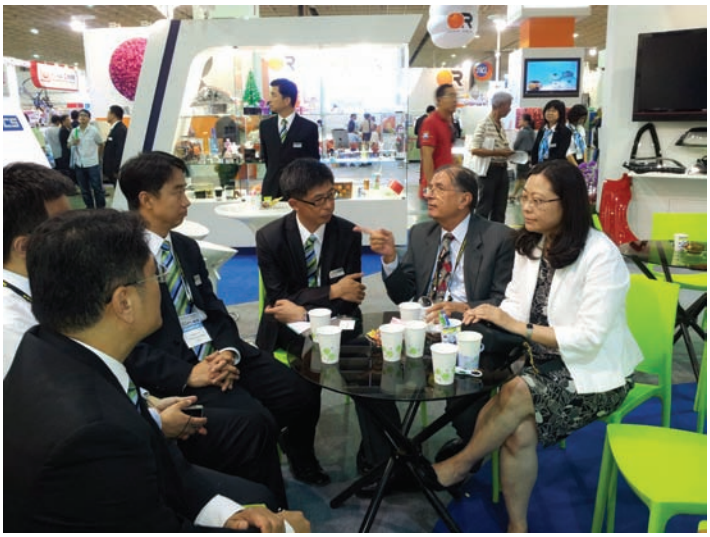
(g) Initiative for Plastic Waste Management at Grass Root Level

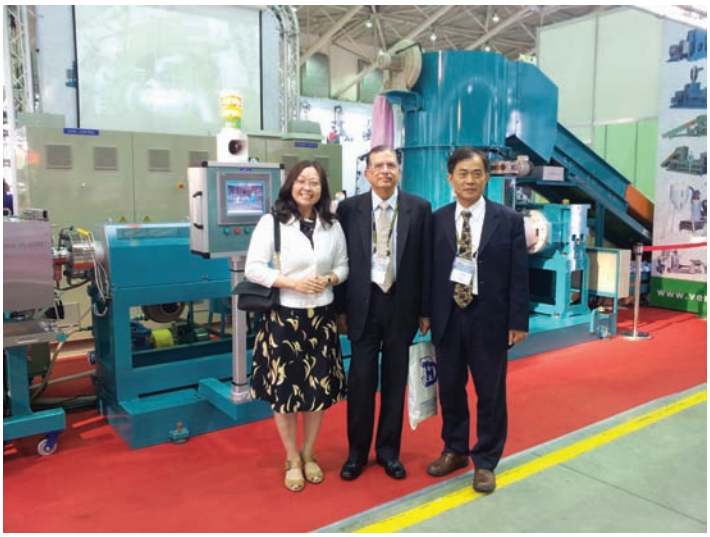
CIPET has taken initiative for Plastics Recycling at Grass root level by launching "Recycle Wall" project in association with Paperman-an NGO based at Chennai in 5 selected schools at Chennai. As per this project, recycle wall was used to collect the plastic waste material and the collected waste material was handed over to the Paperman connected with the school and get the money for the amount of waste material. The collected money were used for a variety of noble causes in consultation with the teachers.

Prof. (Dr.) S.K. Nayak, Director General, CIPET launching the "Recycling Wall" for Plastics Waste Management at a School in Chennai on 24th January, 2012.

Events & Happenings

Vietnam Plast 2012





THE INTERNATIONAL CONFERENCE ON NATURAL POLYMERS (ICNP 2012_ 26-28 OCTOBER 2012

Third International Conference on Natural Polymers (ICNP 2012) 26-28, 2012 which is organized by Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kottayam, Kerala; and Beijing University of Chemical Technology, China was held at School of Chemical Science Auditorium, Mahatma Gandhi University, Kottayam, Kerala. Honourable Vice Chancellor of M.G. University Prof. Rajan Gurukkal inaugurated this three day seminar. Prof. Oluwatobi Oluwafemi (South Africa) gave felicitation on that occasion. Dr. Nandakumar. K (Joint Director, Centre for Nano Science and Nanotechnology) gave vote of thanks and Prof. Sabu Thomas (Director, Centre for Nanoscience and Nanotechnology) welcomed the gathering. About 220 delegates (Both foreign and Indian) are participating this conference and presenting their research works. The conference featured keynote addresses, a number of plenary sessions, invited talks and contributed lectures focusing on specific tenets of Natural Polymers and Biomaterials.

The conference had the following sessions: Agro waste /Natural fibres, Applications, Bio-polymers, Bio-composites, Bio-plastics, Bio-fuel, Bio-medical Applications, Bio-Nanocomposites, Bio-plastics, Characterization, Chitosan Polymers, Composites, Electro Spinning, Gels, Medical Applications, Membranes, Molecular Imprinted Polymers, Nanocomposites, Natural fibre, Natural polymers/ Biopolymers, Plasma Processing, Polymer Composites, Polymer for Environment, Proteins, Radiation Processing, Sensors, Synthesis, Theory/Modelling/ Simulations, Thin Film, Water / Waste Purification and Utilization, Wood, Wood Based Composites and Joints. There were 3 keynote talks, 160 invited talks and 78 posters.

Joint Project Discussion

In the evening of the first day of the conference there was brain storming discussion meeting in order to submit a joint project proposal to European Union under the seventh frame work programme of FP7 for funding between various countries, India and China. There was also discussion meeting on other bilateral research progrmmes between DST of India and rest of the world. These include DST-NSF, DST-DAAD, DST-DFG, DST-KBN, Indo-French (CEFIPRA), DST-Australia, etc etc. This conference acted as a good platform to find partners for international research collaborations. After this there was a poster presentation competition and about 76 researchers and students participated in this poster session.

The conference also envisaged the importance of networking between different labs from India and abroad. The conference also stressed the need for strong collaboration between Industry and University for the development of Natural Polymers and Biomaterials. Interesting talks were made by European researchers on Natural Polymers. There were discussion meeting on the possibilities of submitting joint projects between India and Europe under the FP7 frame work of EU. Several participants showed interest for the joint projects under this frame work. The conference was supported by Plastindia Foundation, Mumbai, Apollo Tyres, Kerala, DRDO, New Delhi, DST, New Delhi, CSIR, New Delhi.

For further information please contact Prof. Sabu Thomas, Chairman - ICNP 2012

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International Packtech India 2012, November, 6th-8th, 2012, Mumbai

Society of Plastics Engineers Presents
ANTEC® MUMBAI
2012 CONFERENCE

The Society of Plastic Engineers, USA also popularly known as SPE, organized it Prestigious ANTEC conference in Mumbai, India on December 6 & 7, 2012 at the Renaissance Convention Centre Hotel, Powai, Mumbai. This is the first time that ANTEC has been organized outside North America in the Society's 70th year of Existence & Excellence. This Plastics & Polymers conference has been the largest ever conference for the Industry with a 2 day event where 178 papers were presented across 7 parallel sessions. An interesting session during the conference was the New Technologies Forum, where 6 invited eminent speakers from across the global presented on the future of Plastics and Plastic Processing in the areas of Carbonaceous nano-materials, including graphenes and carbon nano-tubes, concluding with a panel discussion.

Also for the first time, special hands on workshops on Plastics was organized in key areas of plastics engineering - Thermoforming, Injection molding and Medical Plastics devices.

The event was attended by over 450 delegates, and was supported by the entire plastic industry with Patrons such as Reliance Industries Limited, SABIC, MAAC Thermoforming Machinery, Plastics Machinery Group, Paradise Plastics, Senoplast, Mutual Lightweighting, GEISS, Owens-Corning, Machinecraft, ANTON PAAR, Fine Organics, ILLIG, Gharda Chemicals, Thermo Scientific, TA Instruments, Ticona, Steer Engineering, Datacolor, Rosler, OMV Machinery, Compulast, Vitasheet Group, Jubilant Industries, GAIL (India) Ltd, Baerlocher.

Prime Industry Supporters like Plastindia Foundation, AIPMA and associations like IPI, OPPI, Plexcouncil, IPF, GSPMA, PPA, SPI also participated.

The conference also hosted a special Plenary session where Shri Manohar Parrikar, Hon'ble Chief Minister of Goa and a Materials Science Engineer from IIT, Bombay was the Guest of Honour . The event was also attended by Jim Griffing, SPE Global President 2012-2013, Ken Braney- Sponsorship Chair, Vijay Boolani-Technical Programme Chair & President Elect 2013-14, (SPE Global). Dr. Ernesto Occhiello, Executive Vice President, Technology and Innovation, SABIC, delivered a Special Plenary address on Plastics for Sustainability. Dr. Ajit Sapre, Group President, Research & Technology, Reliance Industries Limited delivered his plenary address on Business and Technology – Trends and Challenges for the Indian Industry.

ANTEC will again be hosted in India in December 2014 and given the response that has been received from patrons, delegates and speakers; we expect a much larger convention and conference.

Plenary Session at Antec, Mumbai

Mr. Bipin M. Shah, President - Plastindia Foundation at Plast Eurasia 2012 Exhibition & Conference held at Istanbul, Turkey

VISION

PLASTINDIA will be an organization devoted to promoting excellence in the field of plastics and making India a preferred sourcing base for plastic products for the world.

It will support and encourage development of outstanding institutions committed to education and research with emphasis on achieving the highest standards of quality in plastic products and developing effective techniques for their recycling.

It will build awareness of the significant contribution made by plastics to society and the environment

MISSION

- ***To enhance the image and the growth of Indian Plastic Industry by holding world – Class exhibitions in India, at regular intervals.***
- ***To encourage theme-based exhibitions in India.***
- ***To provide opportunities to demonstrate the industry's capabilities, participate in international exhibitions.***
- ***To educate the benefits of plastics to all segments of society, either directly or through associations.***
- ***To act as the catalyst for growth to the plastic industry and prepare plans and actions for upgradation of quality, environment-friendliness and recycling within the plastic industry.***
- ***To create a positive policy framework with all statutory entities and increase per capita consumption of plastics, encourage exports thereby significantly contributing to national growth.***
- ***To be flexible, vibrant and proactive body.***

PLASTINDIA 2015

9TH INTERNATIONAL PLASTICS EXHIBITION & CONFERENCE, FEBRUARY 5 -10, 2015

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