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From The President's Desk

K K Seksaria
President - Plastindia Foundation

Dear Friends,

At the outset, let me express my sincere thanks to all the readers for the encouraging response to the revamped magazine of the Foundation Vol. 46 - , "INSIGHTS – Plastics Industry in Focus". The comments received on the magazine so far, have been very positive and well appreciated. At the same time, we assure that the Publication Committee of the Foundation is taking utmost care to constantly maintain high quality standard of the magazine at all times and is striving towards providing professional services to the Plastics Industry.

Vol. 47, the current edition, contains a special tribute to one of the leading doyens of the Plastics Industry, Shri Bhavarlalji Jain, who has recently passed away. His contribution to the Plastics Industry in Agriculture has been invaluable. His constant support and efforts in the use of Plastics in Agriculture has helped the farmers enormously. This edition also covers technology aspect of the Plastics, the latest updates on global Petrochem market and techno-product development in India as well as investment opportunities for the Plastics Industry, which I hope, shall give clear insight to the reader.

As you are aware, Plastindia Foundation apart from Exhibition Organizing for the Plastics Industry is undertaking major activities for the Plastics Industry such as setting up of world class University for Plastics & Polymers Industry to generate highly skilled manpower and to propagate the use of Plastics in Agriculture to help the marginalized farmers and save scarce resources like water etc.

Even though my colleague and the Chairman of NEC, Plastindia 2018, Shri Rajeev Chitalia has already submitted his detailed report on the exhibition activities, but still, I take this liberty of informing with great pleasure that the response to our next edition of the show, PLASTINDIA 2018 scheduled to be held at Gandhinagar, Gujarat, between February 5-12, 2018 from Overseas participants has been overwhelming, with their demand for space exceeding more than 50% of the net space available at the Venue.

It is a proud moment for me to announce that the application of Plastindia Foundation to the State Government under the provisions of the Principal Act – Gujarat Private Universities Act, 2009 to establish Plastindia International University (PIU) as Private University in Vapi, Gujarat, India was accepted by the Gujarat Government. Thereafter, the draft bill for establishing PIU as Private University was presented and approved during the Gujarat assembly session held on 31.03.2016. We are now awaiting the official notification/act stating amendment in the schedule of Principal Act - Gujarat Private Universities Act, 2009 adding PIU as one of the Private Universities. The Empowerment Committee constituted for undertaking the activities of PIU under the Chairmanship of Shri Arvind M. Mehta is now working fervently to achieve the dream of the Plastics Industry. Apart from the above, the other key activities of the Foundation such as Plasticulture activities are covered in detail in this edition.

Once again thank you for your valuable support / feedback received and hope to receive in future too.

Warm regards,

K. K. Seksaria

President

Plastindia Foundation

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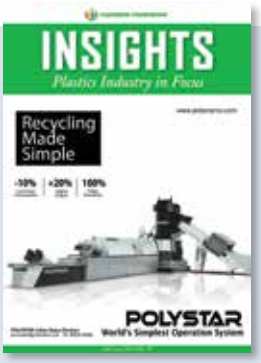

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From The Editor's Desk

Kavita Shah

Shri Bhavarlal Jain, founder Jain Irrigation Systems, passed away on 25th February, 2016 after a brief illness, at the age of 79. Known as "Bhau", he will be remembered for transforming the lives of countless farmers by pioneering the micro irrigation system in India. We pay tribute to him in this issue.

Developing prototypes, mass customization, production of complex parts, government investments in projects and improved manufacturing efficiency are expected to drive the 3D printing market. By decade-end, this industry is expected to witness double digit growth. How 3D Printing Becomes Normal and Ordinary gives an insight into this.

The abundant supply of shale gas in North America has unleashed a wave of capital investment in its petrochemical industry. Besides oil and natural gas, large quantities of naphtha, and natural gas liquids such as ethane, propane and butane are entering the market at low costs. The article on Shale Gas shows how this is reshaping the petrochem industry in Asia, Europe, Latin America and challenging the leadership supplier position of the Middle East.

Hot-runner Systems provide a variety of benefits- savings in terms of money, less waste, improved cycle time, among other. But these benefits add complexity to the tool and increased residence time for the molten plastic, which can lead to material burning. Trouble Shooting Material Burning discusses this in detail.

With Government announcing Digital India Program to empower and bring together India's social-commercial ecosystem, need for better communication infrastructure has seen a boost like never before. We cover a machine Made in India that contributes to the telecom infrastructure development.

Investment Opportunities Corner highlights Swachha Bharat by focusing on Double Wall Corrugated PE Pipes for Sanitation with advantages of corrosion resistance, longer lengths, easy transportation and installations, better flow properties, etc.

Project Report describes the success of PP Non-woven Crop cover for frost protection.

Academia News covers a composite material developed by students from waste polymer, which will be effective in making helmets, car bumpers and windmill blades stronger.

Updates for the past 3 months on PIU, Kisaan Raja, PI 2018, Foundation activities and Founder Member Activities are also covered.

Hope you enjoy this edition of INSIGHTS.

Ms. Kavita Shah
Chairperson- Publication Committee
Plastindia Foundation

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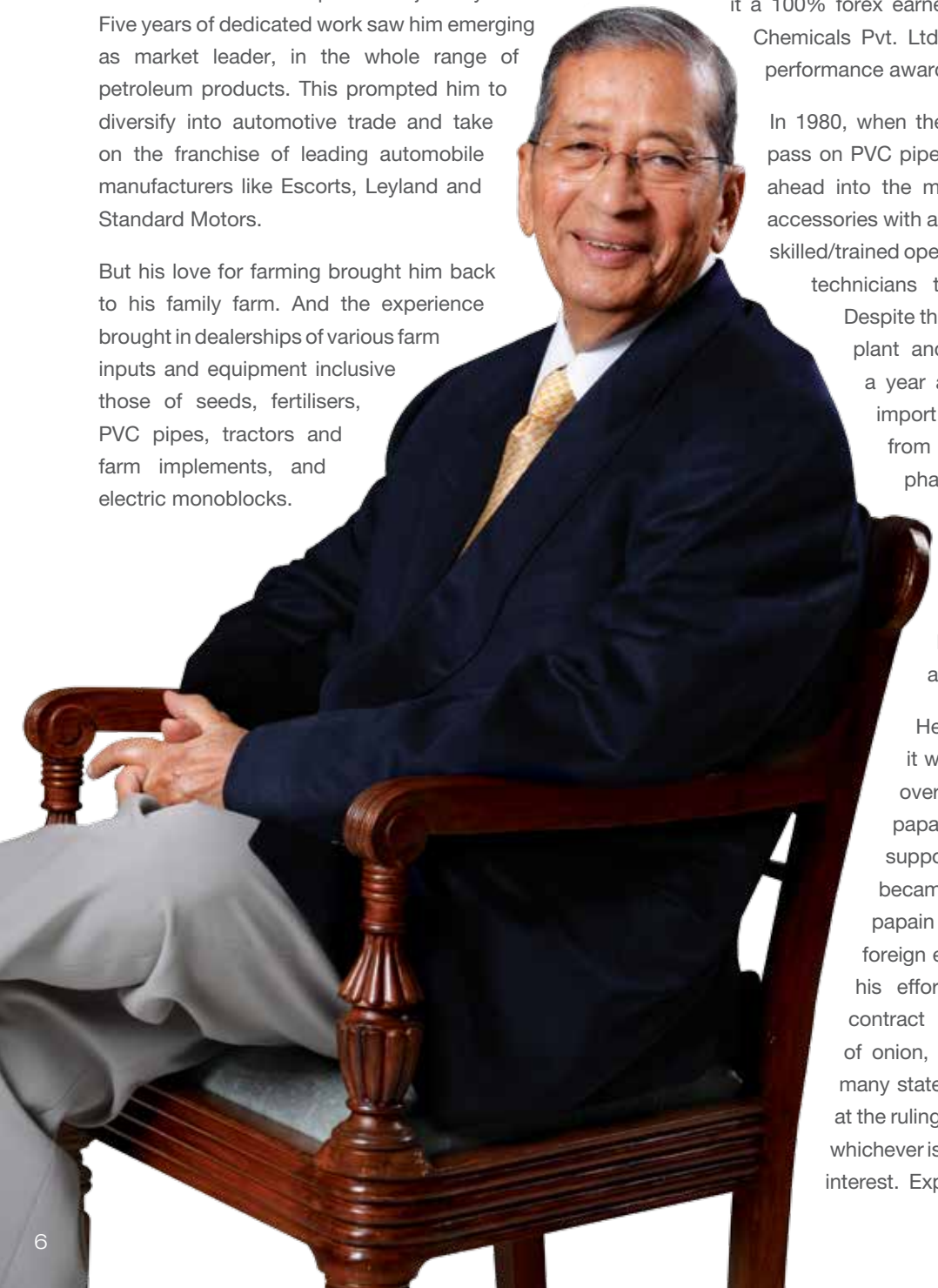
Land, Labour, and Library - A tribute to Mr Bhavarlal Jain

For late Shri Bhavarlal H. Jain, the founder chairman of the Jain Group, it was a long and arduous route to the path of success.

Despite being successful in the Maharashtra State Civil Services Exam, he opted out of a career in the government and started on his entrepreneurial journey in 1963. Five years of dedicated work saw him emerging as market leader, in the whole range of petroleum products. This prompted him to diversify into automotive trade and take on the franchise of leading automobile manufacturers like Escorts, Leyland and Standard Motors.

But his love for farming brought him back to his family farm. And the experience brought in dealerships of various farm inputs and equipment inclusive those of seeds, fertilisers, PVC pipes, tractors and farm implements, and electric monoblocks.



In 1978, Shri Jain made banana powder unit operative for the manufacture of Papain, aproteolyticenzyme. He encountered stiff resistance in marketing/exporting this new agro-based product. However, his tireless marketing efforts drew the attention of Papain users the world over, who recognised and accepted the superiority of the Refined Papain of India, making it a 100% forex earner and the company Jain Plastics & Chemicals Pvt. Ltd. was the recipient of many export performance awards thereafter.

In 1980, when the suppliers of PVC pipes refused to pass on PVC pipe manufacturing technology, he went ahead into the manufacture of rigid PVC pipes and accessories with a small Indian extruder. He neither had skilled/trained operators nor had any polymer scientists/ technicians to handle PVC pipe manufacture. Despite this, he went ahead with the production plant and surmounting all obstacles, within a year and a half, he was in a position to import a large sophisticated extruder from Cincinnati Milacron of Austria. Well phased expansion programmes enabled Jain Pipe enhance its capacity to 20,000 tonnes per annum by 1984. The next two years saw its other units in Madhya Pradesh and Tamil Nadu increase the annual capacity by about 10,000 tonnes.

He introduced contract farming when it was not much in vogue and motivated over 2,500 small farmers to cultivate papaya, guaranteeing them minimum support price for their papaya latex. He became the first exporter of highly refined papain to advanced nations earning valuable foreign exchange. The trait continues. Today, his efforts have extended the benefits of contract farming directly to a vast number of onion, banana and mango growers across many states. They now buy back their produce at the ruling market price or the guaranteed price, whichever is higher - a bold departure for the larger interest. Exports of their world-class processed

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fruits and vegetables have reached the five continents.

Shri Jain was acutely aware that water would remain a limiting factor for development. He propagated since 1980, use of the cost-effective, innovative, long-life and easy-to-handle PVC piping to replace conventional short length wasteful cement pipes - an idea which did herald a revolution in farm irrigation, benefitting millions of farmers. His success in PVC pipes prompted over 150 small scale manufacturers to set up such units across the country. PVC piping avoided only conveyance losses from the well to the field boundary. The distribution/irrigation losses continued. The pathfinder Mr. Jain studied micro-irrigation technology - MIT, which promised not only to conserve water at every stage but also to enhance farm productivity. However, it meant treading the path where many had failed. To win a tradition-bound farmer from age-old practice of furrow irrigation and get him to pledge his land for acquisition of hitherto unknown technology was both a herculean task and a challenge to his creative faculties. He decided to march ahead with an integrated approach.

Burning Desire to Grow

In 1986, Shri Jain acquired a major share in EMCO Transformers. This was a sick unit running into losses. However, using his entrepreneurial skill he converted this unit into a high turnover and profit making company in a short span of two years.

He also set up Jain Irrigation Systems Ltd (JISL) in 1987 for supplying to farmers a new technological input in the field of micro (drip) irrigationsystems in collaboration with James Hardie SRL (Italy), acknowledged leaders in the field. Before him, some of the multi-national companies had tried their best to popularise micro irrigation technology in India. Despite their prolonged efforts they had failed miserably. Jain therefore began analysis of the failures of those companies and succeeded in developing an integrated solution to market micro irrigation systems successfully. From a small capital outlay of Rs 7.80 crore in 1987, the company now boasts of a turnover over Rs. 7000 crores. Even the growth of the drip (micro) irrigation systems has been phenomenal – from a meagre 1500 hectares in 1987 to over 5 million hectares today.

He has greatly contributed in improving the standard of living of small farmers by enabling/empowering them to be self-reliant through supply of high yielding planting materials, providing agronomic support, assisting in adopting hi-tech agri practices, buying back their produce at prices profitable to them, and sharing experiences of research and development in agriculture.This and his other contributions to agriculture have led universities to bestow four honorary doctorates and have won him numerous national and international awards. The prestigious Crawford Reid Award for promoting proper irrigation techniques, has been given to only two Asians till date. More recently the nation recognized his work and awarded him the Padmashree in 2008. He set up a huge Agri-Institute at Jain Hills with a faculty of agronomists and doctorates to train farmers from all over India and abroad on the latest farming methods. Shri Jain always used to mention that “we must feed the hands that feeds us” which is a testimony of the hard labour that the farmers undertake during their farming practice.

JISL became more focused in later years, concentrating on four businesses: agricultural inputs, food processing, plastic products and renewable energy. In the next five years, its

revenues grew by 46 per cent and earnings increased by 70%. It has now diversified into food processing such as dehydrated, concentrated and frozen fruits and vegetables, all by developing value chains with over 25,000 small farmers - a majority of whom have less than one hectare of land. ‘Fruit and vegetable processing helps in aiding food security and ensures value addition for the farmers’ produce. Not only is JISL the world leader in drip irrigation with pipe production, the third largest onion and vegetable dehydrator, the largest mango processor and the world’s largest producer of tissue culture banana and pomegranate plantlets, it is also a pioneer

in using green energy and biogas with units equipped with solar pumps. Solar agricultural pumps and drinking water hand pumps are a great boon to rural India and they also help preserve, protect and promote the environment.

Shri Bhavarlal Jain, believed in Gandhi's notion of trusteeship, where wealth belongs not to an individual but should be used for the benefit of the community at large. Shri Jain's charitable trust (started in 1982) promotes education; health; sports; cultural; religious; spiritual and social spheres. The trust has adopted five backward villages in and around Jalgaon, and two schools: a world-class residential school named Anubhuti-1 which emphasizes Indian cultural heritage, interdependence and entrepreneurial abilities. There is another school named Anubhuti-2, which provides top-class free education in English medium to students whose families live below the poverty line. His Jain Sports Academy also nurtures young and raw talent particularly in rural areas, while his five general city clinics offer healthcare solutions at nominal costs. His annual health camps provide free medical assistance to the needy, while his educational scholarships and employment opportunities encourage young adults to pursue a meaningful career.

Shri Bhavarlal Jain's efforts to preserve Mahatma Gandhi's ideals for posterity culminated in the Gandhi Research Foundation. Located amidst well-manicured lawns and a population-free zone, the Foundation houses a museum, an international research centre and well-preserved Gandhian archives. Inside the museum, the saga of India's freedom struggle comes alive through photographs, memorabilia and state-of-the-art multimedia aids like film and video clips, audio books, light and sound displays and sections modelled to depict significant incidents like the Swadeshi Movement.

Three words characterize this tall man: Land, Labour, and Library.

Troubleshooting Material Burning In Hot-Runner Systems

Burns in hot runners can be misleading and hard to diagnose correctly. Follow these tips to track down the root cause of your problem.

Hot-runner systems provide a variety of benefits: They save the molder money by eliminating wasted material and improving cycle time. They allow the part designer to place the gates in any location required to properly fill the cavity. Hot runners even allow the molder to open and close the valve gates independently for optimal cavity filling and locating of weld lines. But with all these benefits come an additional layer of complexity to the tool and increased residence time for the molten plastic, which can lead to material burning in the hot-runner system.

It is very common for the root cause of burns to be misdiagnosed, causing the molder to waste excessive time searching for a resolution to the problem, when a little extra time spent in understanding the issue would lead to a solution much quicker. Degradation of material in a hot-runner system is typically caused by excessive thermal history, hot spots, stagnation points, venting, or a combination of the four.

EXCESSIVE THERMAL HISTORY

When diagnosing a problem with burning, the complete heat history of the material must be considered. Many polymers are time/temperature sensitive, which means they can only withstand elevated temperatures for a limited amount of time. The higher the temperature, the less time until degradation begins. However, even time spent at lower temperatures adds to the heat history of the material and can contribute to degradation down the road.

A common false assumption is that if the material does not look burnt when purged out of the molding machine nozzle, then the problem must lie in the hot-runner system. Lack of burnt material in the purge does not mean the material has not already been subjected to an extensive heat history, giving it very little chance of making it through the hot runner without burning. Many materials will show no visible sign of degradation until they reach a tipping point, when burnt material begins to appear. Because the molten material flows through the hot-runner system last, the residence time in the hot runner is often just the “straw that breaks the camel’s back,” but it may appear to be the root cause of the burning.

Even material drying adds to the resin’s thermal history. Drastically overdrying the material typically won’t show any visible negative impact on the pellets but it does add to the polymer’s thermal history and can make the material more likely to burn later in the process.

Another common false assumption is that if the burn only shows up in the material coming out of certain hot-runner nozzles, then there must be something wrong with those nozzles. Which nozzles are feeding the burnt material is valuable information that can help determine where the root of the problem lies, but it can also be misleading.

Flow of the molten polymer through the hot-runner system is always laminar. Laminar flow simply means the material flows in parallel layers, so that there is no mixing between layers of the molten polymer. Material at the wall will stay at the wall and material in the center of the flow will stay at the center. Although the flow through a hot runner with multiple splits and turns is a bit more complicated, the material will always take the same path through the hot runner. Because of laminar flow, a burn originating upstream—in the machine nozzle, for example—will always follow the same path through the hot runner and often will appear in material coming out of certain nozzles.

HOT SPOTS

An obvious cause of burns in a hot-runner system is any area of the hot runner with a steel temperature over setpoint. Any hot-runner zones overshooting the temperature-control setpoint are obviously a potential issue. On the other hand, just because the temperature controller shows all the zones to be at setpoint doesn’t mean that is truly the case. The only way to be sure that accurate values are being reported by the controller is to remove the top clamp plate and check the hot-runner steel with a pyrometer while the system is at setpoint.

Sometimes it will be assumed that there is a temperature issue in a particular hot-runner nozzle because it is feeding an area of the part where a burn appears, and that turning down the heat to the suspect nozzle will immediately solve the problem. Turning down the temperature of the nozzle feeding the area where a burn exists is logical but is often only a temporary solution. If a burn is originating from a problem upstream, and because of laminar flow it is following the wall of the flow

bores to a certain nozzle, then cooling that nozzle will cool the material at the flow-bore wall first.

This can slow the movement of material near the flow-bore wall or even freeze it in place if the temperature is lowered enough, essentially trapping the already burnt material in place, which can temporarily eliminate the burn from the part. By doing this, the root issue has not been resolved, so the burn will eventually make its way back into the part.

STAGNATION POINTS

Stagnation points are spots in the hot runner where material becomes trapped, rather than flowing through. This causes a small amount of material to see an extreme thermal history, degrading and slowly bleeding into the flow of the moving material on each shot. Suppliers of high-quality hot runners pay a great deal of attention to potential stagnation points during manufacturing and inspection of the systems they build. Even in a perfectly constructed hot-runner system, there are a couple of common stagnation points.

The most common of these is at the interface between the machine nozzle and hot-runner inlet. The inlet commonly has an orifice smaller than the inlet flow bore. This is done to reduce the amount of material that drools out of the inlet when the hot runner is heated and the machine nozzle is pulled away from the inlet. The molder should size the orifice of the machine nozzle to match that of the hot-runner inlet. This is frequently not done, either by oversight or a misunderstanding of what the relationship between the orifices should be (see Fig. 1).

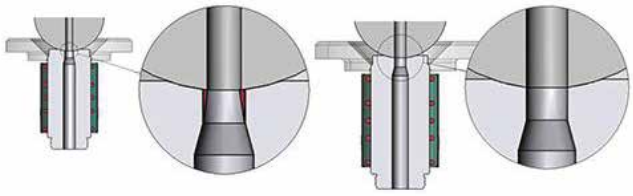

Figure 1

Left: Machine nozzle-tip orifice is smaller than the inlet orifice, creating an area of stagnant material at the wall of the inlet orifice

Right: Machine nozzle-tip orifice is the same size as the inlet orifice, eliminating any stagnant material at the wall of the inlet orifice

When molding with a cold runner, the machine-nozzle orifice should be slightly smaller than the orifice of the cold sprue bushing to be sure material freezing on the machine-nozzle side of the interface does not hold the sprue in the mold when it opens. The material at this interface gets ejected with the cold runner on every cycle, so a stagnation point is not a concern.

But with a hot runner, there is no reason to make the machine nozzle orifice undersized; a line-to-line fit is ideal, eliminating any potential stagnation point. It is also important that the barrel and machine nozzle be perfectly aligned to the inlet.

Another common stagnation point can be at the interface of the hot-runner nozzle with the manifold. Hot-runner nozzles fall into two categories with respect to how they mate to the manifold—sliding and threaded. Sliding nozzles are not physically attached to the hot-runner manifold. They are installed in the mold first and then the manifold is placed on top of them, held down either by bolts or just by pads touching off on the top clamp plate. At room temperature, the flow bore in the nozzle does not align with the flow bore in the manifold. The manifold is designed undersized so that when it heats up and thermally expands, the bores in the manifold and nozzles will line up perfectly.

The alignment of the bores depends on the manufacturing tolerances of the hot-runner system and the tool as well as the operating temperature of the manifold. It can therefore be expected that in the vast majority of cases, the nozzle and manifold sub-bores do not perfectly align when at operating temperature and a small stagnation point is created at this interface for each nozzle.

Threaded nozzles, on the other hand, are threaded into the manifold block with their bores being aligned to the manifold bores as an assembly. The complete assembly is designed to slide into the mold at room temperature. As the manifold expands, the nozzles are designed to flex while maintaining perfect alignment of the bores. With this style of system, we can rule out a stagnation point at the nozzle/manifold interface as a result of dimensional tolerance stack-up or variation in operating temperature (Fig. 2).

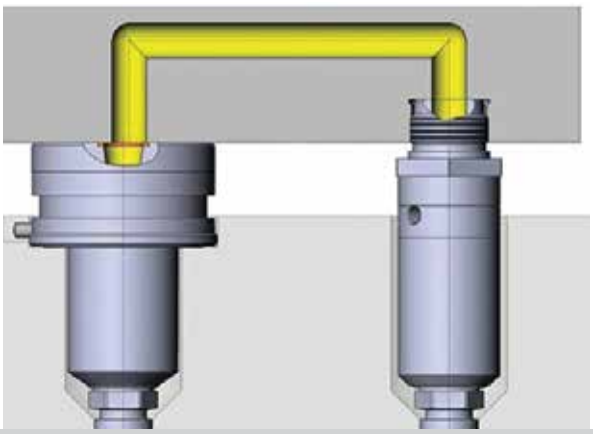

Figure 2

Left: Flow bore of sliding nozzle does not align with the flow bore in manifold at room temperature. This design relies on an assumed amount of thermal expansion of the manifold to move the flow bores into perfect alignment. Proper alignment is heavily dependent on operating temperature and machining tolerance of both the hot runner and the mold.

Right: Flow bore of the threaded nozzle aligns perfectly with the flow bore in the manifold at room temperature. These nozzles are designed to flex as the manifold grows keeping the bores aligned at any temperature. Proper alignment is not impacted by temperature or machining tolerances.

COLD RUNNER VENTING

One of the most significant advantages of a hot-runner system is the ability to sequence the gates. Large, complex, multi-gated parts often utilize hot-runner systems to allow the gates to be sequenced to fill out the cavity evenly and either eliminate or control the location of the weld lines. On these parts, the hot runner often will gate into cold sprues or short cold runners.

When adjusting the valve-gate sequence to optimize the part, it is very easy to trap air at the delayed hot-runner gates, which can be very difficult to vent. The result is a burn that appears to be coming from the hot-runner gate but is in fact a gas trap at the hot-runner nozzle tip. A simple test when dealing with a burn at a hot-runner gate on a sequentially filled part is to take a shot with all the gates opening at the same time to see if the burn goes away. If the burn immediately goes away, then you can be sure it is a venting issue and then focus on adjusting the sequence instead of treating the problem as a burn coming from the hot runner.

TROUBLESHOOTING IN THE PRESS

Whenever a problem is discovered while the tool is in the press, some basic troubleshooting should be done prior to removing the tool. Failure to do so is a major lost opportunity to quickly gather critical information that will aid troubleshooting while the tool is out of the press.

As explained previously, burns in hot-runner molds can be very misleading. Even if you believe you know the root cause of the issue, it is always good practice to do some quick process experiments to see which molding parameters affect the problem. Even a change that makes a problem worse still yields valuable data.

The first step should always be to check the purge temperature. It should never be assumed that the melt is at the temperature of the barrel. Screw speed and backpressure can have a huge impact on the actual melt temperature. Reducing them is often the quickest way to cool down the melt and see if it improves the burning problem.

The melt can also pick up a significant amount of heat from shear as it flows through the hot-runner system. Slow down the filling to see if it has any impact on the problem. Even if an acceptable part cannot be molded at the longer fill time, knowing the impact of fill speed is valuable information that can help lead you to the final solution.

By: Bill Rousseau, Director, Applications and Technical Services from Synventive Molding Solutions

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How 3D Printing Becomes Normal and Ordinary

I thought I'd start this article with a quote from one of my absolute favorite science fiction writers ever (Kurt Vonnegut is a very close second!).

"I've come up with a set of rules that describe our reactions to technologies:

1. Anything that is in the world when you're born is normal and ordinary and is just a natural part of the way the world works.
2. Anything that's invented between when you're fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.
3. Anything invented after you're thirty-five is against the natural order of things."

— Douglas Adams

Lately, it seems the 3D printing industry is following this trend. More and more companies are changing their target audience. They're moving away from selling boxes to consumers and are instead focusing on solutions for education.

MakerBot's Pivot

Back in May 2015, MakerBot announced that it would reduce its emphasis on consumers, and instead focus on the educational and professional markets.

At the time, MakerBot CEO Jonathan Jaglom said that, "MakerBot initially addressed the right market—basically the makers, the tinkerers, the DIYs—but as MakerBot grew so did the audience space, and so then the education came in and the professional came in, and that today is becoming a much wider audience than the consumer."

For what it's worth, Jaglom did note that the consumer market, "is there; we have people that own printers at home. It's not a negligible community, but it's not as big as we initially perceived."

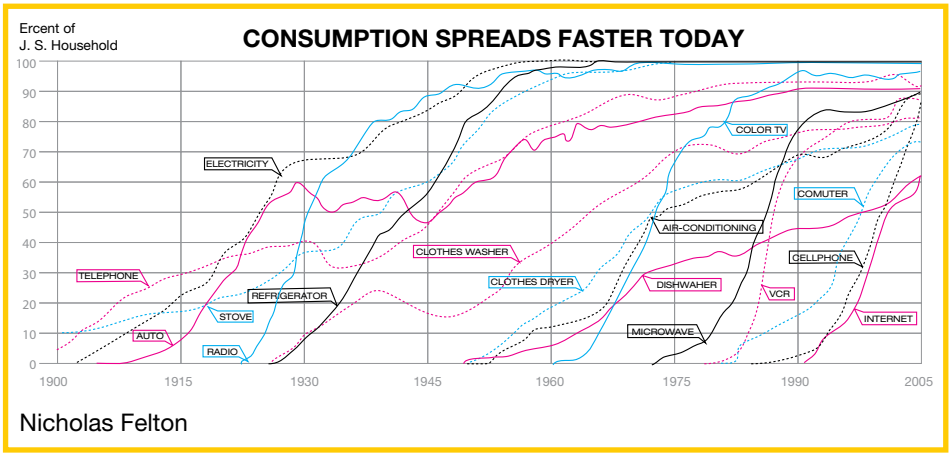
A 3D Printer in Every Home?

Mr. Jaglom might have been a bit optimistic when he added this. "If you ask me, five to seven years from now, I really do believe there will be a printer in every person's home," he said. "And we're gonna work to get to there."

Certainly technology adoption is getting faster. This famous Nicholas Felton graphic, featured in the New York Times, does a great job of illustrating that:

But a 3D printer in every home by 2020? Most of the estimates I've seen show the industry selling may be 5 million printers annually by then. More likely we're decades away from that – if it ever happens.

How then, will the industry scale? I don't think it will happen in the home. People don't want the machine, they want what comes out of it. They don't want a bread maker, they want bread – and I say this with some experience. We had a bread making machine in our house for seven years and it never once made it out of the packaging. It recently took a one-way trip to the island of misfit appliances.



Nicholas Felton

Create a Need, Then Fill It

One of the problems with 3D printing is that there are so few creators. I'm guessing that fewer than one million people on the planet have the necessary computer-aided design (CAD) skills to create usable, 3D printable products. A large majority of them use CAD for things that are completely unrelated to 3D printing.

So, how do we get more people involved? We can start by making it simpler to design in three dimensions. CAD needs to be easier and more intuitive. It reminds me of high school geometry, and for me at least, geometry was neither easy nor intuitive.

Also, to the late great Douglas Adams' point, if you want a technology to seem "normal and ordinary" you've got to wean people on it. Get them interested as early as possible.

From Software to Apps and Beyond

If anyone gets the problem, it's a company like like Dassault Systèmes, the maker of SOLIDWORKS. They know they need to make 3D design easier and they need to reach people at an earlier age. To that end, they've launched Apps for Kids, which breaks CAD up into smaller, less intimidating, more intuitive modules.

"We have done a lot of research studying gaming and social media that children are jacked into," noted Chinloo Lama, a senior user experience design engineer at Dassault Systèmes SOLIDWORKS.

"This idea of learn-as-you-do in the apps, kids are familiar with. There is no longer any help documentation. We are looking at a lot of video and picture-in-picture as a kid will look at YouTube and templates to get ideas. These elements will be injected as user assistance, but not the traditional help menus."

The World is Mobile

As much as it's a problem of how to reach and expose kids to 3D design, it's also a problem of where to reach them. Traditionally CAD has been a desktop application. Children are mobile. In fact over 50% of 8-12-year-old children in the US have their own cell phone. 88% of teenagers have one.

And they're getting access even earlier. A recent study found that by age 2, more than half had scrolled screens, called someone, watched a TV show on the device, played video games or used an app.

There's an App for That

Could CAD software eventually be replaced by an endless number of apps, each designed to help people create very specific 3D printable products?

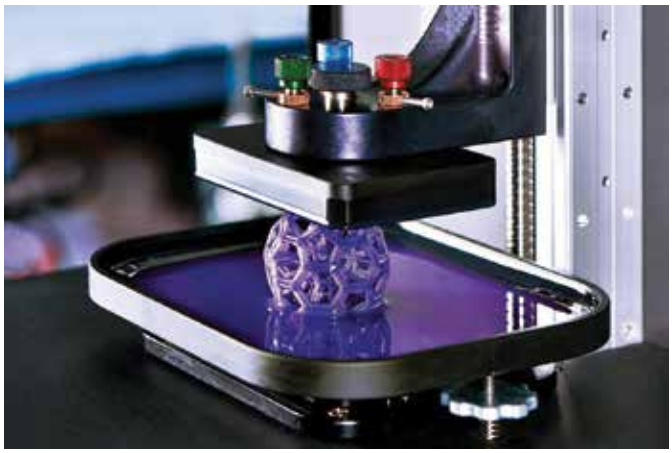
Consider "Let's Create!" It is a popular app that allows you to make custom pottery:

It's designed for mobile, taking advantage of the technology available in modern smartphones to create an experience that is much more user-friendly than any CAD software. It's also highly gamified and has a thriving online community. You can even 3D print your creations via Sculpteo's 3D printing service.

Would it be that hard to imagine a similar app for fishing lures or eyeglasses?

AI Changes The Game

Of course, we could move beyond apps entirely. Artificial intelligence might eliminate the need. In a recent interview,



Google director Aparna Chennapragada said she thinks we'll eventually "…de-silo and unbundle the function of apps." Does that mean apps will go away? Ms. Chennapragada went on to say that, "Google has made some 'early steps' with app indexing, letting you search inside apps." But even now, "it's so difficult for users to jump between these contexts, jump between these apps. And what we're saying is that needs to be far more fluid … [It's] less about shrinking them, or obliterating parts of the app, but about saying: 'There's so many more places where parts of your app can surface'."

It's likely we'll see a lot of ebb and flow with apps over the next few years. While the way we access them might vary, dedicated apps will continue to proliferate, and could have the potential to play a big role in how 3D printed products are created and customized.

The Pool's Getting Crowded

In the future, virtual reality might be so good we won't need a lot of the products we use today. That's then and this is now. When training people to design in 3D, physical versions are indispensable. They give people a way to touch and feel what they're visualizing on screen.

And that's why 3D printer manufacturers are so interested in the educational market. With all of the effort going into training kids to think of 3D design as "normal and ordinary," having a printer nearby is crucial.

Today, there are over 3 billion people globally who have access to the Internet, and most of them connect from a mobile device. That number is growing exponentially. As Google director Chennapragada put it, "5 billion people will be online in five years, and suddenly this actually has the ability to affect the real world … we want to make sure that we're building the blocks right."

That's as true for artificial intelligence as it is for 3D printing. We've got a small window of time before millions (and maybe billions) of people can find, create, and customize 3D printable content. We've got to make sure that we're also "building the blocks right," or maybe more aptly in this case, building the voxels correctly.

In a future article, I'll take a look at some of the other 3D printing equipment manufacturers who are focused on the educational market and discuss how their approaches differ. Some will fail and others will succeed, but collectively, the more they can do to improve access and the user experience, the more likely 3D printing will become the mega industry we all want it to be.

On that note, I'll end with one more from Mr. Adams:

"Most of the time spent wrestling with technologies that don't quite work yet is just not worth the effort for end users, however much fun it is for nerds like us."

John Hauer - Founder and CEO of Get3DSmart, a consulting practice which helps large companies understand and capitalize on opportunities with 3D printing. The original content has been featured on TechCrunch, QZ.com, Techfaster.com, 3DPrint.com and Inside3DP.com, among others.

Academia Corner

Global Institutes of Management and Emerging Technologies (GIMET) Amritsar, Punjab has claimed to have developed a composite material from waste polymer, which will be effective in making helmets, car bumpers and windmill blades stronger. Students and faculty of the Mechanical Engineering Department of the institute achieved the milestone by developing a composite material using waste polymer. "This is perhaps the first innovation of its kind, which is created by waste, including shavings of polymer such as PVC pipes etc," claimed Prof Vijay Bhanot, associate professor, Mechanical Engineering.The new type of composite material was developed by Angel Bajaj, Amrojpreet Singh, Amritpal Singh, Amoldeep Singh and Amritjot Singh, fourth year students of the MET, under the guidance of Prof Vijay Bhanot.Talking about the material created, Prof Vijay said, "Major components of the polymer material are PVC waste, hardener, binder, lubricant and metal sheets for preparation of dyes etc." Explaining about the technicalities of such material in global use, Prof Bhanot said, "Nine samples were designed by crushing PVC wastage into 850, 600, 425 microns and these were mixed with different compositions of hardener and binder. After the solidification of the samples, they were tested for surface roughness, tensile strength, compressive load and impact load. The testing was carried out by CIPET." Results found that the composite material could be used at various levels. It could be used for manufacturing car bumpers and helmets. It was ideal material for interiors, home decorations, domestic, office and outdoor furniture also.

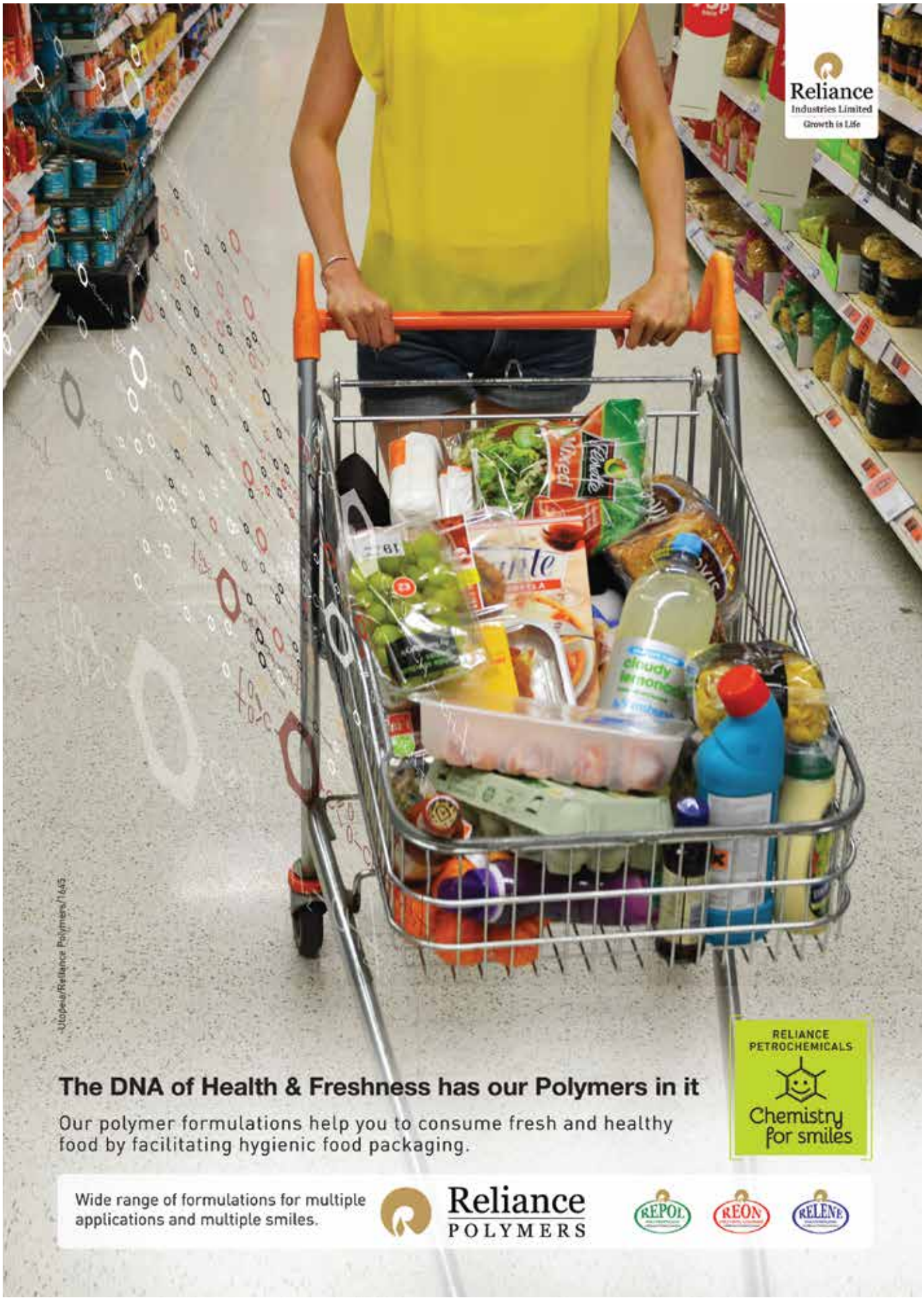
Driven by shale energy production, global oversupply of light naphtha to continue through decade-end

Global production of light naphtha, an essential steam-cracker feedstock for the production of gasoline and numerous chemicals, is increasing and could create a global surplus that exceeds market demand by as much as 14 mln metric tons by 2020. This capacity expansion and surplus of light naphtha is occurring in large, partly due to the rapid expansion of tight oil and shale gas production in North America, and in particular, the US, which will surpass the Middle East to become the world's largest exporter of light naphtha by 2020, according to market review from IHS. The market is currently faced with a global excess in terms of oil production, and secondly, EPB (from natural gas liquids NGLs) displacing some of the naphtha demand away from steam-cracker feeds, which will further add to oversupply of naphtha during the next five years. While current production continues to increase, the growth rate of light naphtha consumption is constrained somewhat by the penetration of ethane, propane and butane (EPB) gases in the steam-cracker feedstock slate. All seven new ethylene plants currently under construction in North America have been designed to utilize ethane feed. Additionally, the availability and low prices of EPB feed has already minimized the use of naphtha as steam-cracker feedstock in North America.

According to the review, global production of light naphtha was 367 MMT in 2014, and consumption was 363 MMT in 2014. Global consumption of light naphtha is expected to continue to increase at an annual rate of about 2% during the next 10 years, the report says, while the increase in production is expected to slowdown from just under 2.5% in the next five years, to close to 1.5% during the following five years as the market readjusts to bring production closer in line with demand.

"The rapid expansion of shale energy production, particularly in North America, has contributed to global oversupply of light naphtha, which is derived from crude oil," said Nick Rados, director, chemical feedstocks and energy at IHS, and co-author of the report.

Though light naphtha production is widely dispersed, three regions - North America (20%), the Middle East (17%) and Northeast Asia (19%) -- currently account for nearly 60% of total global production. Most light naphtha trade originates from the Middle East, Russia and North Africa and is sent to East Asia, primarily for use as steam cracker feedstock. With the onslaught of U.S. production, though, this trade balance is shifting. Light naphtha demand will increase driven primarily by steam cracker feedstock demand everywhere except in North America. Most of the present steam cracking demand is in Northeast Asia and Europe. However, going forward, most of the demand growth will be in Southeast Asia, India and the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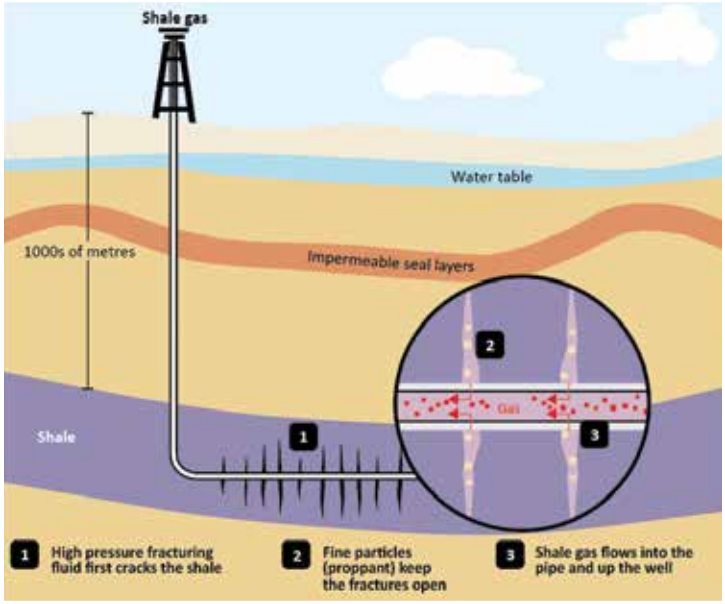
Middle East. Said Rados, “It is unlikely that the North American market can use all of the light naphtha to be produced in the U.S., so by 2020, IHS expects the U.S. to emerge as the largest exporting country in the world for light naphtha, with almost half of these exports to Canada. The increase in U.S. production will be imported by other regions and used to meet ‘price-sensitive’ demand for steam-cracker feedstock, heavy crude diluent, gasoline production and blending into other products.”

The U.S. is not alone, however, in needing to secure a market for its increasing exports of light naphtha. Tom Manning, senior director, natural gas liquids at IHS, and co-author of the report says, “The Middle East has added an appreciable amount of new naphtha refining capacity, and utilization of these assets may be lower until market demand absorbs new naphtha refining capacity.” The global refining industry is quite large - approximately 137 MMT of light naphtha is produced by crude distillation in refineries. Additional 60 MMT is produced in the world’s refinery hydrocrackers, cokers and hydro-treaters. About 58 MMT of light naphtha (natural gasoline) is recovered in gas processing plants and another 35 MMT is derived from condensate splitters. Additionally, 77 MMT of lower-quality heavy naphtha is separated with light naphtha or is blended into full-range paraffinic-grade naphtha. Condensate splitting has never been a very large segment of the business, but increased availability of segregated condensate is encouraging U.S. refining as well as North and Southeast Asia petrochemical companies, to build condensate splitters.



The abundant supply of shale gas in North America has reenergized the North American petrochemical industry, unleashing a wave of capital investment in new facilities. Since many shale fields contain, in addition to oil and natural gas, large quantities of natural gas liquids (NGLs) such as ethane, propane and butane, major new supplies are entering the market at low costs. This low-cost feedstock has already shifted profit pools from gas producers and processors to petrochemical manufacturers, as per bain.com.

Both naphtha and LPG are produced by refining crude. A barrel of crude typically has a 3% LPG yield while for naphtha it is more than 10%. LPG is also obtained in the process of extracting natural gas. Asian petrochemicals firms, traditionally using naphtha as a raw material, are now switching to LPG. They are building tanks and retooling plants to store and process liquefied petroleum gas imported from the United States, counting on a flood of supply from the shale boom to replace costlier naphtha as a raw material, as per Reuters. Petrochemicals firms in South Korea, Japan, Taiwan and Thailand have increased their use of LPG since June as the gas has cost at least US$50/ton less than naphtha. Samsung Total Petrochemical, LG Chem and Royal Vopak are among a number of companies in Asia expanding import terminals or retrofitting plants over the next one to two years as they buy more LPG. A looming rise in tanker supply from next year will also help cut US-Asia freight costs. By 2019, the nation’s surplus of the gas will double to 550,000 barrels per day (bpd) from 270,000 bpd in 2014, said US-based consultancy firm ESAI.

A cutback in naphtha use will hit key regional suppliers of the fuel such as India’s Oil & Natural Gas Corp (ONGC) and Kuwait Petroleum, who are already being forced to cut the premiums they charge on naphtha sales. Rising supplies of LPG have widened the price gap between LPG and naphtha. Asia now accounts for more than a quarter of all U.S. LPG exports and that is set to rise steadily this decade. Exports to Asia could rise to 230,000 bpd by 2019 from 70,000-90,000 bpd this year, said Vivek Mathur, senior analyst at ESAI.

Supplies from the Middle East will also grow but exports may not rise as much as US shipments. US LPG is available now for loading below US$600/ton compared to the US$760-780 for the gas from the Middle East. Even with current freight rates from America to the Far East higher compared to rates from Middle East to Asia, US LPG works out a cheaper option for Asian users. The design of petrochemical plants in Asia, though, constrains how much LPG can replace naphtha. Typically, up to 15% of naphtha can be replaced. Even within that limit, plants in Asia have room to raise LPG use, which may mean more imports of the gas. The situation will worsen for them when new tankers are ready and the Panama canal expansion is completed by end-2015. Some 36 new LPG tankers are scheduled for delivery in 2015 and another 38 in 2016 vs 5 this year, said a Southeast Asia-based LPG trader, potentially helping lower freight rates.

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According to IHS, growing demand for chemicals, plastics and durable goods in Latin America is elevating the region as a strategic market for North American petrochemical producers. It is also reshaping the Latin American petrochemical industry, including investments and projects in Brazil, Mexico, and other countries in the region. Latin American GDP performance is expected to slightly outpace global GDP growth by 2018, with Brazil accounting for 40% of the region's total GDP growth. To meet increased regional consumer demand, competitively priced finished products will be produced by sourcing resins from low cost sites in North America and converting them into plastics and other high value chemicals. Latin America represents an attractive export option, due to geography, economics, demand, and attractive netback for North American producers.

Before the North American shale energy revolution, numerous petrochemical projects were planned in Latin America that were naphtha based, but all those plans are now under reevaluation. Additionally, for the industry to grow in the region, capital investments in infrastructure must be made. Limited access to hard currency makes it challenging for some countries in Latin America to remain competitive in a global market. Unless additional capacity is added in the region to meet growing demand of end use products, countries will have to rely even more on imports, which are risky due to exchange rate fluctuations. The market is changing, so companies are now adapting to change.

As per author Thierry Bros, this could indirectly impact Russia's position as leading supplier to Europe. Russia's Gazprom, until recently, supplied 30-35% of Europe's imported natural gas. US progress towards energy autonomy indirectly changes the picture, through its knock-on effect on Qatar. Until recently, USA was a large importer of liquefied natural gas (LNG) from world number one exporter Qatar. With shale gas development, USA no longer requires these imports, a significant quantity of which, has found its way into markets in Asia and Europe. This in turn is reducing dependence of the EU on Russian gas. This shift is encouraging Russia to move from a pipelines policy to the more flexible LNG. Interestingly, though the European Union aims to diversify away from Russian natural gas supplies, Reuters research indicates the EU's biggest provider until 2023 could easily still be Russia, as it boosts exports while EU and Norwegian output declines. Of the EU's current annual demand for 485 billion cubic metres (bcm) of gas, Russia supplies some 150 bcm. Demand could rise to 585 bcm by 2023 with the Russians supplying as much as 175 bcm, according to Reuters calculations based on data from governments and energy companies, research firms and consultancies. This means that the amount of gas from Russia is not only set to rise, but Russia's share of Europe's gas market will remain stable around 30%. Gazprom is not expected to face problems in increasing gas supplies as its reserve base is big. Russia, once Europe's dominant gas supplier, has been losing its market share to Norway because the Scandinavian country has been more flexible with its pricing for sales volumes. Last year Norway increased its pipeline gas exports to Europe by 14%, to 100 billion cm, while. Russia's fell by 3% to just over 200 billion cm.

Russia will not focus on developing shale gas within the next decade because its vast conventional reserves are much cheaper to produce, as per Gazprom. Russia's conventional gas resources rendered developing shale gas uneconomical. Russia's shale gas reserves are unknown but the country holds more than 20% of the world's conventional gas reserves. Once they start fracking, though, countries such as China, Argentina and Russia could experience new oil and gas booms. China has the largest shale gas reserves, estimated at 1,115 trillion cubic feet, followed by Argentina at 802 trillion cubic feet. In shale oil, Russia tops the list with about 75 billion barrels, according to a report by the U.S. Energy Information Administration. Australia, Poland and Algeria all have big potential. Argentina may be the first to capitalize on its shale resources, according to research by BCG, the Boston Consulting Group.

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High Speed Telecom Micro-duct Extrusion - Telecom Infrastructure Made in India

Micro ducts are small ducts for the installation of small micro duct fiber optic cables. Size ranges typically from 5 mm to 16 mm and are installed as bundles in larger ducts. Micro ducts are typically small-diameter, flexible, or semi-flexible ducts designed to provide clean, continuous, low-friction paths for placing optical cables that have relatively low pulling tension limits.

Micro duct products are expected to:

- Be compatible with existing construction designs and building configurations for both riser- and plenum-rated applications, including cable blowing apparatus.
- Allow cables to be safely deployed through pull lines or strings using less than 50 lbs. of force, and through cable blowing techniques at typical deployment speeds of 100-200 feet per minute.

Types of ducts

Basic types of duct are smooth wall, corrugated, and ribbed. The selection of a particular duct design is dependent on those characteristics that are important to the end-user. The need for a specific characteristic or combination of characteristics such as pulling strength, flexibility, or the lowest coefficient of friction will dictate the type of duct required.

Duct options

Ducts are manufactured in a variety of options or features. One such enhancement is pre-lubrication. Pre-lubricated ducts may be either permanently impregnated with anti-friction compounds or coated with liquid lubricant during manufacture. This may or may not eliminate the need for supplementary lubrication when pulling cable into the duct. Before using a supplementary lubricant with a pre-lubricated duct, the user should check with the manufacturer to determine if the added lubricant is compatible with the pre-lubricated surface of the duct.

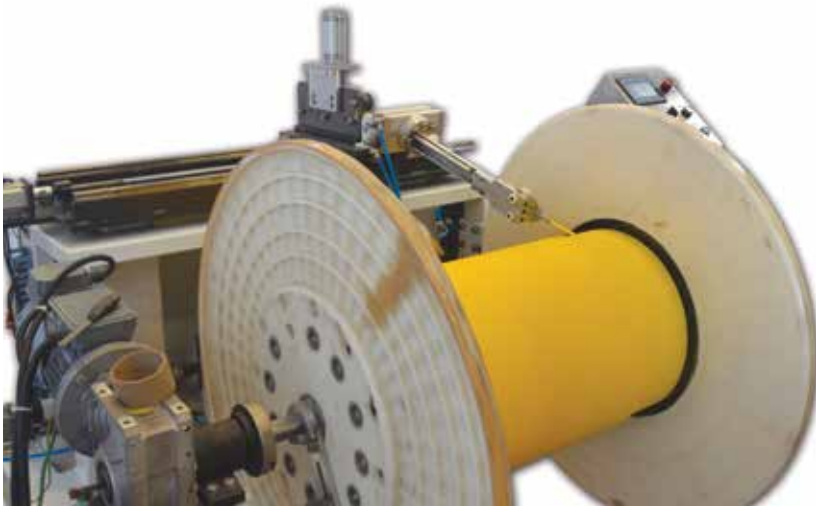
Placement of cable

Cable is typically placed into the duct in one of three ways:

- It may be pre-installed by the duct manufacturer during the extrusion process.
- It may be pulled into the duct using a mechanically assisted or hand-drawn pull line.
- It may be blown into the duct using a high air volume cable blowing apparatus.

Micro duct cabling

With microduct cabling, bundles of small microducts are installed in larger protective ducts. Bundles of microducts are factory pre-installed. The microducts can be branched very easily in the network. At any place of choice, a window cut is made in the protective duct and the microduct of choice is cut. This microduct is then connected, using a simple



push/pull connector, to a microduct that branches to the desired location. After all connections are made, an individual microduct path has been created in the network. A microduct cable can then be jetted through the microduct, without the need to make a splice.

Significance & benefits of High Speed Micro-duct Extrusion Line

With Government announcing Digital India program to empower and bring together India's social-commercial ecosystem, need for better communication infrastructure has seen a boost like never before. This machine contributes to the telecom infrastructure development.

Producing Micro-duct at high line speed is a challenge in terms of maintaining good finish, wall thickness & ovality. Ovality is the most critical parameter which needs to be controlled for consequent operations of bunching & sheathing. This has been made possible by special design of vacuum tank with closed loop control of vacuum and capstun belt haul-off.

With its unique micro-duct extrusion process that adheres to global standards, machine is capable of delivering consistent output of micro-duct without any change in design, configuration & characteristics of micro-duct.

Benefits to the processors

- High output rate to manufacture any type of micro-duct ranging from 5 mm to 16 mm OD.
- Ovality of the duct: 3 – 4 % of OD
- Winding capacity: up to 4 km - helps in longer production run while making bundled sheathing.
- Import substitute and export grade with much lower price than foreign manufacturers contributes to India's foreign exchange saving.
- Unique design with less space requirement & lower production cost.

This extrusion line is available at a high speed of 50 MPM to manufacture Micro duct from 5 mm OD to 16 mm OD with Smooth as well as Ribbed ID. KET also offers Micro duct bundle sheathing Line from 2 ways up to 21 ways.

With over 5 decades of experience in extrusion technology, Kabra Extrusiontechnik (KET) continues to be a leader in manufacturing & export of plastic extrusion machinery. In recognition of KET's efforts in Technology Innovation, company has been awarded the prestigious National Award under the Industry Category of "Innovation of Polymer Processing Machinery & Equipment" for its product – High Speed Telecom Micro-duct Extrusion Line. Award was presented by Shri Ananth Kumar (Hon'ble Minister for Chemicals & Fertilizers, Government of India) in the presence of Shri Hansraj Ahir (Hon'ble Minister of State for Chemicals & Fertilizers, Government of India) during a grand function organized on 20th January, 2016 at FICCI House, Delhi.

PP Non-woven Crop Cover for frost protection – a success story

Kamlesh (name changed) is a young progressive farmer having sizable land for cultivation near Jaipur. As a progressive farmer, he is innovative and constantly thriving to make a difference on his farming practices. He has been adopting modern techniques like drip irrigation and mulch films made out of Plastics which are yielding good results. However he could not make use of his farm effectively during winter months (November – Jan) due to extreme climate. Fearing the frost bite, which make the leaves completely burnt leading to total crop failure, his farm is either remained uncultivated or getting utilized for less remunerative crops like mustard which does not get affected by frost. He was in search of a cover which can protect the crop and at the same time affordable.

Damaged leaves due to frost

When crops got damaged partially in 2011 due to frost, Kamlesh found PP non woven fabric (UV stabilized) as a solution for this issue. This was laid on the subsequent year as crop protection cover.

The frost struck on a night in January 2012, where the crop covered with PP non-woven was got protected totally as shown in the image. The importance of the fabric was witnessed by state Government officials and quickly acted upon by bringing the product under the subsidy scheme. A tender was called for empanelment of suppliers of PP non -woven crop covers, which was a first in the country.

Covered Crop
No frost effect

Effect of Frost

Realizing the efficacy of the nonwoven cover, subsequent year Mr. Kamlesh had used the same for many cash crops like Tinda (Summer squash), chilly, watermelon and cucumber to the extent of 30 acres. Many traders jumped into this supply chain and over I lakh sq. mtr. area was covered in the year 2012-13.

The farmers reported that due to protective cover they could harvest the vegetables as otherwise their return would have been zero.

As per the latest estimate, more than lakh sq. mtr. of fabric has been covered now and is constantly growing. Supply chain is in place across the country for effective utilization

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says ***Rajeev Chitalia, NEC Chairman*** *- Plastindia 2018.*

As passionate owners of plastics businesses, all of us can all proudly proclaim to offer the best solution where durability and strength are key. Today, plastic goods dominate every possible avenue of a consumer's life right from cradle to grave. From using a toothbrush in the morning to donning spectacles to travelling in cars to hurriedly typing mails on a computing device – plastics makes its presence felt everywhere. In fact, when a child is born the first tube inserted to flush out fluids is made of plastic. Thus, even before the infant meets the parents, introduction to plastic has taken place.Today, plastics has replaced glass, wood and metal in almost every sphere and offers convenience, sanitized usage and long lasting sturdiness. Needless to say that reduction in the cutting of trees and usage of glass and metals has also contributed to the environment.

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- Thought-leadership
- Government subsidy
- Return on Investment

India is also one among the highest percentage of plastics recycling markets in the world. Trade bodies like Plastindia Foundation are making collaborated efforts towards educating the common man towards waste management which is the root cause of environmental hazards due to plastics.

India's plastic consumption drives global plastic markets and is now driven by fast growing sectors like Packaging, Consumer goods and appliances, Agriculture, IT and Telecom, Infrastructure, Healthcare, Automobiles and Transportation, Energy and Power. At present, the Indian Plastics industry operates more than 30,000 processing units employing about 1.2 million people.

India is projected to be the fastest-growing market in the Asia-Pacific region. With the Indian economy booming, the demand for plastics across sectors is steadily increasing and opening up new opportunities for business owners. By 2020, plastics consumption in India is set to increase from the current 12 million metric ton per annum (MMTA) to 20 MMTA; and will deploy 180,000 machines by 2020 as compared to the current 113000. Exports of plastics finished goods too is set to increase from current US$7.5 billion to US$12 billion, thus increasing direct and indirect employment from 1.2 million to 2 million.

This background presents an extremely fertile scenario for lucrative business opportunities for each one of us in the plastics and allied business. Our industry is extremely dynamic and each day our counter parts are crossing new frontiers in technology and expertise. However, all of us are always busy in daily operations and expansion that it becomes difficult to reach out and take an eagle's eye view of the industry. Hence, Exhibitions are a one-stop destination where one can witness new machine demos, participate in product launches, and network with peers. An exhibition offers an excellent opportunity to witness the best technology and meet the finest minds in the business.

Since the past 26 years, PLASTINDIA has been offering a sustained platform for networking and business through India's biggest exhibition for plastics. The triennial event catapults businesses by attracting more than 150000 business visitors from 40 countries over the 6-day period. The exhibition has turned out to be a technology-driven show where participants are assured of business simply due to the large number of footfalls to their stalls. Today Plastindia is ranked as the 3rd largest exhibition in the world in terms of participants and volume of business generated. Thus bringing India to the world and the world to India.

PLASTINDIA has come a long way since its first exhibition in 1990. It began as an effort to showcase the capabilities of the growing Indian plastics industry to an international audience, but it quickly developed into a meeting point for the global

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PLASTINDIA 2018

UNFOLDING BILLION OPPORTUNITIES

10th International Plastics Exhibition, Conference & Convention

Feb. 7-12, 2018, Gandhinagar - Ahmedabad, Gujarat.

Plastindia 2018 is gearing up to be one of biggest plastics expos in the Asia-pacific region in 2018. It will be a game changer for many. For some it will be a trigger to foster new growth opportunities and upgrade technologically. New products marked with innovation will be the limelight. Time to get ready for Plastindia 2018. There will be nothing quite like it.

Highlights of Plastindia 2018

• Total Gross Area - 1,25,000 Sq. Mtrs. • Targeted number of Exhibitors - 2000 • Participation from around 45 Countries • Participation from nearly 600 Overseas Exhibitors • Concurrent Events - Proplast, International Conference, Plasticon Awards, Plastwin, B2B

Supported by

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PLASTINDIA FOUNDATION

401, Landmark 'B', Suren Road, Off Andheri Kurla Road, Andheri (E), Mumbai 400 093, INDIA. • Tel.: +91-22-26832911 / 14 • Fax: +91-22-26845861 • E-mail: plastindia@vsnl.com • Website: **www.plastindia.org**

VENTURES

industry. From a less than 20,000 square metre area and 486 exhibitors from 15 countries the exhibition now stands at 125000 square metre area with more than 1600 exhibitors from across 40 nations. The number of visitors have increased to a whopping 150000+ from several countries apart from India. The new venue at Gandhinagar not only offers a most modern and better exhibition space, but also offers better security and infrastructure options.

The 10th edition of Plastindia to be held from 7th to 12th February 2018 at Gandhinagar, Gujarat, is all set to achieve greater heights by introducing theme based pavilions like Composites, Moulds & Dies, Automobile, 3D Printing and Software, etc. It will incorporate B2B & visitor delegations not only from the plastic sector but also from end user industries like Automobile, Packaging, Electrical and Electronics, etc,.

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HAD series
Hot Air Dryer
13 kg to 400 kg

HAD (L) series
Hot Air Dryer
600 kg to 2500 kg
Engineered Above 3500 kg

CONVEYING

BVL (F) series
Auto Loader
150 kg/hr to 1000 kg/hr
Engineered Above 1000 kg/hr

BVL (T) series
Auto Loader Twin
100 kg/hr to 500 kg/hr
Engineered Above 500 kg/hr

BVL Tetra series
Auto Loader Tetra
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PAHWA GROUP
Innovation is life

Investment Opportunities

Double Wall Corrugated Polyethylene Pipes (DWC PE Pipes) for Sanitation - Towards Swaccha Bharat

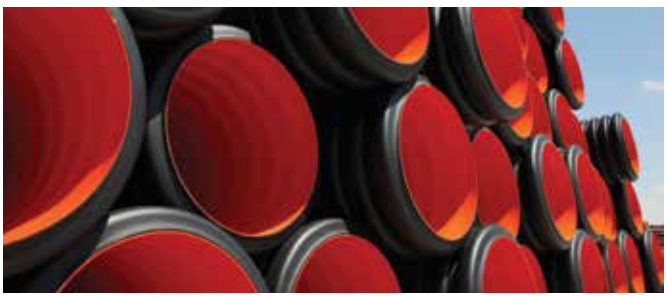
India ranks low in terms of sanitation coverage. It is estimated that 69% of Indians still lack access to improved sanitation facilities. Open defecation is still an issue. Govt. of India is focusing on development of sanitation network both in rural and urban areas. The projects like Swachha Bharat Abhiyaan are rolling out for creating awareness as well as infrastructure for both sanitation and waste management. Municipal sewage & wastewater conveyance is generally carried out through traditional piping systems made from cement concrete. Major issues associated with these pipelines include brittle nature, corrosion and more no. of joints due to shorter lengths. These traditional pipelines have a very high failure rate due to leaks and breaks caused by the above reasons. This not only results in pollution of ground water but also increases the possibilities of infiltration of wastewater in potable water. This is one of the serious causes of waterborne diseases.

DWC PE pipes have number of technical advantages over these traditional piping systems and on 'life cycle cost' concept are much superior. DWC PE pipes are manufactured in a two layer structure with plain inner wall and corrugated outer wall. This structure provides two major advantages viz. lower cost due to hollow corrugations and very good ring stiffness required for the non-pressure applications.

This corrugated structure makes these pipes cost competitive to concrete and stoneware pipes with the advantages corrosion resistance, longer lengths, easy transportation and installations, better flow properties due to smooth inner surface etc.

Product Type:	Double wall CorrugatedPE Pipe
Present consumption:	~ 15 Kilo Tons(KT)
Total Potential:	~ 2000 KT
Est. Realistic Potential:	~1200 KT
Growth rate	50%
Growth Drivers:	Poor sanitation network across the country, Awareness about improved sanitation, Focus by Govt. on development of network, technology available in India through Swachha Bharat scheme etc.
Status on Manufacturing:	Acceptance rate of the product is very high. Currently about 2 processors are manufacturing the product and 5 more are in the pipe line.
Machinery:	Extrusion system with corrugators is required. Corrugator technologies are available from leading technology providers globally available.

Project Summary		
	Unit	Value
Capacity (Chinese Machine) per annum	Tonnes	6000
Capex	Rs. Crs.	5
Est. Cost of Project (Capex + Working Capital)	Rs. Crs.	11
EBDITA (10 Year Average)	Rs. Crs.	30
Capex/EBDITA		0.36
Simple Payback	Years	1
NPV	Rs. Crs	87
IRR	%	200



Note: Figures and values are indicative only. Detailed project report can be made available on request.
E mail – Abhijit.patil@ril.com& v.kannan@ril.com

Amish Shah, Dr. Shreekant Diwan, Dr. Abhijit Patil
Reliance Industries Limited, Mumbai

Organization of Plastic Processors of India

KISAAN RAJA

PLASTINDIA FOUNDATION

A unique demonstration and Exhibition 2016

By

PLASTINDIA PLASTICULTURE

In Aurangabad District from 15th to 19th October 2016

KISAAN RAJA
A Unique Exhibition and Demonstration

DISTRICT AURANGABAD

EXHIBITIONS

Murshidabadwadi	Saturday, 15th October 2016
Undangaon	Monday, 17th October 2016
Chapaner	Wednesday 19th October 2016

DEMO PLOTS

Village	Taluka
Ladsavangi	Aurangabad
Murshidabadwadi	Phulambri
Undangaon	Sillod
Jarandi	Soegaon
Chapaner	Kannad
Katshivri	Khultabad
Shivrai	Vaijapur
Lasur Station	Gangapur
Thergaon	Paithan

Kisaan Raja 2016 is a unique business opportunity to display your Plastic Products such as Drip & Sprinkler Irrigation Systems, Pond Liners, Mulch Films, Low Tunnel Films, Shade nets, PVC and PE pipes, Plastic Crates, Nursery Bags, Leno bags etc. for Agriculture and all Plastic Products for Rural Market. The exhibition will combine a live demonstration of drip irrigation along with modern agriculture techniques and products.

Book your stall now.

Mr. Vikas Valsangkar / Mr.Satish Raikar
Call: 022-26832911 (4 lines)
Mail: plasticulture@plastindia.org

Plastindia Foundation, 401, Landmark 'B' Suren Road, Off Andheri Kurla Road, Andheri (E), Mumbai 400093, India. Website: www.plastindia.org

Kisaan Raja 2016

Aurangabad, 15-19 October

Plastindia Foundation in partnership with OPPI would escalate Plasticulture activities to all India level by holding Exhibition cum Demonstration named as Kisaan Raja. As step forward a team is getting formed which would eventually spread all over India. This team would then conduct Kisaan Raja Exhibition cum Demonstration every year at multiple locations all over India.

Plastindia Plasticulture Committee has been functioning since 2010. Unique Exhibition cum Demonstration named as Kisaan Raja was held in 2011 in 8 talukas/blocks of Jalna District in Maharashtra.

One of the slogans adopted by us is "Drip at Your Doorsteps". As most of the small and marginal farmers though know drip irrigation does not adopt this modern technology due to lack of awareness on the benefits and money to buy the drip system, Kisaan Raja addresses both situations. Exhibition & Demo is conducted on Farmer's plot and the drip system for one acre is provided free by drip to the company which participates in the program. This company provides agronomical services, maintenance and trains the farmer to operate and maintain the drip system. The output is monitored by Plastindia Plasticulture with help from NGO involved in the program.

Plastindia Plasticulture then further co-ordinates this activity with support from NABARD and NGO to implement Umbrella Program of Natural Resource Management ("UPNRM"). Most of the villages do not have any bank in the village as most banks are in urban areas that too at district place. Even if the banks are there at taluka places they do not have adequate staff to support the NABARD schemes. Farmers then have to approach local money lenders. This proves uneconomical to the farmers. Plastindia Plasticulture addresses this situation by providing loan to farmers through NGO. UPNRM program has been devised by NABARD/GOI to address this situation.

Marathwada area in Maharashtra State has perennial water shortage which results in drought. Many farmers have committed suicides in this region. Some farmers use drip irrigation but still lot of small and marginal farmers are not able to use due to lack of finance.

Therefore, the next Kisaan Raja Exhibition and Demonstration is planned at Aurangabad from 15th October to 19th October 2016.

Kisaan Raja 2016 exhibition would be held at following three villages:

Village & Taluka	Day	Date	Event
Murshidabadwadi in Phulambri Taluka	Saturday	15th October 2016	Opening Ceremony of Exhibition & Demo Plot
Undangao in Sillod Taluka	Monday	17th October 2016	Exhibition & Demo Plot
Chapaner in Kannad Taluka	Wednesday	19th October 2016	Exhibition & Demo Plot

There would be formal inauguration function at Murshidabadwadi during morning hours which is very close from Aurangabad city and airport. Other two villages are 75 km from Aurangabad.

About Aurangabad

Aurangabad district is spread over an area of 10.08 lakh ha. Out of which area under cultivation is 8.52 Lakh Ha. The total population of the district is 40.83 lakh, out of which, 84.2 % population is dependent on agriculture and allied sector. Agriculture plays an important role in the district economy. The total number of farmers in the district is 9.16 lakhs, of which, 47 % and 31 % are marginal farmers and small farmers, respectively. The average land holding is 1.46 Ha.

Agriculture in the Aurangabad district is diversified, wide range of crops are grown in the district. Major food grains are Jowar, pearl millet, wheat & gram, among oilseeds Soybean is major crops while Cotton is major cash crops.

The average rainfall is 675.46mm. During the year 2014-15 district received 408.75mm rainfall.

Small and marginal farmers are 4.40 lakh (83%) and land owned by them is 3.90 lakh ha. (56.38%). These small & marginal farmers are economically non viable farmers and are not able to make necessary investment and adopt modern technologies hence there is limitation for increase in productivity.

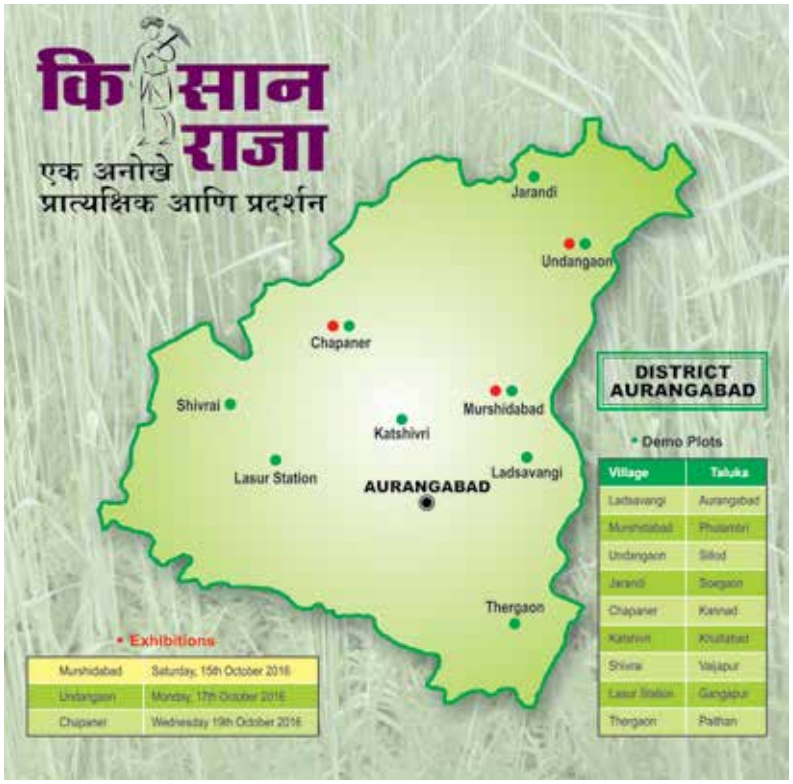
In 2011, Aurangabad had population of 3,701,282 of which male and female were 1,924,469 and 1,776,813 respectively. Aurangabad District population constituted 3.29 percent of total Maharashtra population. Average literacy rate is 79% with male literacy is 87% and female literacy is 70%.

Drip irrigation has penetrated in some pockets of the district but still most of the small and marginal farmers do not use drip in their farms due to lack of awareness of benefits and money to buy. There is huge potential for drip manufacturers to sell drip system. Our past experience of Jalna has been good as there was good yield of cotton from rain fed 3 to 4 quintal to average 15 to 20 quintal in the season which brought smiles and most farmers paid the loan instalments to NGO despite drought. Farmers are now aware of the work done by Plastindia Plasticulture and are coming forward to participate in UPNRM scheme as there are no nationalised banks in their villages. Aurangabad district has 9 lakh farmers with average 4 acres of land which is huge business for drip, shade net, pond lining and mulch film manufacturers.

Increased prosperity in the region due to high yield from the farm will liberate farmers from poverty and farmers will have buying capacity to buy products made from commodity polymers. Hence plastic products for rural population should also be displayed during the exhibition apart from plastic products for agriculture.

Kisaan Raja Demo Plots will be at nine taluka places in Aurangabad districts as follows:

Sr. No.	Name OF Village	Name of Taluka	Km Dist From Aurangabad	Village Population	No. Of Villages under 15km radius of Exhibition Demo plot	Name of Supporting NGO*
1	Ladsawangi	Aurangabad	50	5000	10	SPMESM, Aurangabad
2	Murshidabadwadi	Phulambri	25	600	6	SPMESM, Aurangabad
3	Undangaon	Sillod	75	12000	8	SVSPBM, Undangaon
4	Jarandi	Soegaon	120	5000	6	SVSPBM, Undangaon
5	Chapaner	Kannad	75	5000	12	S.B.K. Foundation
6	Katshivri	Khultabad	35	3000	5	M.J.P. Pratishtan
7	Shivrai	Vaijapur	60	1500	10	M.J.P. Pratishtan
8	LasurStn	Gangapur	40	15000	10	M.J.P. Pratishtan
9	Thergaon	Paithan	65	1500	10	M.J.P. Pratishtan



* Name OF NGO's

1. Savitribai Phule Mahila Ekatma Samaj Mandal (SPMESM)
2. Swami Vivekanand Samaj Prabhodhan Bahuuddeshiya Mandal (SVSPBM)
3. Shri Bapusaheb Kadam Foundation (S.B.K. Foundation)
4. Mahatma Jyotiba Phule Prathishthan (M.J.P. Pratishthan)

Exhibition 2016

Kisaan Raja is a mobile exhibition. The first place of exhibition is Murshidabadwadi in Phulambri taluka where the exhibition will be held on 15th October 2016. There would be no activity on 16th October as the exhibition material will move from Murshidabadwadi to Undangao in Sillod Taluka. Exhibition would be held at Udangaon on 17th October 2016. There would be no activity on 18th October as the exhibition material will move from Udangaon to Chapaner in Kannad Taluka. The last day of the exhibition would be 19th October 2016 at Chapaner. Plastindia Plasticulture would support to exhibitors to move their exhibits from one place to another. There would be only 50 stalls at each of three villages.

Farmers from nearby villages would be brought to exhibition ground and the transportation would be arranged by Plastindia Plasticulture with support from NGOs involved in program. Publicity campaign would be run by Plastindia Plasticulture with the help of Kisan Mandals, NGO involved in Agriculture sectors, opinion makers, farmer clubs of NABARD, local press so that maximum number of farmers visit the exhibition.

Visit would be also arranged to demo plots in each taluka from place of the exhibition. These visits would continue over a period of time based on the interest shown by the farmers. These visits would be also supported by Plastindia Plasticulture.

Demo Plots

There would be nine demo plots as mentioned above. These plots would be available to companies from May 2016 to install drip irrigation system, shade nets and mulch film producers before monsoon sets in. There would be regular visits by farmers of nearby villages and transportation would be arranged by Plastindia Plasticulture.

At the time of exhibition in October all demo plots would have crop standing in the fields which can be witnessed by visitors.

Appeal

Drip & Sprinkler manufacturers, agriculture film manufacturers, shade net, lino bags, crate manufacturers and household plastic product manufacturers, are requested to participate in Kisaan Raja 2016. We also request donors support us for the noble cause.

Kisaan Raja 2011 at Jalna

Opening Ceremony at Varudi, Jalna

Shri Ashok Goel, President Plastindia Foundation addressing the Opening Ceremony

Section of Audience

Chief Guest Shri Vilas Thakur, Collector of Jalna District, visiting the exhibition

Product Display by Drip Manufacturer

Visit of Chief Guest to Demo Plot with drip and Mulch Film, crop chilies

First harvest of Chilies.

Ginger Crop on Drip

Cotton Crop on Drip

Total Drip Deployment in Jalna district after the exhibition from 2012 to 2016 was good inspite of drought. Total of 23,735 farmers from 8 taluka /blocks bought drip system for 22479 hectors.

Dr Yatish B Vasudeo, Chairman Plasticulture committee – Plastindia Foundation, Mumbai

Plastindia International University - on Move

The Plastindia International University(PIU), an initiative of the Plastindia Foundation has started to gain momentum after a lull of almost three years.

The revived PIU project at Vapi Gujarat, is taking a small but positive step towards launching operations very soon.

The members of Plastindia International University Committee have worked out a detailed Project report in consultation with Professional Agency – Oakbrook International. After the initial approval of the project report by the Committee members ,the same was presented in Managing Committee meeting on 25th January 2016 and it was approved unanimously.

Myself & Mr Achal Thakkar Co-Chairman PIU Committee visited Gandhinagar to meet the high ranking Officials and Ministers of Government of Gujarat. We are happy to inform that the university project was supported by all concerned in the education department on basis of Letter of Intent.

I am happy to share that the Priorities which my team had set forth have seen near completion as follows:

1) The LOI offered by Government of Gujarat (GoG) was to be converted to bill. This has been successfully achieved on 31st March 2016, by the Gujarat Assembly passing the bill unanimously. Plastindia University is now an entity by Act.
2) The PIU was aiming a tie-up with University of Massachusetts at Lowell (UMass- Lowell) from the US for offering Plastic Enginerring course curricula and other engineering streams offering Graduate, Post graduate and Doctoral degree. A Six member Plastindia University team from India had very positive meeting with the dignitaries of UML and we are expecting their response by April End – Mid May..PIU Team included Mr K K Seksaria, Mr Raju Desai, Mr Arivind Mehta, Mr Kamal Nanavaty, Mr Achal Thakkar and Mr Palak Sheth,
3) The third priority was to have the survery report of the land by our Archietect (HCP Designs) which is done.

The Gujarat government has offered us full support of its department and office. The Gujarat Chief Minister Honorable Ms. Anandiben Patel is personally apprised of the project and she has expressed her happiness for the same. The government of Gujarat is also fast-tracking the university.

Our land at Dungra, Vapi was surveyed again and designing plans are under-way by well known Architect M/s HCP Design, Planning & Management Pvt Ltd, Ahmedabad, who has also designed the Pandit Dindayal Petroleum University (PDPU) at Gandhinagar.

We have also started sending fortnightly E- Newsletter giving PIU updates. Excellent International level brochures are already prepared and the University is also given a LOGO to create a recall value.

For promoting the University project and to create awareness of the upcoming University, we have started taking part in various exhibitions along with Plastindia Foundation Booth. Recent Exhibitions where we have participated with a university booth are Plexpo 2016 & Polyindia 2016. We were very successful in creating the necessary publicity of the project. Henceforth, PIU will be displayed prominantly in all international participation of Plastindia Foundation in their booth.

Lastly, the constructions plans are at the planning level and will start off once our major aim of University status, UMass support and land survey report are finalised.

Towards this the untiring efforts of our team is laudable.

Arvind Mehta
Chairman – Empowerment Committee Plastindia International University
Past President – Plastindia Foundation & AIPMA

Mr Arvind Mehta, Chairman Plastindia International University Empowerment Committee met Smt Anandiben Patel, Chief Minister of Gujarat with Dr Sanjay Sanghvi, Secretary General Plastindia Foundation and Mr Vajubhai Vaghasia on 17th March 2016 in Gandhinagar, Gujarat.

Mr Arvind Mehta, Chairman Plastindia International University presented PIU brochure to Mr Mukesh Ambani, President Pandit Deendayal University (PDPU) & Chairman & Managing Director, RIL on the occasion of 4th Convocation of PDPU on March 06, 2016.




Upcoming Events




Sr No.	Date	Name of Exhibition / Conference	Venue
1	03 - 06 May 2016	Expo Plast Peru 2016	Lima, Peru
2	08 - 10 June 2016	Kenya Plast	Nairobi, Kenya
3	08 - 10 June 2016	Compack Kenya	Nairobi, Kenya
4	13 - 16 June 2016	Argenplás	Buenos Aires, Argentina
5	14 - 17 June 2016	Rosupack	Moscow, Russia
6	23 - 24 June 2016	3rd International Chemical Downstream	Mumbai, India
7	07 - 10 July 2016	Interplas Thailand 2016	Bangkok, Thailand
8	08 - 10 July 2016	Plastics Myanmar	Yangon, Myanmar
9	05 - 07 August 2016	Sri Lanka Plast	Colombo, Sri Lanka
10	12 - 16 August 2016	Taipei Plas	Taipai, Taiwan
11	15 - 16 August 2016	Polymer Compounding Expo 2016	Bangkok, Thailand
12	15 - 16 August 2016	Plastic Extrusion Flexpack Expo 2016	Bangkok, Thailand
13	15 - 16 August 2016	Cam Tech Expo 2016	Bangkok, Thailand
14	18 - 19 August 2016	4th Injecton, Blow Moulding & Pet International Summit 2016	Mumbai, India
15	15 - 16 September 2016	4th Speciality Films & Flexible Packaging Global Conference, 2015	Mumbai, India
16	22 - 23 September 2016	5th Speciality Films & Flexible Packaging Global Simmit 2016	Mumbai, India
17	03 - 07 October 2016	5th International Plastics, Rubber And Composites Fair	Brno, Czech Republic
18	04 - 06 October 2016	Ethiopia Agrofood Plastpack	Addis Ababa, Ethiopia
19	19 - 26 October 2016	K 2016	Dusseldorf, Germany
20	08 - 10 November 2016	Cosmex 2016	Thailand, Thailand
21	26 - 29 November 2016	Plastshow 2016	Ahmedabad, India
22	28 - 29 November 2016	IMD 2016 (Injection Molding Mold Design Expo)	Bangkok, Thailand
23	29 - 30 November 2016	11th European Bioplastics Conference	Steigenberger Hotel, Berlin, Germany
24	15 - 16 December 2016	WPC 2016	Bangkok, Thailand

National Conference on-"Plastic Packaging- The Sustainable Choice"- 19th January 2016

The Conference on- " Plastic Packaging – The Sustainable Choice" was organized jointly by Organization of Plastics Processors of India, FICCI and Department of Chemicals & Petrochemicals, Govt. of India in New Delhi on 19th January 2016. A Knowledge Paper on the theme of the conference prepared by FICCI and Tata Strategic Management Group was also released in the presence of large number of officials & Captains of the Plastic Industry, academicians, technocrats, policy makers, Civic Society etc.

Mr. K. K Seksaria, President, Plastindia Foundation in his Welcome Address at the Inaugural Ceremony emphasized that the growth of the industry must come with greater realization of and increased attention to the safety, health and environmental standards.

Mr. Prabh Das, Chairman, FICCI National Petrochemical Committee, MD & CEO – HPCL – Mittal Energy Limited Chaired the Inaugural Session. He focussed on the important role that the recycling industry can play to make the sector sustainable. He advised for more focus to R&D efforts and innovations for growth of the sector.

Mr. C. Bhaskar, President, OPPI & MD & CEO – XPRO India Ltd. Proposed Vote of Thanks. He advised for the need of industry for technology up-gradation to become more competitive and sought support for the same. The industry also needs to think about building scale in order to realize economies of scale and has to focus on innovation he advised.

A report prepared by FICCI and Tata Strategic Management Group (TSMG) on plastic industry titled-'Plastic Packaging- The Sustainable Choice' was released by FICCI at the conference.

Technical Sessions:

Besides the Panel Discussions on-"Plastics Packaging- The Sustainable Choice", there were 4 Technical Sessions.

Innovations in Plastic Raw Materials Used For Packaging

Mr. Milind S Chavan, Manager Value Chain, NBD & Sustainability, Dow Performance & Specialty Plastics made a Presentation on- "Sustainable Flexible Packaging".

Mr. Tushar Dongre, General Manager (Polyethylene), Product Application & Research Centre, Reliance Industries Limited made a Presentation on –"Plastic In Packaging-Trends & Innovations".

Mr. Nilesh Shah, Application Technology Manager – South Asia, Middle East and Africa Region, ExxonMobil Chemical India Pvt. Ltd, made Presentation on- "Metallocene Polyethylene (mPE) – Sustainable Packaging ".

Innovations In Packaging

Ms. Deepali Kelekar, Head, ADTS department of LyondellBasell Industries for AFMEI region made Presentation on-'Innovative Polyolefins For Packaging Applications'.

The subject of Presentation of Mr. Pankaj Poddar, CEO, Cosmo Films was- " Trends : Speciality BOPP Films".

Mr. M.K. Banerjee, Director- Creativity & Innovations (Global), Essel Propack Ltd. made a Presentation on – "Tubepack- Sustainable Way to Pack Various Consumer Products".

In the Technical Session on- "Innovations In Plastic Processing Machines used for Plastic Packaging Materials", there were 3 Presentations.

Mr. Frank Bernotat, Senior Sales Manager (Plastic Division), Hosokawa Alpine Atkiengesellschaft, Germany made a Presentation on – " Barrier Packaging- The New Wave".

"The Sustainable Production of Barrier Films – A comparison of Blown Film, Cast Film and Water Quenching" was the subject of Presentation made by Mr. Suhas Kulkarni, Managing Director, Windmoeller & Hoelscher India Pvt. Ltd.

Mr. Vijay Shankar, VP, Mamata Extrusion System Pvt. Ltd. spoke on- "Sustainability Through Emerging Technologies – Films, Bags, Pouches and Packaging ".

The last Technical Session was on – "Plastics Packaging- The Sustainable Choice- Way Forward".

Mr. John James, Export Manager, Wells Plastics Ltd., U.K. made a Presentation on – "Oxo - Biodegradable Flexible Packaging To Tackle Litter Problem".

In the last Presentation of the Seminar, Mr. Peter Malmros. Senior Technical Manager for polyethylene (PE) and polypropylene (PP) film, Borouge, Abu Dhabi spoke about - "Borstar Greenhouse Film: The Sustainable Choice from Borouge".

All Technical Sessions were conducted and co-ordinated by Mr. Deepak Lawale, Secretary General, Organization of Plastics Processors of India.

Release of Knowledge & Strategy Paper on "Plastics Packaging- The Sustainable Choice"

Corporate Learning Programme (CLP)

Indian Plastic institute (IPI) proud to announce the introduction of our new Corporate Learning Programme (CLP) PLASTICS FOR NON PLASTIC PEOPLE. This is aimed for people dealing with plastic raw materials and Products in the plastic industry but not familiar with the science of plastics. The aim of IPI is to familiarize these non-plastic people the basics of plastic material, its properties and end products performance. This programme has following modules:

1. Introduction of polymers
   - What are plastics
   - How plastics are produced
   - Basic properties of Polymers &Plastics
2. Fundamentals of Polymer Processing & Processing Methods
3. Role of additives
4. Basic testing of plastics: Key mechanical properties (MFR, Tensile etc.)
5. Polymer products& Applications
6. Future of plastics. Latest Development in Plastics.
7. Group Discussion

This programme is designed for a 4-5 hrs. Class room training including open house discussion.

Who all should attend this programme?

New entrepreneurs, People in Sales & Promotion, People in Accounts & Purchase, People in Legal and Regulatory affairs, Managers, Supervisors & Operators. IPI also Offer this programme to Corporates and Business Houses at their Business Locations. The entire schedule will be supervised and conducted by our experts of IPI.

The modules offered:

	Module	Content
1	History of Plastic	This display chronicles some of the key discoveries, Invention
2	Introduction of Polymers	What are Plastics, How they are made and Processed. What are their Basic properties
3	Fundamentals of Polymer processing & processing methods	Rheology, Screws & Design. Common Processing methods, Typical Properties
4	Role of Additives	Mechanism of Degradation, Additives and their role in Product Performance
5	Testing Of Plastics	Characterization Plastics. Identification Methods, Mechanical properties, Thermal Properties
6	Polymer Products & Application	Plastics in Daily use, Typical structures
7	Key Drivers & Latest Developments	Key Sectors in plastics
8	Future of Plastics	Exciting Applications
9	Plastics and Environment	Sustainability, recycling

Programme Schedule/Details:

- One full day Programme with selective modules
- Lecture by Qualified experts
- Video clippings
- Question answer sessions
- Supported with Study Material
- Participation certificate

INDIAN PLASTICS INSTITUTE

30-Sarvodaya Industrial Estate 1st Floor, Near Paper Box Factory, Off Mahakali Caves Road, Andheri (East), Mumbai, Maharashtra 400 093, India.

Tel : 91-22-66950347 / 66962601|| Fax : 91-22-66950348

Email : indianplasticsinstitute@ipiindia.org

Web : www.ipiindia.org

INDIAN PLASTICS FEDERATION

Kolkata on 26th February 2016 at the extra-ordinary general meeting held at Indian Chamber of Commerce, new office bearers have been elected for the term 2015-16.

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SYMPOSIUM ON UNION BUDGET 2016-17 AT IPF CONFERENCE HALL

On 7th March 2016 a symposium on Union Budget 2016-17 was held at IPF Conference Hall. Mr. S. S. Gupta, FCA spoke on Direct Taxes and Mr. Arun Agarwal, FCA spoke on Indirect Taxes. An interactive discussion also took place after the address of the speakers. A large number of members attended the Symposium.

Central Institute of Plastics Engineering & Technology

Important Events & Happenings of CIPET

The International Conference on “Advancements in Polymeric Materials” (APM 2016) was hosted by Laboratory for Advanced Research in Polymeric Materials (LARPM), with the theme focused on “Marching towards Technological Developments”, from February 12–14, 2016, in the premises of CIPET Ahmedabad. The conference was inaugurated by Shri Hansraj Gangaram Ahir, Hon’ble Minister of State (Chemicals & Fertilizers), Govt. of India. Around 500 participants comprising of Professors, Lecturers, Research Scholars, Industrialists from various Universities, National Laboratories, IITs, NITs, and Industries were present in this Mega Event.

Technical Seminar on “Positive Attributes of Plastics & its Waste Management”

One day technical seminar on “Positive Attributes of Plastics & its Waste Management” was organised by CIPET at Jodhpur (Rajasthan) on 22nd February, 2016 & Chennai (Tamilnadu) on 26th February, 2016 with the support of Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India. The main objective of the seminar is to create awareness among the NGOs, Officials from State & Central Govt., Industries, associations, Consumers, etc., engaged in the activities of Plastic Waste Management. Poster & Slogan writing competition for the School students were organised in these locations & prizes were distributed to the winners.

Seminar held at Jodhpur

Seminar held at Chennai

Participation in Poly India 2016 Exhibition

CIPET actively participated in Poly India 2016 exhibition held at Bombay Exhibition Centre, Mumbai from 28th to 30th January, 2016. The International Exhibition was organized by Federation of Indian Chambers of Commerce and Industry (FICCI), Central Institute of Plastics Engineering & Technology (CIPET), in coordination with Department of Chemicals & Petrochemicals. CIPET stall at Polyindia exhibition was inaugurated by Shri Hansraj Gangaram Ahir, Hon’ble Minister of State (Chemicals & Fertilizers).

Gujarat State Plastic Manufacturers' Association

GSPMA initiated PLASTIC ENVIRONMENT AWARENESS DRIVE in lines with "SWACHATA ABHIYAN"

GSPMA – Gujarat Plastic Manufacturers Association has taken an initiative "Plastic Environment Awareness Drive in lines with our Hon. Prime Minister Shri Narendra Modi's "SWACHATA ABHIYAN".

This awareness drive educates students about littering habits & prudent use of plastics & its disposal to overcome the situation & help civic authorities in disposal of solid waste management. It also aims at removing the misconception prevailing in the society about use of plastics in our day-to-day life.

During the drive in schools students were shown audio/video presentations. The presentations focused on the Importance of Plastics in our day-to-day life, How to use Plastics wisely, Segregation of waste into Dry & Wet and more over enhancing the complete process of "Waste to Wealth – Recycling of Plastics". Focus was also given to educate students that "Plastics are Environment-Friendly, but our Habits are Bad".

Environment Activity carried out in the following Schools in Ahmedabad in the month of March'16:

1) Shree Chanakya Prathmik Shala
2) Motherland International School
3) Uma Vidhyalaya
4) Devasya International Public School
5) Dipak Shikshan Shankul
6) Rameshwar Shikshan Shankul
7) Galaxy Global School
8) Takshashila School
9) Shakti Vidhyalay
10) New Vibhor International School
11) Divine International School

At Shree Chanakya Prathmik Shala

At Devasya International Public School

At Galaxy Global School

At Rameshwar Shikshan Shankul

MoU signed by AIPMA and Government of Haryana

A MoU was signed by Mr. R.K Aggrawal, President, AIPMA with Government of Haryana during 'Happening Haryana-Global investors Summit' in presence Shri Manohar Lal Khattar, Hon'ble Chief Minister of Haryana on 7th March 2016 in Gurgaon. Within the framework of this MoU, AIPMA will establish a Centre of Excellence in Gurgaon. The Centre of Excellence will consist of Skill Development Centre, Design Centre, Technology Incubation centre, Conference facilities and administrative block. This Centre will cater to the technology, market and skill need of the large base of industries in the region. This will be first Centre of this kind in India primarily to implement Hon'ble Prime Minister's vision of Make in India and Skilling India. Haryana Government has agreed to allot 2000 sq. meters of land at a prominent location for this purpose at the government reserved price.

AIPMA has also partnered with Government of Haryana in establishing a dedicated Plastic Park in Panipat. The preliminary proposal for the same has been approved by Government of India under the Integrated Plastic Park Scheme.

Participation in Plastivision Arabia 2016 from February 22 – 25, 2016 at The Expo Centre Sharjah, U A E

Shri Amar Agrawal – Hon'ble Minister of Commerce & Industry, Govt. of Chhattisgarh at PIF Stall in Plastivision Arabia 2016, Sharjah.

Meeting with Messe Dusseldorf GmbH on 14th March 2016 at Dusseldorf Germany

(L-R) Mr. Rainer Haack – Technical Team Leader (U1-International Fair Management), Mr. Raju Desai – Treasurer, PIF, Mr. Rajeev Chitalia – NEC Chairman – Plastindia 2018, Ms. Mamta Oza – Chief Marketing & Exhibitions Manager and Mr. Erhard Wienkamp – Division Director.

Participation in CAPINDIA Chemicals & Plastics Exhibition from March 20th to 22nd, 2016 at Bombay Exhibition Centre Goregaon, Mumbai.

Mr Rajiv Raval Vice President PIF, Mr Rajeev Chitalia NEC Chairman Plastindia 2018, Mr Arvind Mehta Chairman Plastindia International University Empowerment Committee and Mr Nitin Shah Member Managing Committee PIF with Smt. Rita Teotia, IAS Commerce Secretary, Department of Commerce, Ministry of Commerce & Industry, Government of India in PIF Booth at CAPINDIA Chemicals & Plastics Exhibition.

Team Plastindia at JEC World 2016 – Composite Show & Conferences

(L-R) Mr Pradip Thakkar, Managing Committee Member – PIF and Mr Raju Desai, Hon. Treasurer – PIF met Mr Frederick Reux Midia - Editor & Editor-in - chief JEC and Ms Silvia Popa- Senior account Manager at JEC World 2016, held from 8 -10 March 2016 in Paris.

Participation in Plastimagen Mexico 2016 from March 8 th to 11th, 2016 at Centro Banamex, Mexico City.

NEC Chairman Mr Rajeev Chitalia with Mr. Sushil Prasad, Second Secretary, Embassy of India in Mexico at PIF booth during Plastimagen 2016, Mexico.

Participation in Die & Mould India International Exhibition From April 06th to 09th, 2016 at Bangalore International Exhibition Centre (BIEC), Bangalore, Karnataka, India

Team Plastindia at PIF stall.

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Dahej (Gujrat) & Varanasi (UP)