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APRIL 2010

# PLASTICS INDIA

AN OFFICIAL ORGAN OF INDIAN PLASTICS FEDERATION

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**PLASTICS INDIA**

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



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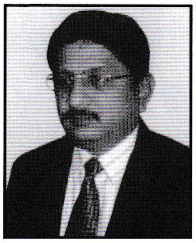
# *Editorial*



Dear Members,

Since many months I have been describing and commenting mainly on the economic scene of India, government policies on Plastic Trade and Industry - as our Federation is a commercial organization. To break this monotony, since last month, I tried to move to some general topics concerning not only the people engaged in business but also engaged in any other walk of life. I propose to continue this trend for some more time. I hope you will find my observations interesting – educative and useful in practical life.

In yester years people went to work – they did their job and came home. the leaders who had the know how and knowledge were the most powerful. They did not share the power or the knowledge. They kept their workers on a treadmill – working away but without any control. The same thing happened even in our homes. If a parent said something, the children followed and obeyed without question. Perhaps the same was the case even in our own organization.

Today thanks to technology and instant communication we can go online on any network facebook, orkut my space or twitter and follow events through observation posted there. The response time has become very quick. Further people do not hesitate before broadcasting their inner thoughts. Thus we are becoming more and more transparent. Today one wrong statement and other members of the organization would immediately make a comment.

In my view this change of attitude is for the good. If we allow our children to question our decision we will be more careful in making decisions. If we discuss matters with them they may even come up with more creative solutions which our mind cannot even envisage.

If a higher authority knows that he or she is answerable to the members they will be more careful and vigilant when initiating projects and programmes.

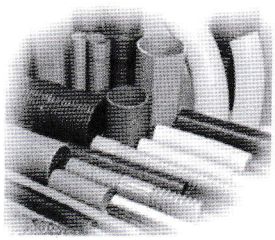
Time tested solutions are safe all right but do not take us further. We need new ideas and concepts. This is possible only if we have open discussions and allow members to speak their minds. We must create atmosphere where nobody is afraid to speak. Let us learn to respect the view of even the newest or youngest member. In this way progress is sure to follow.

Following this a few hiccups are quite possible but nothing to fret or fume since the decision were collective. This also fosters belongingness shared ownership is extremely important.

Another topic next time and with regards.

Yours truly,

**Pradip Nayyar**
*Editor*



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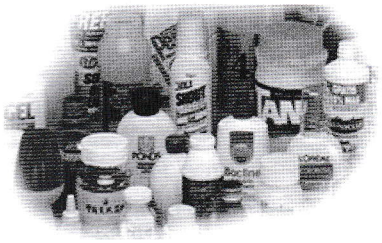

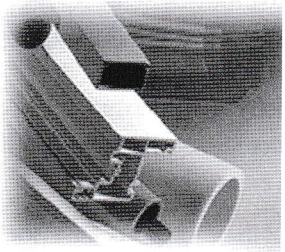

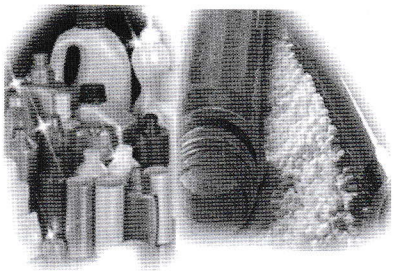

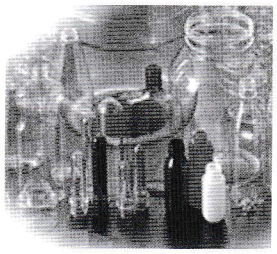

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# PRESIDENTIAL ADDRESS

Dear Members,

This is my fourth message to you after taking over as President of this Federation. The financial year has come to a close and each one of you may be busy trying to ascertain how the previous financial year has fared for you. Though the western world has been faced with a slow down, India has been much less affected by it. Only those industries that depend too much on exports may have had their bottom line shrinking. As most of our members are dependent more on domestic industry, rather than exports, the year for all practical purpose has been good to them.

Engineering and high performance polymers (HPP) cover a wide spectrum of materials from well established plastics. They are valued amongst other properties, for their temperature resistance, dimensional stability and chemical resistance in several demanding applications. Product and applications development and substitution of traditional materials were also key drivers of growth. This category of plastics has evolved rapidly over the past few years. These high performance plastics are usually used in applications such as:

Automobiles with continued metal replacement and to address the increasing temperature performance requirements in engine compartments;

Computers and peripherials;

Consumer goods, such as cookware, sporting goods and other household items;

Electrical and electronics;

Industrial applications that primary includes chemical processing, oil and gas, food processing, power plants and water treatment;

Medical sector;

And many other continually expanding areas;

Often in the high performance plastics industry, the market has been limited by a lack of production capacity. The situation is changing as more players are entering the market. Building capacities in the market for HPPs require considerable investment, as the production processes are generally much more complicated than for engineering plastics. This explains the reluctance of companies to invest in capital expansion. But they should be concerned about losing potential opportunities because of their unwillingness to expand. Timing the market efficiently with respect to capital expenditure can make or break companies and even product types in the high performance plastics market.

Driven by innovation and application development, high performance polymers will continue to grow. The industry is also beginning to see the entry of newer players, or current suppliers who want to expand their presence into newer product lines, which will increase competition in the high performance market.

High performance plastics is an area where there are few or practically no manufacturers in India. Most of the requirements of Indian industries are imported from various countries. As the applications of HPP is widely used in India and is continually growing it would be wise if some of the big manufacturers develop facilities to manufacture this category of plastics in India that can supply not only to the domestic market but also international markets.

On 22nd March 2010 the West Bengal Budget for 2010-11 was presented by Dr. Asim Dasgupta, Hon'ble Minister for Finance, and has addressed the twin issues of spiraling food inflation and need for employment generation specially for the disadvantaged sections of the society. Continued thrust on social welfare, poverty alleviation, agriculture and horticulture and small scale industries in the State has been also provided.

In this issue, a summary of the State Budget affecting various sectors has been compiled for easy understanding for our members.

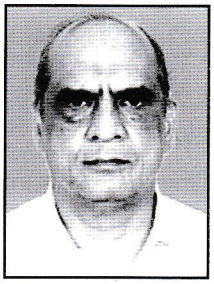
I wish you prosperity and continued success in the new financial year.

With warm regards.

**Sourabh Khemani**
*President*

## *From the Desk of*

# *The Hony. Secretary*



Dear Members,

The financial year has come to a close with a favorable budget and rising expectations of a better monsoon this year. Inflation is on the rise and RBI has started taking steps to reduce money supply in the economy.

After months of effort Indian Plastics Federation (IPF) has successfully convinced the Chandernagore Municipal Corporation and Ashokenagar – Kalyangarh Municipality on the advantages of construction of road using waste plastic mixed with bitumen. On 17th March 2010, Mr. Amiyo Das, Mayor Chandernagore Municipal Corporation inaugurated construction of a 1 Km stretch of road using plastic waste mixed with bitumen in the presence of media.

On 18th March 2010 a similar project was launched in Ashokenagar-Kalyangarh municipality by Smt. Sharmishta Dutta, Chairman of the municipality in the presence of media. This municipality also intends to construct a 1 Km stretch of road in the municipality in the first stage.

Many of you may be aware that IPF's first project on road construction using waste plastic mixed with bitumen was at Kalyani in April / May 2009. The Chairman of the municipality has recently written to IPF about the good performance of this road compared to other roads where this technology has not been used.

IPF has written to The Chairman, West Bengal Pollution Control Board (WBPCB) requesting for the support and cooperation of WBPCB for IPFs initiative in promoting source segregation of plastic waste and recycling in collaboration with a recognized NGO. IPF has requested for use of the logo of WBPCB as well as Ministry of Environment, Govt. of West Bengal in the publicity material of IPF in its source segregation project.

With reference to a report that appeared In The Economic Times the Chairman of Central Pollution Control Board (CPCB ) had stated that in consultation with State Pollution Control Boards, the State Pollution Control Board will finalise a time bound action plan for reducing the pollution level in certain industrial clusters by imposing a moratorium on new units till August 2010 in which dist. Howrah where IPFs Poly Park is located; in this regard IPF sought clarification from the Member Secretary, WBPCB. The WBPCB has confirmed their No Objection of units coming up in the Poly Park that follow pollution control norms.

Thanking you

Poddar

**Ramawatar Poddar**
*Hony. Secretary*

# WEST BENGAL STATE BUDGET 2010-11

Compiled by

*Shri Sourabh Khemani*

## General

- E-filing of VAT return will be mandatory from 1 April 2010 for all dealers. A large number of facilitation centre enlisted to assist dealer not having IT infrastructure to file online return.
- E-payment of tax can be made from all public sector bank. Allahabad Bank and United Commercial Bank appointed to act as "Agency Bank".
- Turnover limit for VAT audit increased from Rs. 1 crore to Rs.1.5 crores.
- Period to file revised return increased from three months to six months.
- Late fee for delay in submission of return reduced. The fee to be levied on the basis of delay in time for submission of return.
- Settlement scheme introduced in relation to settlement of pending Form dispute under WB Sales Tax Act, 1994 with Certificate Organisation of Directorate of Commercial Taxes for demands raised up to 31st March 2004. The scheme is as follows:
  - Reduction of 75% of the certificate demand up to 5 lakhs and 50% waiver of interest accrued for non-payment of demand within the specified date in notice issued by Tax Recovery officer.
  - Reduction of 50% of the certificate demand exceeding 5 lakhs and 50% waiver of interest accrued for non-payment of demand within the specified date in notice issued by Tax Recovery officer.
  - Withdrawal of certificate demand in respect of assessment period up to 31-3-1999 arising from ex-parte assessment order for three successive assessment year provided that the registration certificate has been cancelled before 31-3-2009 and the dealer is found not in existence.
  - No assessment proceeding to be initiated if scrutiny of return has not been done within 4 months. In terms of section 41, the Commissioner of Commercial Tax can scrutinize the return filed within 4 months.
  - The dealer has been given an option to remove the irregularities pointed out in the notice of assessment. Once the dealer passes the demand arising out of the irregularities along with the 10% penalty, the assessment will be deemed to be completed.
  - The border check post established to be removed gradually. Minor check post to be removed from current year.
  - It is proposed to introduce an online system for self generation of way bills and transit declarations to replace the present manual system. Under the new system, which would be synchronized with the abolition of the check posts, a dealer can generate the aforementioned documents at his place of choice.
  - Provision for Audit assessment introduced – The audit officer is empowered to assess the dealer if any irregularities with revenue implication are noticed. Currently, after departmental audit an audit report is submitted to assessing authority who again assesses the dealer, based on the books of account and the audit report.
  - Procedure of registration simplified. The system of e-registration introduced w.e.f. 01-01-2010. A number of facilitation centres are proposed to be established for doing the formalities.

## Amendments Effecting Industry

- Input Tax Credit on coal will be allowed when used as raw material in the manufacturing process in Iron and Steel Industry.
- The benefit of Input Tax Credit on purchase of capital goods used in the manufacturing process viz. spare parts, components and accessories of the plant and machinery used.

## Amendments Effecting Real Estate Sector

- Composition scheme allowed to the contractor purchasing goods in course of inter-state trade and commerce.
- Under Ad-hoc percentage method for discharge of VAT in works contract [Rule 30(2)], the apportionment of tax on the total contractual value for civil construction has been changed to 40% (previously 20%) of the contract value attracts 4% tax and 35% (previously 55%) of the contract value attracts 12.5%.

### Small Dealers

- Small dealers enjoying composition scheme (having turnover of Rs.50 lakhs) allowed to file annual return and pay quarterly tax.
- Small hotels, restaurants, dhabas, estuaries etc selling cooked food can opt for composition scheme (@4%) if the total turnover does not exceed Rs.15 lakhs.
- Small dealer having turnover up to Rs.2 crores will be eligible for input tax credit if he is able to provide tax invoice etc. Relaxation provided if the Books of accounts specified in section 63 is not maintained.

### Amendments Effecting Exporter

- A dealer is eligible to receive 75% (previously 50%) of pre-assessment refund within one month of receipt of application and remaining 50% within six months.
- The requirement to furnish a declaration and certificate (Form 12B) at the time of filing refund claim has been done away with.
- Online submission and processing of refund claim to be introduced from 1st June 2010.
- ECS system proposed to be introduced for credit of refund amount.

### Amendments Effecting Tea Sector

- Exemption from payment of Education Cess and Rural Employment Cess has been extended up to 31-3-2011.
- An easy payment schedule to liquidate the arrear dues on account of cess up to 31-3-2010 has been provided and time limit extended up to 31-3-2011.

### Miscellaneous Amendments

- Exemption from payment of VAT on imported sugar extended till 31-3-2011.
- Requirement for obtaining Professional Tax Clearance Certificate for getting any contract or order from government has been done away with.

### Changes in rate of Tax

| Item | Proposed | Existing |
|---|---|---|
| Musical String | Exempt | 4% |
| Dried parts of plants including flowers | Exempt | 4% |
| Fuel made from solid waste procured from self local government. | Exempt | 12.5% |
| Perforated metal net (jail) | 4% | 12.5% |
| Casing of bearings | 4% | 12.5% |
| Flush door, block boards, particle boards, boards made from bagasse or other organic material. | 4% | 12.5% |
| Computerised and non-computerised embroidery machine. | 4% | 12.5% |
| All spare parts of an electric fan | 4% | 12.5% |
| Rice bran | Exempted (from 1st March 2010) | 4% |
| Foreign Liquor (Rate of sales tax) | 37% or 23% on MRP | 30% or 20% on MRP |
| Mobile Phone having MRP more than Rs.3,000. | 12.5% | 4% |

# Indian Industry and its role in Economic Growth

By Mr. Sudhansu Kumar Das

India was eventually the heritor of a shattered economy left out by the colonial British rulers. The entire economy of pre-independence regime was manipulated by the British Government for the sake of their own interest and the people of this country were deprived of the fruits of country's perennial natural resources in the form of fertile land, conducive environment, water sources and valuable minerals. On getting the power in ham our then leaders realized the need for immediate revolutionary steps to set right the situation and to mould the economy according to the need and aspiration of the people of the country. The gift of God has given us one of the most fertile land assets of the world and therefore our economy is predominantly agriculture based. The major population is in habiting in rural areas and earning their livelihood by way of cultivation of land. The Government of the independent India had therefore rightly focused on rapid growth of agriculture sector to improve the health of economy in one hand and to keep the food problem of the country in control on the other hand. However, it became necessary to look into the areas of infrastructure such as power, irrigation, fertilizers etc. for rapid and even growth of agriculture in the country. As such, priority was accorded to power and other Infra structural projects in formulating the first five year plan of the country. In course of time, the need of industrialization was felt for improvement in the living conditions of the people and a new industrial policy was framed for rapid industrialization in the country during the second five year plan. The mission of industrialization had gained momentum in the third five year plan with target outlay of 24.6% on transport and communications and 20.1 % on minerals. In the fourth five year plan the allocation was 18.5% for industry and minerals whereas the transport and communication got the share of 18.4% and power development 17.8%. Subsequent five year plans paid attention for industrial growth in line with Government's priority in the areas of poverty alleviation, employment generation, rural development, up liftment of weaker section of the society, self reliance and sustained focus' on export. In nineties, the country adopted the policy of economic liberalization and globalization so that it can match the world economy and bring the country as a major economic power in future days. The liberalization had helped the country to bring new technologies and products in our country and also helped our manufacturers to be competitive in the world market.

The Government of India has taken various policy initiatives for growth, promotion and development of industrial sector from time to time depending upon the need and aspiration of the people of the country and the interest of the stakeholders in this sector.

The main objectives of these policy measures are:

- To maintain a sustained growth in productivity.
- To enhance gainful employment.
- To achieve optimal utilization of human resources.
- To attain international competitiveness, and

- To transform India into a majorpartner and player in the global arena.

To achieve the above objectives, the main focus on the policy is on:

- Deregulating Indian Industry.
- Allowing the industry freedom and flexibility in responding to market forces, and
- Providing a policy regime that facilitates and foster growth of Indian industry

In order to address the problems of the industries and to effect sustained growth and development in all areas of industrial activities, the Government of India had grouped the industries in various sector viz., Large scale/heavy industry, Medium scale industry, Small scale industry and Tiny/micro industry so that the monitoring of progress of such industries can be done in a focused manner. The basic principle of categorization of such industries lies on limiting the amount of investment in plant and machinery

| Classification | Investment ceiling for Plant, Machinery or Equipments | |
|---|---|---|
| | Manufacturing enterprises | Service enterprises |
| Micro | Upto Rs. 25 lakh | Upto Rs. 10 lakh |
| Small | Upto Rs. 5 Crore | Upto Rs. 2 Crore |
| Medium | Upto Rs. 10 Crore | Upto Rs. 5 Crore |
| Large | Above Rs. 10 crore | |

deployed for the activities by the enterprises. Such limits changes from time to time based on necessity and demand from the concerned industrial sector. As of now, the following is the definition of various categories of industries.

**Large Scale/Heavy Industry**

Apart from the above definition, it may be generically stated that Large Scale industries are such industries which require huge infrastructure, man power and substantial amount of investment.

Incidentally,11 the heavy industries of India viz., the iron and steel fall under the large scale industrial arena. The interest of large scale industries are looked after by the concerned Ministries in the Union Government such as Ministry of Coal, Ministry of Fertilizer, Ministry of Petroleum etc. Apart from these Ministries, the Department of Industry Policy & Promotion under Ministry of Commerce and Industry, Government of India formulate policy measures including foreign direct investment for promotion and development

of this sector. Some of the other major large scale industries in the country are cement, power, fertilizers, coal, natural gas production, petroleum, railway, road transport, shipping, aviation, steel, engineering, machine tools, electronics and IT etc.

**Micro and Small Industry**

Micro & Small industry sector (MS) requires lesser investment" and labor intensive and less overhead cost of production. This sector is ideally suited to build on the strengths of our traditional skills and knowledge, by infusion of technologies, capital and innovative marketing practices. Considering the typical advantages and need for rapid industrialization, emphasis was given for setting up more and more tiny and small scale industries particularly village based industries as because such industries can provide more employment with less investment and utilize local resources at a comparatively cheaper rates. Such units were given protective environment of reservation and other financial supports so enable smooth growth. In course of time, the tiny and small scale industries in the country flourished and now it has become a vital contributor in the economy of our country. At present about 8000 products from low technology items to highly precision defense and satellite components are manufactured in MS sector. MS sector contributes almost 40% of the gross industrial value added in the Indian economy. The approximate value addition is estimated to be 10 per cent points. As of the figure of 2000, the over 3 million MS are in existence in the country. It creates largest employment opportunities for the Indian populace, next only to agriculture. It is estimated that RS 1 lakh investment provide job to at least 4 persons. MS sector plays a major role in India's export performance. 45-50% of India's export is contributed by MS sector. Direct export from the MS sector account for nearly 35% of the total export. Besides direct export, it is estimated that MS sector contribute around 15% to exports indirectly. It would be interesting to note that non-traditional products account for more than 950/; of the MS exports. The major export products from MS are garments, leather & leather goods, gems & Galeras, spices, coir products etc.

As may be. seen from the above Table, both manufacturing and service activities have been brought under the ambit of micro & small scale sector. This sector is nurtured in the Government by a separate Ministry known as the Ministry of Micro Small and Medium Industries (MIME), Government of India. As the name suggest, this ministry also look after the interest of Medium Industries as well. Ministry of MIME formulates various policy, schemes and programed for promotion and development of Micro, Small and Medium scale industries in the country. An Act has been enacted in the name of MSME Act,2006 in October, 2006 which has been brought out for focused growth, development and competitiveness in global market in respect of this sector.

**Medium Scale Industries**

Medium scale industries stand between large and small scale industries in terms of investment in plant and machinery.

However, it get the attention and support of the Government through various schemes and policy measures for sustained growth and develop hand in hand with its neighbouring industrial sectors. The MSME Act 2006, included medium scale industries under the purview of the Act and many of the schemes and facilities meant for Micro & Small industries are being extended to this sector as well.

**Growth of Industrial Production**

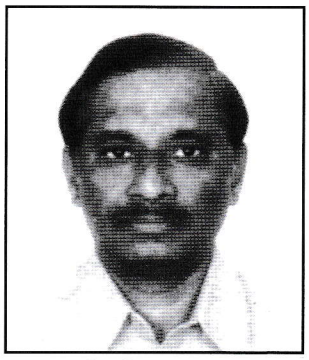
Starting with the figures of 2006-07, it has been observed that the industrial production registered, a growth of 9.8% in the first quarter of 2006-07 in which manufacturing sector had the contribution of 10.9%, which was highest for this period in the last ten years. The manufacturing sector was the key driver of industrial activity, contributing almost 92.5% of the growth in industry. Electricity and mining sectors, however, continued to exhibit subdued growth. The overall industrial growth in the fiscal year 200607 recorded 8.7% in the first 11 months against previous year growth of 11.2%. For April 2007-February,2008, electricity generation was 6.6% against 7.2% in the corresponding period of the last year. Manufacturing sector occupied 80% in IIP which was the highest in weight. It grew at 8.6% against 12% in February,2007. It was higher than 5.9% in January of same year. Considering durable goods sector, which grew by negative 3.1 % in January, rose by 3.3% in February against 1.8% a year ago. Mining output maintained growth rate of 7.5% in February 2008 expanding at higher pace of 5.1 % against 5%.

**Economic Slowing down and its Impact on Industry**

Due to recent slowing down of economy in USA and its cascading impact across the globe, our economy could not remain isolated and it has affected various fields of our economic activities to a considerable extent. The Industrial sector started registering downfall in the growth and the present scenario is not at all encouraging. The leaders and economic experts along with industrial giants and associations are working hard to bring the industrial growth back on track and it is expected that a positive result in this regard would emerge in near future. As of now, the growth of industrial production continues to be dismal, the index of six core infrastructure industries in September,2008 registered a growth of 5.1 % which is marginally lower than the 5.8% rise recorded in the same month last year. However, the September growth in the index was better than 2.7% rise seen in the previous month of August,2008 which has sunk to 1.3%. In the April-September, 2008 period, the index of six core infrastructure industries increased by 4% as against 7% recorded in the same period last year. An industrial survey showed that the growth momentum has been weakening and that slow down in the growth has been spreading from light to heavy industries. Data showed that in September, 2008 coal production grew by 10.7% as against 6.3% in the corresponding month of the previous year. Growth in electricity production during September, 2008 was at 4.4% compared to almost at the same figure of 4.3% in the last year.

*Source : Plastic Industry*

# Indianoil's Foray Into Petrochemicals: Technological Advantage To Polymer Processors



**T. S. Gopalarao,**
Chief Manager
(Petrochemical Mktg WR)
Business Development IndianOil Corporation Limited

Indian oil Corporation ltd. (IOCL), India's flagship energy major, is currently India's largest company by sales with turnover exceeding USD 60 billion. Listed at 105th position in Fortune 'Global 500' , it is the highest ranked Indian company. Beginning in 1959 as Indian Oil co. Ltd., over the last 50 years ,IOCL has grown into become the 18th largest Petroleum co. in the world.

Indianoil & its subsidiaries holding 40.4% Refining capacity , meet 49% of country's Petroleum product requirement . IndianOil group of companies owns &operates10 of India's 19 Refineries with a combined Refining capacity of 60.20 Million Tons per annum. Cross-country net work of crude oil & product pipeline net work , covering close to 10000 kms., meets the vital energy needs of the consumers in an efficient, economical and environment friendly manner. With well spread out supply & distribution and marketing net work of more than 34000 customer touch points spread across pan India , supported by world class Research & Development Centre at Faridabad , Indianoil is betenoire of the World Oil Industry today.

## From Petroleum to Petrochemicals- a natural diversification:

Petrochemical sector is a major driver of Industrial growth , both for developed & developing economies. Encouraged b y the growing & envisaged growth in domestic demand for down stream Petrochemicals over the coming years , IOCL has embarked upon several vertical integration & diversification initiatives across the Hydrocarbon Value Chain , involving an investment close to Rs.30000 crores by the year 2011-'12.

## Linear Alkyl Benzene(LAB) & Para Xylene(PX) /Purified Terephthalic Acid (PTA) Plants:

Commissioning of 120 KTA LAB Plant, country's largest, at Vadodara, Gujarat , in 2004 heralded IOCL's entry into Petrochemical sector in a big way. This was followed by integrated PX (360 KTA) / PTA (553 KTA) facilities at Panipat in 2006. Coinciding with Indianoil's entry into PTA market, Indian Polyester industry has seen quantum jump in PET,PFY & other down stream industry capacities.

## Polymers – the mega opportunity:

| Sl.No | Polymer unit | No.of Lines | Total capacity KTA | Technology-Licensor |
|---|---|---|---|---|
| 1 | Polypropylene | 2 | 600 | Spheripol – Bassel |
| 2 | HDPE - Dedicated | 1 | 300 | Hostalen- Bassel |
| 3 | HDPE/LLDPE-Swing | 1 | 350 | Sclairtech-Nova |

With a per capita consumption of just above 5 kg as against World's average of 25 kg., Plastics/Polymer sector is envisaged to be the sun rise Industry of Indian economy in the coming years. Considering the anticipated manifold increase in the demand by Indian Polymer Industry, a world class Naphtha cracker with down stream Polymer units is being put up at Panipat Refinery of IOCL, involving an investment of Rs.15000 crs. appx.. Scheduled to be commissioned by end of 2009 , the cracker will be able to process 2100 KTA of Naphtha at 100% capacity utilization, yielding abt. 860 KTA of Ethylene & 650 KTA of Propylene.

## Naphtha Cracker -Downstream Units :

Downstream units drawing Ethylene & Propylene feed stocks from Naphtha cracker, produce LLDPE,HDPE,PP, MEG etc. Technology selected , after careful evaluation , for the Polymer Units will enable IOCL to offer grades for both commodity as well as niche applications.

## Details of Down Stream Polymer Units:

Details of the Polymer Units – Process Technology, Capacity- are given below:

**Polypropylene :**

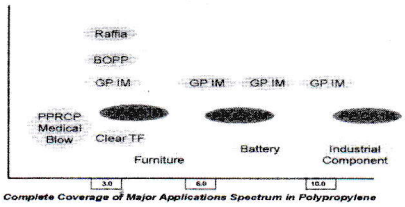
Polypropylene Plant with 2 lines of 300 KTA each is designed to produce homo-polymers, block copolymers & random copolymers including ter- polymers.

Process technology selected by IOCL-Spheripol of Bassell of Italy- is a renowned technology adopted by 45 % of Global PP producers ( 94 operating lines world wide).

## Salient attributes of IOCL PP from Spheripol Technology:

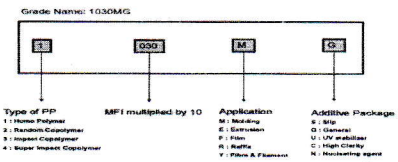
- Bimodal grades with Excellent process ability: PP plant hardware provides for flexibility to ensure precise control on Polymer chain length & thereby degree of Polymerisation of propylene , consequently Molecular weight distribution . Optimisation & better control of Molecular weight & Molecular weight distribution of PP results in production of bi modal grades , that exhibit improved processability properties.
- Lot-to-lot consistency : 600 KTA of PP capacity at panipat is divided into 2 lines , each of 300 KTA capacity. While one line will be exclusively on Homo Polymers, the other will be for producing Co-Polymers, both Random & Impact. By ensuring exclusivity of lines as above, grade change-overs in a particular line will be smooth and grade over laps are expected to be minimum, thus ensuring consistency in grade specification from batch to batch.
- Superior organoleptic Properties: By virtue of the process Technology selected (Spheripol) , the oligomer content & catalyst residue in final product will be at the min. level. This ensures PP from IOCL to be of excellent Organoleptic characteristics i.e. low/nil odor & smell.
- High flexural Modulus : Specific nature of the catalyst system and the plant hard ware are capable of producing PP of high iso tactic index , which is expected possess flexural modulus values exceeding 2000 MPa.
- High tenacity: The selected Process technology ensures better orientation of Polymer molecules which in turn gives high tenacity characteristics.
- Low seal temperature ( as low as 115 deg C) & High clarity of PP random Co-Poly grades : The catalyst system supports higher ethylene content & controlled distribution of ethylene co-monomer in Polymer, which gives low seal temperature grades & also high clarity random co-polymer grades.
- Broad melt flow index (0.3 to 1800 gms/10 min) : Process technology enables production of both cracker grades and reactor grades, with MFI varying from as low as 0.3 to as high as 1800.

## IOCL PP product envelope:




*Complete Coverage of Major Applications Spectrum in Polypropylene*

## IOCL PP – Grade Nomenclature:




## High density Poly Ethylene(HDPE) – Dedicated :

HDPE – Dedicated Plant at IOCL, Panipat is based on Hostalen Slury Process of M/s Bassell . About 20 % of the global HDPE production of 33 MnMTA , is based on this process Technology.

The name plate capacity of the plant is 300 KTA. The two reactors in series configuration and the attendant plant hardware , enables IOCL to offer HDPE with an excellent combination of mechanical properties and process ability characteristics. Production of broad range Melt Flow Index (0.1 to 52 gm/10 mins) and density (0.940 to 0.965) products is another versatility of this technology.

## Salient attributes of Hostalen HDPE from IOCL :

- Excellent combination of Process ability & final product performance from Bi-modal grades :

Owing to higher density and molecular weight vis-à-vis LLDPE/LDPE ,HDPE resins exhibit better mechanical and

hence, are preferred for high pressure & tougher applications. While increasing Mol. Wt. in the resin results in higher stiffness/ hardness, tensile strength , chemical resistance , stress crack resistance & high working temperature, it will have adverse impact on processability due to increased viscosity of the resin. Molecular weight Distribution(MWD) is an important consideration in processability of HDPE , especially high MW resins.

The Bi modal process selected by IOCL will ensure broadening the MWD thereby improving processability , which benefits poly processes such as blown film, Blow molding and Pipe applications.

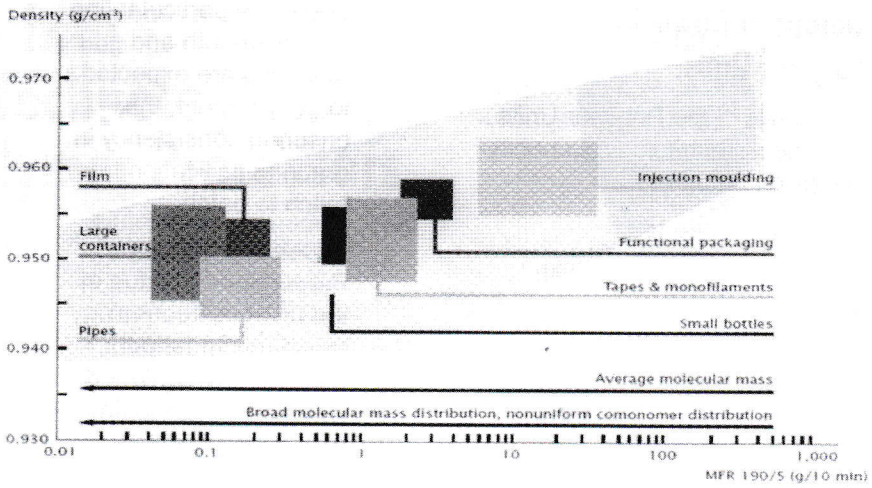
- Excellent dart impact and tensile properties from film grades
- High flow, high gloss and low warpage from injection molding grades
- Good processability and low water carry over in Raffia grades
- Good balance of ESCR, stiffness and impact properties in blow molding grades
- Bi modal pipe grades meeting the performance requirements of PE 63/80/100.

## IOCL HDPE –Dedicated Plant Product envelope:

IOCL HDPE – Grade Nomenclature:

## Polyethylene –High Density(HD) / Linear Low Density (LLD) – Swing Plant at IOCL , Panipat :

The 350 KTA HD/LLD PE




Swing plant of IOCL at Panipat is of 350 KTA capacity and is based on Sclairtech Solution process of M/s Nova Chemicals, Canada . The plant is designed to produce–

- Homo polymers, consisting of Ethylene monomer only
- Co-Polymers , containing Butene-1 as Co-Monomer
- Ter-Polymer, containing two Co-monomers, Butene-1 & Octene 1.

## Salient features of Sclairtech Process are

- Short residence time in reactor, hence lower grade transition time
- Less off-grade production in each grade change over

## Significant attributes of HD/ LLDPE from Swing Plant at IOCL, Panipat:

- Wide range of Melt Flow Index – 0.3 to 150 gms./10mins.
- Density range – 0.917 to 0.965
- High Ethylene Conversion – more than 98%
- Low gel level resins with excellent mechanical & sealing properties
- Lot -to –Lot consistency

## Product Application and Development Centre:

The high performance product basket of PE & PP from latest generation World class process technology , detailed above, will be supported by Product Application and Development Centre (PADC) , with state of art facilities , being established at IOCL, Panipat.

The Centre will be an interface between IOCL Plants, Marketing team and the Processor and will address all the issues related to product quality & performance.

The various customer-centric activities envisaged by PADC are –

- Technical support to customers
- Development of newer resin applications
- Work on new/improved grades
- Process/material optimization in collaboration with processors/machinery manufacturers.

*Source : Plastics News*

# Biodegradable mulching

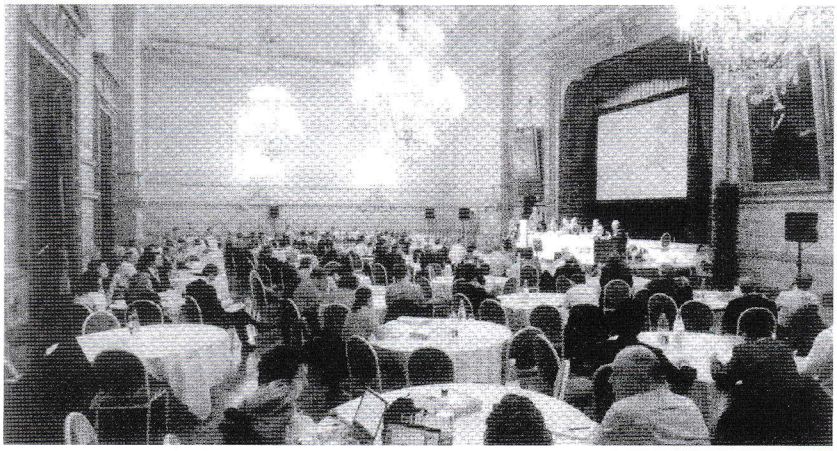
The prime objective shared by all countries is reducing the impact on the environment and landscape caused by plastics used in agriculture. Various solutions have been proposed through new technologies for recycling and long-term durability, but also through the norms governing the recycling and controlled disposal of waste. However, the biggest problem is mulching film whose recycling is difficult and costly so in the medium term a change to biodegradable materials seems likely. At the international congress "Plastics & Agriculture" - organised by Assocomaplast on March 25-

26 during the PLAST'09 show in Milan - Antonino Catara, president of PST (Science and Technology Park) ol Sicily, and Chaoyun Wang, head of the Chinese research institute IBFC, described the characteristics of biodegradable mulching film developed by the two partners and proposed as an alternative to the usual plastic film. With the patent for producing PHA, a medium chain biodegradable polymer, from waste food oils, PST intends substituting today's plastic mulching films with one which is entirely biodegradable made from recycled paper (Italian made) or from a natural fabric made by IBFC. Paper-based film, trialled in thegreenhouses of the experimental station on pepper crops at the University of Catania (Faculty of Agriculture), produced a 25o/o cr op increase compared to current films, whereas the Chinese natural fabric trialled on bok choy (Chinese cabbage) increased production by up to 50ol". This is explained by the rise in temperature, stabilised soil humidityand improved plant-water-soil ratio.

By covering supports with biodegradable film, it was possible to confirm its strength, durability and versatility compared to other biodegradable materials sampled. This solution offers the advantage of exploiting a controlled waste product (waste food oils) and contributing significantly to the problem of disposing agricultural plastic, given that this product degrades naturally in the soil. Companies and specialists in this sector have already offered to collaborate in setting up machines to produce the film and apply it in the field. There was wide consensus on extending use of the film to open field crops like watermelon, zucchini and lettuces as a substitute for untreated paper that degrades prematurely. There are also great possibilities for organic farming in which Sicily is number one in Italy. Together with machine producers, PST Sicilia soon hopes to obtain the film needed to run trials on a much larger scale and to extend them to a wider range of crops.

# Identified waste

More than 190 experts met in Brussels on April 20-22 for the seventh Identiplast conference organized by Plastics Europe to discuss the future of plastics recycling and recovery. In a series of 39 different presentations, given by speakers from the plastics as well as from the recycling industries, the European Commission and academia delegates learned about recent developments and innovations.



There was a broad consensus that recent innovations have pushed plastics recycling forward in an impressive manner and that technological developments must continue to be pursued. Experts underlined the importance of maintaining the public's trust in recycling and recovery at a time of crisis that is also threatening the economic viability of recycling industry.

# Strategy Impossible

Producers of virgin PET in Europe buy their raw materials to an industry specification and at a price that is related to the price of oil and the supply/demand balances of the materials. This means that PET producers in

Every country will pay roughly the same price for their requirements - related to published contract prices.

This is not the case for PET recyclers - according to Petcore (PET Containers Recycling Europe). They source their raw materials (baled PET bottles) from every country in Europe, and each country's collection system is different, in fact the collection and sorting systems can vary from municipality to municipality. These different systems result in bales of varying quality and composition. Recyclers in different countries will be equipped differently to deal with their domestic bales. As well as different collection and sorting systems in each country, the costs and financial instruments are specific to each country. A recycler will have to pay one price for a French bale and another for an Italian bale. The difference between the highest and lowest contract price can be more than 100% for roughly the quality.

For much of 2008 the price of oil and, hence, PET's oil-based raw materials, were at record levels. The Chinese were buying huge quantities of European plastic bales and other collected plastics as cheap feedstock for their industries and paying high prices for mixed quality (coloured) bales. There was therefore no incentive for many municipalities to spend the extra money to sort the PET bottles to the specification required by the European recyclers. It is also the dubious practice of some countries to send their bales to China as a tactic to keen the keep the price of European bales high. When the price of oil fell in the fourth quarter of 2008 and the economic slowdown halted the Chinese demand for baled plastics the resultant European high stocks of poor quality bales caused newspaper headlines.

Unless national recycle support funding is increased, the low spot bale price caused by the withdrawal of Chinese demand will certainly force down the bale contract prices in each European country to the point where collection may not be economically feasible. In Italy the Conai recycling fee paid by the industry (packer/fillers) has been increased from 72.30/te to 105/ te from January 1 and further increases will be required to ensure recycling remains viable. The Chinese have re-entered the market in the first quarter of 2009, but can a successful PET recycle industry continue to survive such volatility?

The fastest growing and most sustainable markets for RPET are food contact sheet and containers. These require the recycle chain to add extra cleaning stages to their processes to enable them to offer food contact flake or pellets to their customers. These cleaning stages are expensive and it is evident that in the current environment, no matter how much stakeholders would like the price of recycle content resin to be below virgin, a new business model has to be considered. This, of course, makes the assumption that all members in the recycle value chain are permitted to make a profit. Margins for recyclers have declined by 30% over 2008. With PET resin prices currently close to cash cost, the only way that - according to Petcore – the recycle chain can grow, or even be sustained is to consider the following options:

- Increasing income for collection and recycling
- Studying more effective recycling logistics and business rationalisation
- Lobbying for legislation to harmonise collection schemes
- The cost of being sustainable
- In the current environment
- Means that recycle content
- Resins could be at a higher price than virgin

If we are to retain the recycling value chain - which is PET manufacturers, converters, fillers, sellers, consumers, municipalities, governments, collectors and recyclers – these stakeholders must recognise their individual responsibility to ensure that recycling remains the sustainable option and act now.

*Contd. to Page - 21*

# GLIMPSES

## PILOT PROJECT FOR CONSTRUCTION OF ASPHALT ROAD USING PLASTICS WASTE AT CHANDANNAGAR AND ASHOKNAGAR

IPF team led by Shri R. A. Lohia had followed up with the Chandannagar Municipal Corporation and Ashoknagar Municipal authorities to conduct a trial for construction of asphalt road using plastics waste. **Construction of road at Kalyani Municipality in April 2009 and its good performance report encouraged other Municipal authorities to take decision to replicate the same in their areas too.**

Ashoknagar, having 100% literate population (it has 100 primary schools) and Chandannagar Municipal Corporation – a former French Colony, basically do not indulge in littering in general. IPF team's persuasion helped the civic authorities to take decision of disposing of the plastics waste in a scientific way.

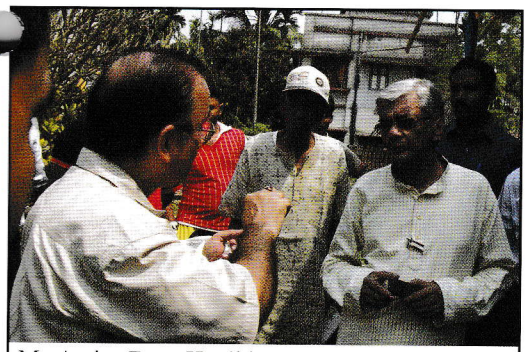
Local media has covered the event appropriately. Video recording of the road laying was taken that would be utilised for further awareness campaign.

**Construction of Asphalt Road with Plastics Waste at Chandannagar and Ashoknagar near Kolkata - March 17 & 18, 2010**

Indian Plastics Federation has been continuously carrying on awareness programmes in different municipalities in West Bengal for the use of plastics waste in road construction as per guidance of West Bengal Pollution Control Board. Members of the IPF team interacted with municipal officials at different levels, showed them demonstrations on lap top of the successful implementation of road construction using plastic waste mixed with bitumen at Kalyani and source segregation at Coochbehar. After much interaction with them, Hon'ble Mayor of Chandannagar Municipal Corporation and Hon'ble Chairperson of Ashoknagar-Kalyangarh Municipality were convinced that for the proper utilization of waste plastic in their area and for having more durable roads at less cost they also need to initiate road construction using plastic waste mixed with bitumen. On the request of IPF, ICPE provided the technical guidance. **Plastics waste for these three projects (Kalyani, Chandannagar and Ashoknagar) was supplied by M/s. H. C. Plastic.**

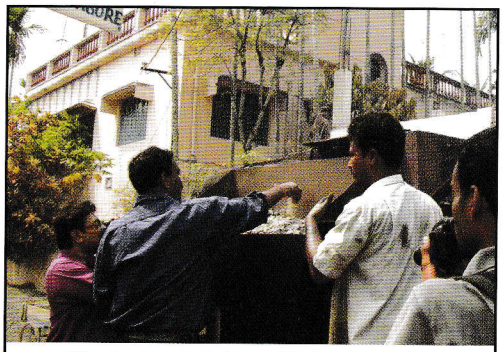
### 17th March, 2010

**Chandannagar Municipal Corporation**



Mr. Amiya Das - Hon'ble Mayor, CMC, Mayor-in-Council, being briefed by Mr. T. K. Bandyopadhyay

Chandannagar Municipal Corporation selected the most water logged prone stretch of road at Kumorpara in their Corporation area measuring around 300 metre for commencing work on this project. After completion of this stretch of road, they will move to other stretches that they have identified for this trial construction. The total length of road to be laid will be around 1 KM. The Municipality purchased the plastics waste from a party that has been approved by Indian Plastics Federation and West Bengal Pollution Control Board.



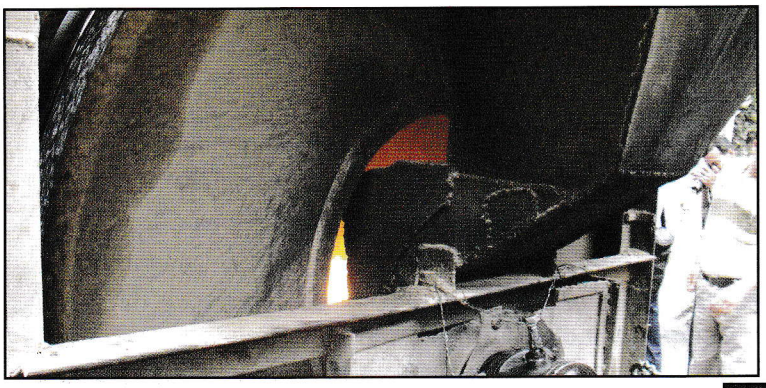
Plastics waste being added to stonechips

Batch mixing machine was used. Aggregates were loaded in the hopper. Pre-calculated quantity of plastics waste was uniformly spread over the aggregates during its loading. The aggregate – plastics waste mix was charged in to the rotor and heated at 160 / 170 degree Celsius for about 3 minutes. Hot bitumen was then added and mixed for about one minute. The batch was taken out after about 1 minute mixing time. The exit temperature of the aggregate- plastics waste – bitumen mix was maintained at 130 – 140 degree Celsius

# GLIMPSES

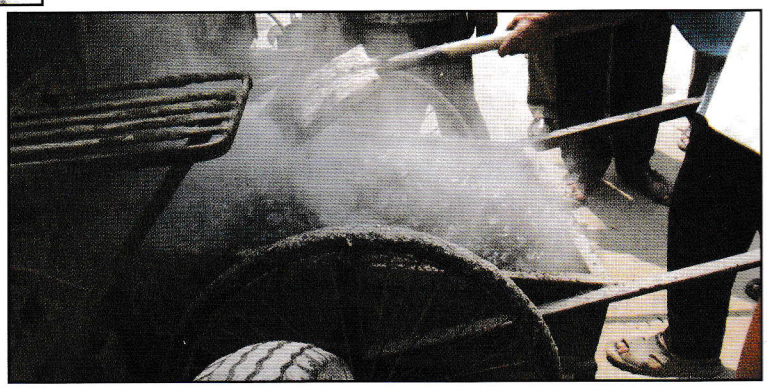
In the normal asphalt road construction, they use 10 litres of bitumen for mixing with one hopper load of aggregates. In the trial formulation, 9 litres of bitumen was used and 1 kg of plastics waste was added (10% of bitumen). 100 gm (1% of bitumen) was added to the bitumen directly). There was no problem during the construction work.

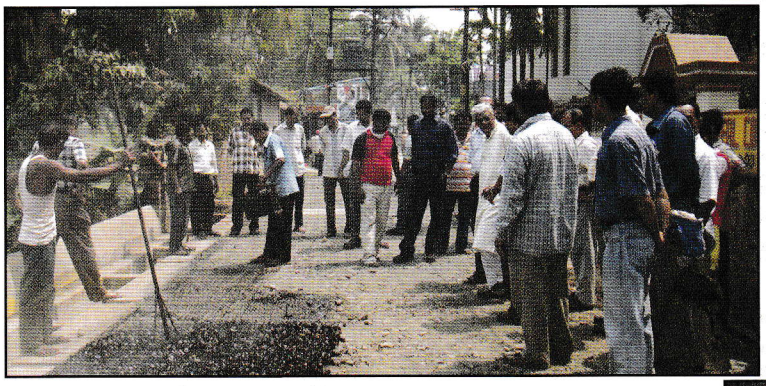
Hon'ble Mayor, Mayor-in-Council, Councillors and the Chief Engineer of the Corporation were present during the trial. Contractors, who were awarded the work order for constructing roads in other parts of the Ward, were also present during this trial and they were given all information by IPF and ICPE official so that they could construct the road themselves without any further technical assistance.



Plastics waste & Stonechips bei heated.

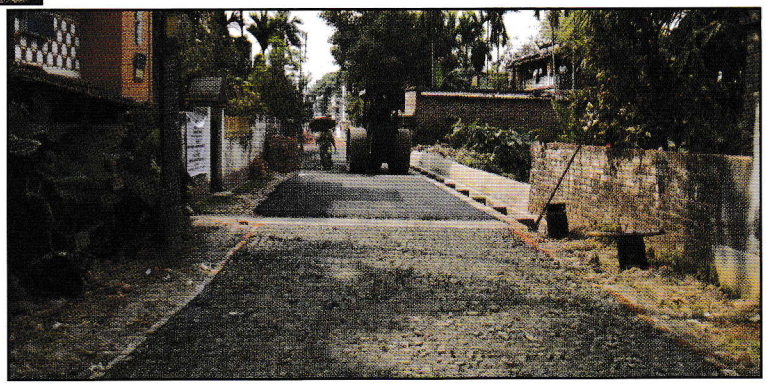
Charge being unloaded





Charge being laid on the Road. Hon'ble Mayor & others are also present.

Section of Road laid with waste Plastics mixed with bitumen



# GLIMPSES

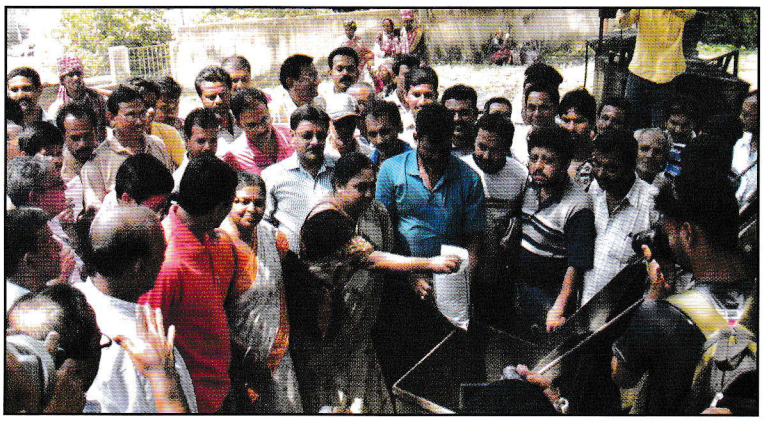
## 18th March, 2010

### Ashoknagar-Kalyangarh Municipality

Total length of about 1 KM was selected by the Municipal authority for the trial construction of asphalt road with plastics waste in different locations of the municipality. Hon'ble Municipality Chairperson, Mayor-in Council, Chief Engineer, Leader of the opposition party, Councillors – all attended and witnessed the trial. Hon'ble Municipality Chairperson informed that after observing the performance of the road in the coming monsoon, all roads of the municipality would be constructed using waste plastics in future. They also informed that they were encouraged by the good performance of the road constructed at Kalyani municipality last year.

Formulation was similar to the one conducted at Chandannagar. Seal coat was used on the top layer.

Inaugural function

Smt. Sharmishta Dutta, Hon'ble Chairperson, Ashoknagar- Kalyangarh Municipality is mixing Plastics Waste into Stonechips.

Charge being unloaded

# GLIMPSES

Hon'ble Chairperson is carrying the trolley herself. Engineer, Councillors & others are also in the group.

Charge being laid on the Road

Seal Coat being laid

Road laid with Plastics Waste mixed with bitumen

**J. Bandyopadhyay**
**Executive Secretary**
**Indian Plastics Federation**

# PRESS CLIPPINGS

কলকাতা, শিলিগুড়ি, দুর্গাপুর থেকে একযোগে প্রকাশিত

গণশক্তি

৪৪বর্ষ, ৭৪তম সংখ্যা ■ কলকাতা, ১৮ই মার্চ, ২০১০, ৩রা চৈত্র, ১৪১৬, বৃহস্পতিবার ■ ৩ টাকা ■

## ❑ জেলার খবর ❑

গণশক্তি ১৮ই মার্চ, বৃহস্পতিবার, ২০১০ (পাঁচ)

## চন্দননগরে বর্জ্য প্লাস্টিক মিশিয়ে পিচ রাস্তা তৈরির কাজ শুরু হলো

নিজস্ব সংবাদদাতা : চন্দননগর, ১৭ই মার্চ– এবার ফেলে দেওয়া প্লাস্টিককে কাজে লাগানো হচ্ছে পিচ রাস্তা তৈরিতে। চন্দননগরের ১৯ নম্বর ওয়ার্ডের পুরানো পিচরাস্তাকে সারিয়ে সম্পূর্ণ নতুনভাবে তৈরি করার পরিকল্পনা নিয়েছে কর্পোরেশন। সেই পরিকল্পনায় বর্জ্য প্লাস্টিক ব্যবহারের সিদ্ধান্ত নেওয়া হয়। বুধবার এই সিদ্ধান্ত অনুসারে শুরু হয়েছে কাজ।

চন্দননগর পৌরনিগমের মেয়র অমিয় দাস জানান, দূষণ নিয়ন্ত্রণে রাজ্য সরকারের বিভিন্ন কর্মসূচী রয়েছে, রয়েছে প্লাস্টিকের দূষণ নিয়ে বিভিন্ন ধরনের সচেতনতা কর্মসূচীও। রাজ্য সরকারের এই কর্মসূচীকে সফল করতেই আমাদের এই প্রচেষ্টা।

তিনি আরও জানান, কর্পোরেশনে পরিকল্পনা নেওয়া হচ্ছে যেভাবে পচনশীল ও অপচনশীল বর্জ্যকে বাড়ি বাড়ি গিয়ে কর্পোশেনের কর্মীরা সংগ্রহ করেন, ঠিক সেভাবেই বর্জ্য প্লাস্টিককে আলাদাভাবে সংগ্রহ করা হবে। এবিষয়ে নাগরিকদের সচেতন করা হবে। তাঁরা এই প্লাস্টিককে আলাদাভাবে জমা করবেন। তাঁদের থেকে ওজন করে নির্দিষ্ট মূল্যে এই প্লাস্টিক কেনা হবে এবং সংশ্লিষ্ট সংস্থাগুলিকে এই প্লাস্টিক বিক্রি করা হবে। প্রথম দফায় পাইলট প্রজেক্টের জন্য খরচ হচ্ছে সাত লক্ষ টাকা। ইন্ডিয়ান সেন্টার ফর প্লাস্টিক ইন দ্য এনভায়রনমেন্টের কারিগরি সহায়তায় এই প্রকল্পের কাজ শুরু হয়েছে। পূর্ব ভারতে এটি দ্বিতীয় প্রকল্প। প্রথমটি হয় এক বছর আগে কল্যাণী পৌরসভায়।

ইন্ডিয়ান সেন্টার ফর প্লাস্টিক ইন দ্য এনভায়রনমেন্ট-এর সিনিয়র টেকনিক্যাল ম্যানেজার তুষারকান্তি বন্দ্যোপাধ্যায় জানান, বর্জ্য প্লাস্টিককে রাস্তা তৈরির কাজে লাগালে ১০ শতাংশ বিটুমিন (পিচ) কম লাগে। ফলে খরচ কমে যায় ১৫ শতাংশ এবং রাস্তার জল প্রতিরোধী ক্ষমতা বৃদ্ধি পায়। পাথর এবং পিচ উভয়ের মধ্যেই বর্জ্য প্লাস্টিক ফ্লেক (গুঁড়ো) ১৫০ থেকে ১৮০ ডিগ্রি সেন্টিগ্রেড উত্তাপে মিশিয়ে নিতে হয়। এর ব্যবহারে পাথর এবং পিচে জল প্রতিরোধী আধার তৈরি হয়। শহরাঞ্চল ও গ্রামাঞ্চলে এলাকায় বর্ষার জল জমার প্রবণতা রয়েছে এবং বন্যাপ্রবণ এলাকায় এই পদ্ধতিতে রাস্তা তৈরি খুবই উপযোগী। এর ফলে প্রবল বর্ষণে এবং জমা জলের কারণে রাস্তার বিটুমিন (পিচ) স্তর সহজে উঠে যাবে না। পাশাপাশি বর্জ্য প্লাস্টিককে কাজে লাগানোর ফলে দূষণও কমবে।

*চন্দননগর পৌরনিগমে বুধবার শুরু হলো পিচ ও পাথরের সঙ্গে বর্জ্য প্লাস্টিকের গুঁড়ো মিশিয়ে রাস্তা তৈরির কাজ। এতে কমবে দূষণ, রাস্তা হবে জল প্রতিরোধী এবং মজবুত। ছবি : প্রলয় হাজরা*

বুধবার চন্দননগর পৌরনিগমের এই প্রকল্পের সূচনা করেন মেয়র অমিয় দাশ। উপস্থিত ছিলেন মেয়র পরিষদের সদস্য স্নেহাংশু বিশ্বাস, ইন্ডিয়ান সেন্টার ফর প্লাস্টিক ইন দ্য এনভায়রনমেন্টের বরিষ্ঠ কারিগরি প্রবন্ধক তুষারকান্তি বন্দ্যোপাধ্যায়, সংস্থার মুখ্য কারিগরি বিশেষজ্ঞ তিমির ব্যানার্জি, কর্পোরেশনের মুখ্য বাস্তুকার মধুসূদন চক্রবর্তী প্রমুখ।

# NATIONAL AND INTERNATIONAL EXHIBITIONS AND CONFERENCES

**PLASTEC MIDWEST – September 28 – 30, 2010** at Donald E Stephens Convention Centre. For details contact : Canon Communications, Los Angeles, USA. Tel: 310-996-9454, 310-4-454200; Fax: 310-4-454299; E-mail: plminfo@cancom.com

**K – 2010 – October 27 – November 03, 2010** at Dusseldorf Exhibition Centre, Germany. For details contact : Tel: Messe Dusseldorf GmbH, Messeplatz, Germany. Tel: (49)-(211) 4560900/4560175; Fax: 4560668/4560740, E-mail: k-online@messe-dusseldorf.de; Website: www.k-online.de

# SATISFACTORY REPORT ISSUED BY KALYANI MUNICIPALITY FOR CONSTRUCTION OF ROAD USING PLASTICS WASTE MIXED WITH BITUMEN

## Office Of The

# KALYANI MUNICIPALITY

Ph. (033)2582 8455, 9569, 9570 Fax (033)2582 8630

City Centre Complex : Kalyani : Nadia : West Bengal : PIN-741235

No. 10935/KM Date : 25 / 3 /2010

From : Shantanu Jha
Chairman

To : **Mr. Sourabh Khemani**
**President**
**Indian Plastics Federation**
**8B Royd Street, 1st floor**
**Kolkata – 700 016**

Ref : **Your no.300/IPF-47C/2009 dt.23.02.2010.**

Sub : **Report on the pilot project on the use of Waste Plastic as ingredients for the construction of bitumen road at Kalyani.**

Sir,

Pursuant to above this is to inform you that since the implementation of waste plastic as ingredients for bituminous road constructional work at Kalyani – Vidyasagar Manch to I.O.C. Plant – no complain has been raised from any corner as yet. More, the constructed portion as above appears to be much smoother than the other roads constructed and or maintained without waste plastic as ingredients.

Yours faithfully,

Chairman
Kalyani Municipality

# Agricultural Waste

The agricultural sector in the European Union generates some 1,06 million tons of waste each year which includes 274,A00 tons of packaging and non-packaging plastics waste. Of these plastics an estimated 32% are agricultural plastics films which are used for

applications such as silage wrap, mulch films and crop covers. Therefore the total agricultural plastics film waste stream is estimated to be 88,000 tons. Agricultural plastic film waste stream has proven to be difficult to recycle commercially due to two main factors: the waste is highly contaminated (typically more than 60% of recyclate weight is contamination such as soil and grass), the waste is geographically extremely dispersed.

Therefore the transport costs associated with recycling are relatively high and it is this that limits the commercial success of recycling schemes with many across the EU requiring additional financial support in order to be sustainable. As a result many farmers use disposal methods that do not take advantage of the latent value of the recyclates and are environmentally harmful. The START (Stretching & Turbulent Air Ribbon Technology) project aims to achieve increased stability and growth within the agricultural plastics recycling sector by significantly reducing the transport costs and making recycling schemes economically and environmentally sustainable. Financed by the European Commission within the seventh Framework Programme, the project is managed by a research consortium including 10 partners.

The project aims to surpass the current state-of-the-art by significantly improving the recycling process of agricultural LDPE films in regards to transport and cost efficiency. This will be achieved by undertaking developments in on-farm recycling technologies to design a mechanical system which will be retro-fitted to

waste collection vehicles. This system will remove contaminants and compress agricultural plastic film waste

before removal from farms in order to reduce transport requirements.

To achieve this aim, the consortium will have to further develop mechanical methods for removing contaminants and separating them from the polymers. The system will utilise a number of inherent properties of the LDPE films, not used by current technologies that rely on shredding of polymer films before cleaning.

This system will use air flow rather than water to remove contaminants from the film and will consist of a pre-cutting stage that will allow the films to be subsequently stretched. This is in order to create differential strains between the film surface and the adhering contaminants and greatly reduce the film contaminant adherence.

These films are then passed through a turbulent air flow that will remove remaining contaminants after which the

plastics and contaminants will be separated and the plastic film residue compressed. The technology will allow:

reduction of mass of recycled waste being transported by more than 50ou", reduction in transport costs and energy by more than 40%, reduction of the amount of agricultural waste going to landfill by more than 30,000 tons per year after S-years following the completion of the project.

# Reversal of tide

**'Waste not, want not', (with regards to the environment, especially) may be the fundamental philosophy of recycling, but it is also plainly good economics, mostly.**

Of course, wars are never won or lost in isolation but through battles on multiple fronts. In the plastics industry, recycling capacity and demand for recycled materials continue to grow and exceed the volume of waste

Mountain equipment manufacturer Millet is working with Rhodia to recycle its mountain ropes into PA

plastics collected each year, says Global Industry Analysts in its, plastic Bottle Recycling: A Global Strategic Business report.

Across the globe, owing to the enhanced benefits displayed over metals and other materials, plastics is enjoying an explosion of demand to find applications in a wide range of industries, making recycling of plastic products, which used to end up at landfiils or incinerators, of vital importance. And after years of predictions that plastics recycling would never be widespread because processes were inefficient, too expensive or not practical, the tide of waste is slowly being turned.

Rubber/ plastics products manufacturer contiTech is utitising PE foam discards from its hose production in the UK to be recycled into stuffing for use in teddy bears. The company claims that the amount of foam scrap that would accumulate annually would decline by 2 tonnes, or roughly 20o cu m

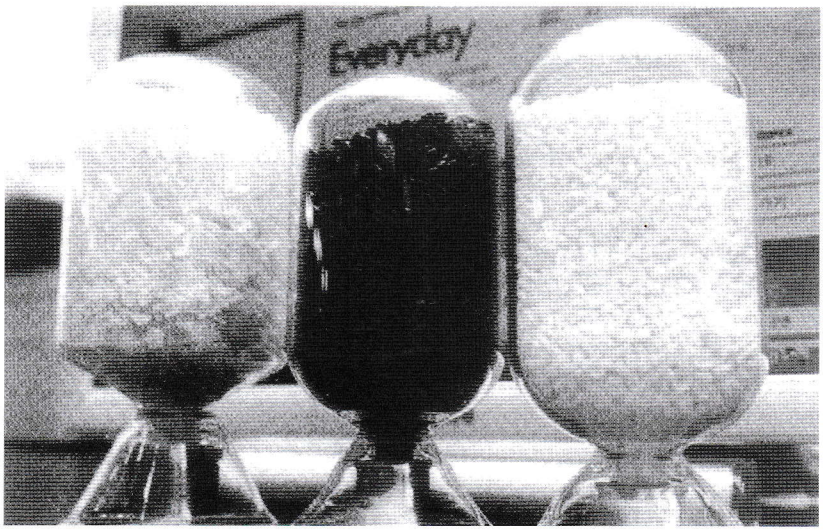
Asia Pacific is the largest as well as the fastest growing market for PET plastic bottle recycling. PET material tops the list due to the ease it can be recycled by different ways, with R&D continuing to focus on the possibilities of grades for the production of injection mouldable, extrudable and thermoformable resins.

Recycled PET (PET) is predominantly consumed as fibre for textiles and carpets, while recycled HDPE is consumed in the manufacture of bottles. New end use applications such as corrugated paper coating, waterproof shipping containers and other food packaging, impel the demand growth for rPET Growing popularity of plastic lumber and garden plastic products chairs and fences, meanwhile spur the growth of recycled HDPE plastics.

## Better quality rPET with new process

Over the past decade, attempts have been undertaken to mix rPET with chain extenders to improve its molecular weight and melt viscosity or to blend with other polymers to convert it into high-performance engineering plastics. But so far, most of the rPET that has emerged has been used for low-end products.

Encouragingly, a breakthrough has been achieved by South Korea's Samsung Cheil that




Samsung Cheil has found a way to produce high quatity rPET material hy combining it with-ABS, for use in electronic products. It claims that companies like HP Lenovo, Dell and Samsung are already using recycled material to manufacture LCD monitors (a 19 in. monitor uses 29 water bottles)

promises an easier and more effective way to use rPET in the making of electronic products. The conversion of rPET flakes into polymers with high-notched impact strength (toughness) is undertaken by blending with a functionalized ABS. Waste PET was selected due to its properties like transparency and high resistance to contamination by chemicals, it says. The Green Community (GC) series is offered in numerous grades as a biomass (PLA) mixture and with thermal and surface properties (heat resistance and anti_ scratch) as well as for specific applications, for example for pipe extrusion.

Samsung Cheil claims that last year it used more than 16 million water bottles to make the GC series and is well on its way to doubling that goal this year.

## Chinese continue to support industry

One thing about economics is that resources are priced against opportunity cost. So that if new

materials were to be cheaper than their recycled equivalents then it makes no sense to recycle, not to mention the guilt trips to which consumers a re subjected.

Thus, it makes for an interesting read the findings of a recent survey by Britain's WRAP (Waste & Resources Action Programme) on the outlook for exports of the country's recovered paper and plastics to China. "The China Market Sentiment survey, the first of its kind conducted among Chinese reprocessors. Showed they are likely to continue buying UK materials despite the economic downturn. "says the organisation. Over 100 paper reprocessors and 100 plastics reprocessors in China were interviewed, revealing the types of materials the Chinese buy as well as what the recycled paper and plastics are turned into, it adds. If nothing else, the news reaffirms the big business recycling is - a global one in fact.

UK trade in recovered material with China has exploded over the last ten years, according lo WRAP. Exports to

China for recycling have risen from a few thousand tones in 1999 to 517,000 tonnes of recovered plastics in 2008. "It is a key end-market for our recovered materials – accounting for 80% of the UK's exports of recovered plastics," it notes. The plastics reprocessors surveyed mostly reprocessed film as well as PET bottles and PP products. These get made into pellets that are then turned into plastic films, household and electrical goods, textiles and toys.

## Tall order for games

Meanwhile, bordering on being philosophical, the Olympic Delivery Authority and the London Organising Committee have insisted that suppliers of PVC fabrics for temporary use in the construction of the 2012 Olympic Games site provide "sustainable" credentials and meet other environmental criteria.

The policy is an extension of the sustainable sourcing they have agreed with suppliers of timber, aggregates and concrete to the PVC tensile fabrics and membranes needed to "wrap" temporary buildings. Such as the basketball arena, and the temporary element of permanent buildings such as the Olympic stadium. "This includes working with suppliers to achieve an aspiration for recycled content, avoidance of phthalate plasticisers, and seeking guarantees from PVC suppliers or manufacturers for take-back systems to ensure that the PVC will be re-used or recycled after 2012," according to a statement.

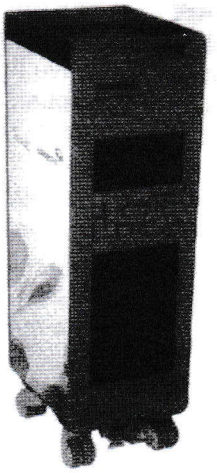
## Chance for closed-loop recycling

French companies Rhodia Polyamide and Millet have launched an initial project aimed at recycling used mountain climbing rope into material for the manufacture of mountain sports equipment. Polyamide (PA) producer Rhodia's objective is to develop a range of its 4ea rth recycled PA grades.

Elsewhere, morale-boosting triumphs are also being chalked up for the cause of recycling. Japan's Mazda has developed what it says is a world-first recycling technology to process old vehicle bumpers into raw resin for use in new bumpers.

Mazda is an industry leader in the recycling of bumpers but, until now, only of its own make of vehicles. With the new technology, it can recycle all types and makes of bumpers, thus removing the need for separate collection systems for each car maker's products.

Additionally, by automating processes to remove metal attachments and combining all the recycling stages involved in crushing used bumpers through to reproducing raw materials, it significantly increases efficiency.



Previously, unwanted materials such as metal attachments had to be removed manually and the bumpers were visually inspected, both highly labour intensive processes. In collaboration with Satake, Mazda has found a way to automate the processes that see old bumpers first being crushed into pellets, then have unwanted metal pieces removed by shaking the pellets and directing airflow over them. This is reminiscent of the separation of contaminants from cereal grains by machines. In addition, Mazda's new technology, unlike before, now allows all bumpers to be recycled together, by employing a kneading machine. It applies a powerful shear force to the crushed bumper pellets, effectively stripping off the paint of the plastic, regardless of the composition or adhesive properties, and without having to use heat.

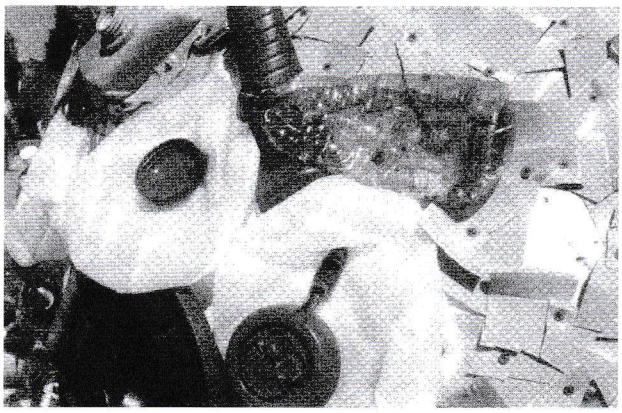
Finally, another suggestion that recycling may be reaching new heights comes with news of the introduction by Netherlands-based AeroCat of the airline industry's first recyclable catering trolley with a virtually all-plastic design.

The Tigris trolley, made of injection and extrusion grades of polyphenylsulfone (PPS) resin ,from Salvay Advanced Polymers, weighs 17 kg and is claimed to be the lightest in the industry. It boasts a 25o/. weight reduction over conventional aluminium trolleys, thus affording airlines a significant payload reduction and fuel savings. The all-plastic design also facilitates closed-loop recycling after the trolley's estimated ten-year lifetime. Tests reveal that reground PPS resin maintains its physical properties and can be used in a 1Q0% recycled formulation or blended with virgin resin.

# 'Tremendous future' for plastics recycling

**Despite the turmoil witnessed across the commodity spectrum since October last year, the Chairman of BIR's Plastics Committee was unashamedly optimistic about what lies ahead for plastics recycling. At the same meeting, it was suggested that,there is an urgent need for more action on recycling in the Middle East.**

The negative market sentiment of late last year proved to be something of an 'over-reaction', said Surenora Borad of Belgium-based Gemini Corporarion NV in his Chairman's address to the BIR Plastics Committee meeting in Dubai. The plastics recycling industry has withstood the global economic downturn better than many other commodities and better than had been feared at the time of the previous BIR Convention last October, he argued.



And with the business 'booming' in certain developing countries, he went further " I believe plastics recycling has a tremendous future. There is plenty of business for all of us - in trade, transfer of technology and joint ventures.' Growth in the sector outstripping GDP, he stated.

Mr Borad acknowledged that the industry - in common with virtually all others - has endured a tumultuous few months. However, he suggested that the worst may now be over

BIR's Plastics Committee Chairman Surendra Borad of Belgium based Gemini Corporation

Peter Daalder of Daly Plastics in the Netherlands (left) and Jacque Musa of Veolia Proprete France Recycling

and pointed to an improvement in scrap prices, partly because traders in :Europe have chosen to hold material in. stock rather than sell at 'panic' prices.

## Notification problem

In dissecting individual markets, Mr Borad confirmed that recent months have been far from worry free. In his report on developments. in India, for example, he drew attention to a reduction in demand from some quarters and to problems in getting notification approvals, in particular for exports of plastics scrap from Germany'. On a positive note, however, India's proposed pre-inspection controls on recovered paper and scrap metal do not appear to have been extended to secondary plastics, although some customs clearance difficulties have been reported at the leading port of Nhava Sheva.

Turning to the US market, the Plastics Committee's Chairman pointed to a recent upturn in scrap prices and to an easing of container availability problems. problems. 'Small' scrap price increases were report for Australia, as well as healthy demand from China in particular. Traders in Hong Kong, meanwhile, have been providing New Zealand's exporters with steady-to-strong' demand. In a brief aside on the Italian market, Mr Board highlighted a decline in domestic PET prices. Italy's packaging recovery organisation Conai has been forced to ask bottlers for an increase of around 40% in their contributions, with an even more substantial hike planned for July I.

## Reduced or cancelled cover

Elsewhere in Europe, French plastics recyclers have sustained a 50% drop in orders when compared to the corresponding period last year, with credit insurance companies adding to the sector's problems by reducing or canceling' financial cover, according to Jacques Musa of Veolia Proprete France Recycling. Meanwhile, some new buyers in China have maintained a strong presence in the marketplace since late April, he informed delegates.

Reporting on the Dutch and German markets, Peter Daalder of Daly Plastics in the Nerherlands highlighted the unpredictability of buyers in China, many of whom have been jumping from one supplier t0 another. Having noted that overseas sales prices almost tripled between November 2008 and April this year, the speaker contended that the export market is 'over the top' and ripe for a correction. According to Mr Daalder, plastics recyclers in Europe are operating at only 50% of their capacity.

## Not doing enough

Rajnish Sinha, General Manager of Horizon Technologies FZE of the United Arab Emirates (UAE), identified the Middle East as one of the world's largest consumers of plastics. At present, however, the region 'is not doing nearly enough to recycle plastic', he said in his guest presentation to the Plastics Committee meeting. 'Many Gulf Cooperation Council countries have placed recycling very high on the list of waste management priorities - and this step comes not a moment too soon,' he said, 'Quantities of waste are rocketing as the "throw-away" approach of places with hectic lifestyles like Dubai ,spreads across the Middle East.'

A number of major corporate brands - including Coca-Cola and Marks & Spencer - have ensured some progress in this area, he noted, by switching to the use of recycled PET for a variety of packaging products. Mr Sinha underlined that imports of plastics scrap are currently banned in the UAE but that attempts are being made to secure a temporary inflow. It will be perhaps a year or a year and a half before we become self-sufficient,' he added.

*Source : Plastics News*

# CREATIVE WAYS TO USE PLASTIC GROCERY BAGS

***A little request : Before you discard (or even recycle) another plastic bag, consider trying some of these ideas:***

1. Save money by using plastic bags as trash can liners.

2. Don't buy expensive mailing fillers. Save plastic bags to protect and keep items from moving around.

3. Use plastic bags to protect Christmas decorations while storing.

4. Keep a couple plastic bags in a diaper bag for soiled clothing.

5. When traveling, use plastic bags in your suitcases for dirty underclothes.

6. Place your wet swim suits or other wet clothing inside plastic bags until you arrive home and can launder or hang out to dry.

7. When away from home, put dirty shoes or boots in a bag so you don't get dirt in your car. (That's assuming you have other shoes to wear.)

8. Place disposable diapers in a bag before tossing in the diaper pail. It helps diminish odors somewhat.

9. Keep several in your car, especially if you have children. If someone gets unexpectedly sick while on the highway and you're unable to stop, use double bags. You can knot and dispose–better in the bag than all over the car.

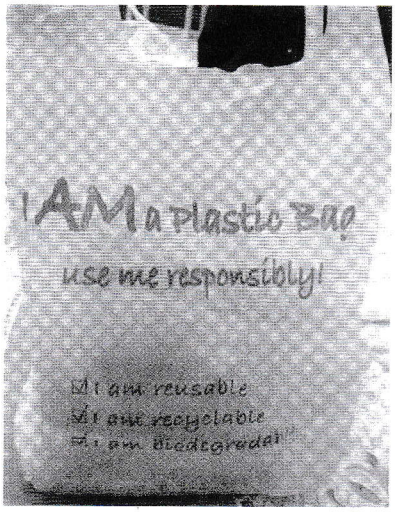
10. Use for puzzles or other items which have small parts that may get lost. My elementary-age sons enjoy putting together (and taking apart) 500-piece puzzles. Unfortunately, some of the puzzle boxes have become worn out. I keep the puzzles in the boxes with a rubber band around the box. To prevent pieces from falling out and getting lost, I then place the puzzle inside a bag.

11. Place food inside a plastic bag before packing in a lunch bag. Even "airtight" containers can leak, especially if the lid is not on tightly.

12. Put sippy cups (even "spill-proof" ones) in a bag to prevent accidental spills in the diaper bag.

13. For easy cleanup, place a plastic bag inside a bucket or pot next to your sink when you peel fruits or vegetables. You can quickly dispose of the bag or place peelings in a compost pile.

14. Double line a bucket with plastic bags. When removing the skin and fat (or even bones) from chicken or other meat, place in bags for easy cleanup.




15. Place frozen ice packs in a plastic bags to prevent condensation from "puddling" in your lunch bag. When we travel, we freeze some water in our water bottles before filling them up with cold water. The bottles produce so much condensation, that it looks like a little lake in our cup dispensers. To prevent that, pack water bottles in a plastic bag.

16. Use for organization in a deep freezer. I stock up on frozen vegetables and place like vegetables together in a plastic bag. (Rotate by putting newest vegetables on the bottom of the bag.) I usually place my vegetables in the freezer in alphabetical order. Doing this helps me know exactly where to find certain vegetables. You can also use various colored bags to sort vegetables.

I like using bags to ensure no vegetables get "lost" in the freezer. Plus, I know exactly how many bags I have of each item, and unloading the freezer to defrost and clean is so much easier. Another hint is to list the contents of your deep freezer on a magnetic dry erase board (or keep a paper on top with a magnet). Every time you take out something, delete an item from the list. If you are diligent about this, you will know exactly what needs replacing when you go to the store.

17. When defrosting meats, place a paper towel in a plastic bag and put meats in the bag to prevent messy leaks and cleanups.

18. In the winter, use plastic bags over your children's snow boots to keep feet drier.

19. Carry a couple bags with you while you walk. You can use it to pick up trash and then dispose.

20. Take bags to the grocery store to reuse instead of getting new ones each time.

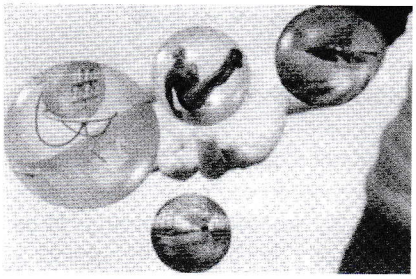
21. Donate bags to food pantries, used book stores, libraries, thrift shops, or other organizations. Instead of stuffing all the bags into one bag, flatten the plastic bags, fold them in half, and place in another plastic bag before donating.

22. Fill several bags with food or other items for a needy family. (This is one of the most rewarding ways to use those bags!)

23. If those bags are still overflowing in your closet, deposit the extras in a recycle bin at your local store.

*Source : TAPMA - Polymer Business*

# WHAT IF... PLASTICS VANISHED?



How reliant are we on plastics and what would happen if this much used, and often much accused material simply vanished? How far backwards would civilisation fall?

Plastics sit at the heart of our modern, technology driven society and make life for most of the developed world a lot easier but what of this 'magical' substance disappeared?

Let's take a stroll into this fictional plastics-free world attacked by a mysterious bacterium that destroys the chemical make-up of plastics.

It would all start quite harmlessly with rubbish bags tearing again and again, bewildered shoppers' watch helplessly as the content of their bags spills on the floor; usual lines of communications are beginning to fail; internet can't make connections; phone connections fade and die as well as TV and computer screens.

Can this get any worse? You be it does! motorcars stop as fuel tanks full of holes leak petrol over the roads. Supermarkets wouldn't have any deliveries and most of the food would perish due to defective packaging. Cleaning products and shampoos leak like greasy sauces from their ineffective bottles and clothes are starting to fall to pieces.

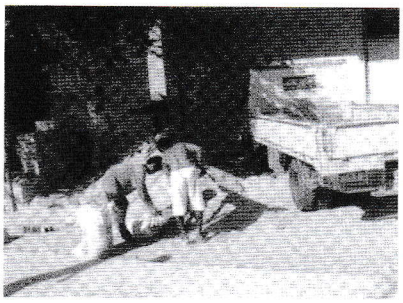
Is there a need to mention DVDs and CDs become unusable overnight? The going gets tough with PVC floorings and window frames dissolving, water supply systems collapsing due to holes in pipes. Meanwhile almost all electric cables would become unusable.

How about health care? Hospital operations become impossible; Disposable syringes, test sticks, tubes – most of the articles in hospitals and doctors' surgeries consist of plastic components. The blood held in PVC bags is wasted as it meets the air and touches contaminated surfaces.

**Road construction using plastic waste begins**

Though a belated move, experiment with using plastic waste in road construction, as one of the solutions to plastic waste disposal has finally begun in West Bengal. Such experiments are already underway in Tamil Nadu, Karnataka and Maharashtra.

Leading the initiative is Indian Plastic Federation (IPF) which for sometime has been eying suitable partners to undertake the experiment.



Under the joint initiative, the project will be executed by Kalyani municipality with technology support from IPF.

For starters, a 1 km road within the Kalyani municipality area will be laid using polymer blended bitumen. One of the unique features of the project is that waste laminated plastic bags/ pouches, largely used for food packaging, would be used for the first time in road construction.

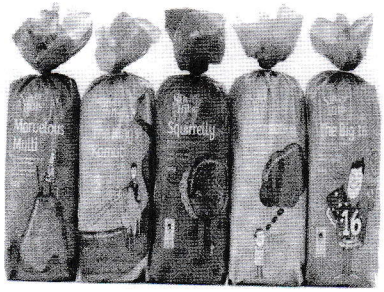
IPF president KK Seksaria said the industry body, representing plastic goods manufacturers, is keen to see the success of the project to spread the scheme to other municipalities.

Using of plastic waste to the extent of 10-15% of the total concrete mix, inclusive of bitumen, would save road construction cost significantly with bitumen price moving currently between Rs 35-40 per kg.

Earlier, similar such experiments on a mini scale has been undertaken at IIT (Kharagpur) campus and within the area of Haldia Petrochemicals.

The technology for blending polymer with bitumen in road has been pioneered by Dr. R Vasudevan, head, department of chemical engineering, Madurai University. Later, the Delhi-based Indian Centre for Plastics in Environment has come forward to spread the technology across the country.

**Bread packaging with real personality**



When most people think of packaging for whole grain, nuts-and-oats, healthful types of bread, the look is pretty well set – calm, clean design elements accented with folksy types of illustrations ... wheat, barns, amish villagers, grain mills, etc. etc. etc.

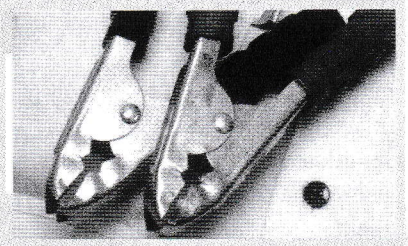
But Silver Hills Bakery and DDB Canada division Karacters Design Group have proven that it doesn't have to be that way. It's an interesting story of how a bit of insight and the willingness to be adventuresome result in a fun, attention-getting design.

The re-branded packaging has a distinct shelf presence that beckons to be picked up and examined. Using solid, matte colours, which are unusual for the category, the colourful, biodegradable bags include witty illustrations by Robert Hanson. The lighthearted illustrations evoke the new names visually and cleverly incorporate captivating bread windows to display the product.

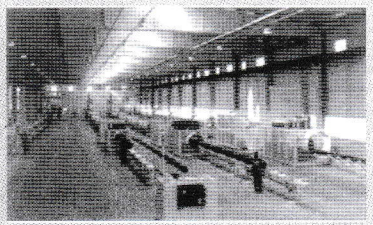
*Source : TAPMA - Polymer Business*

• Putnam pushes urethane tubing thinner, wider, and softer
• Cast urethane makes its case; and more.

• TPE overmolds onto copper without degradation
• Elastomer combines ultrasoft touch with robust physical properties
• Improved Barex makes for crystal-clear cosmetics packaging
• Two HDPE rotomolding grades launched
• Nanoparticle additive enters commercial market
• Nanotechnology lightens, strengthens SMC trunk; and more.



• Reifenhäuser's acquisition of Kiefel Extrusion changes landscape
• Turkish pipe, profile processor adds a dozen to its machine park
• New concept touted for 4K parts
• Recycler trades up to stay on the cutting edge
• MOD carts away second Leonardo; and more.



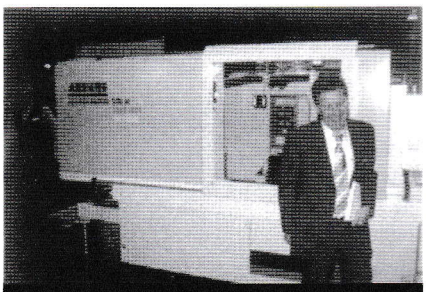
# Tiny town welcoming big machine developments

**By Matt Defosse**

**With NPE only recently ended, you might not expect much new equipment or processing technology to be revealed at Fakuma, the big injection molding show in Germany's small town of Friedrichshafen. You'd err.**

Maybe the manufacturers needed those few post-NPE months to get these processing cells tuned, or maybe it's simply a cost-saving move: Many of the leading machine OEMs are within a few hours' drive of Friedrichshafen, which hosts Fakuma from Oct. 13-17. Plus, the European molding machine market is about three to four times the size of that of North America. Regardless of the reasoning, the show once again will be a feast for injection molders.

The evidence? Exhibit A comes from Arburg (Lossburg, Germany), which early this year rolled out its new take on hybrid machines with its Hidrive range (search for "new take on hybrids" at plasticstoday.com/mpw). The Hidrive-equipped press running at Fakuma, an Allrounder 520 H with a clamping force of 1500 kN and a size 800 injection unit, will run a 32-cavity mold with a full hot runner system, processing polypropylene (PP) syringe barrels in 6-second cycles.



Herbert Kraibühler, Arburg's technical director, is plenty pleased with the company's new Hidrive line.

Of the manufacturer's nine presses at the show, five will belong to the Allrounder All-drive (fully electric) or the Hidrive ranges.

Meanwhile, Engel plans to make a splash with multiple new developments, among them two new models: a fully electric e-motion 310/100 T press for clean-room molding and an Engel victory 160 ecodrive. The former will process PP pipette tips on 6-second cycles; this will include injection plus camera-monitored QC and their placement on racks sorted by cavity. The latter machine replaces the 150-tonne size and, reports Engel, offers more space and flexibility. Engel says the victory 160 is the first fully hydraulic injection molding machine with the company's servo-hydraulic ecodrive. Also new at Engel will be the first of its viper robots' range.

KraussMaffei (Munich, Germany) will be hyping its thin-walled packaging strength on an all-electric molding machine, an EX 160-1000 fitted with the company's Ultra injection unit, processing inmold-labeled PP (IML-PP) food containers in a two-cavity mold. An SR80 side-entry robot inserts the label bands in the mold, removes the finished containers from the non-operator side, and stacks them on a conveyor belt.

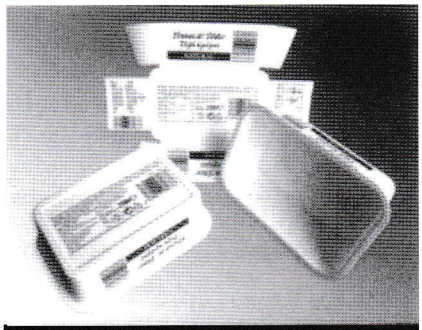
At the stand of Wittmann Battenfeld (Vienna and Kottingbrun, Austria), visitors will be able to catch a first glimpse of the company's new entry into the all-electric machine competition, dubbed the EcoPower Series. Battenfeld had many years of all-electric manufacturing experience but halted production of these; in early 2008 auxiliary and robot equipment manufacturer Wittmann acquired the company.

Netstal (Näfels, Switzerland) will bring three presses to the event, including a thin-walled IML-PP packaging application on an Evos 3500-2000. Netstal introduced its

Evos concept at K 2007 but has tinkered with it since; the Evos now is available with clamping forces from 3000-5500 kN.

Based on a hybrid drive technology, all axes on the Evos machines are individually and digitally closed loop controlled; this includes even secondary movements such as nozzle contact pressing. According to Netstal, all of this control makes for better process control and more precise and repeatable molding.

Driving in from Malterdingen, Germany is the team from Ferromatik Milacron, who promise to be running one of the company's new Vitesse 300 presses, called "the fastest injection molding machines available" by the company's Robert Trube, director sales and marketing. What more can one say? Well, the machines, first shown at an open house earlier this year and reported in a May *NewsFeed* newsletter (search for "Ferromatik in fast lane with Vitesse" at plasticstoday.com/mpw), are equipped with an electric screw drive for parallel functions, which Ferromatik says is the driving force behind those short cycle



Netstal's Evos machine promises to pump out plenty of IML-PP containers.

times. Stability is provided via a reinforced machine base with linear guides.

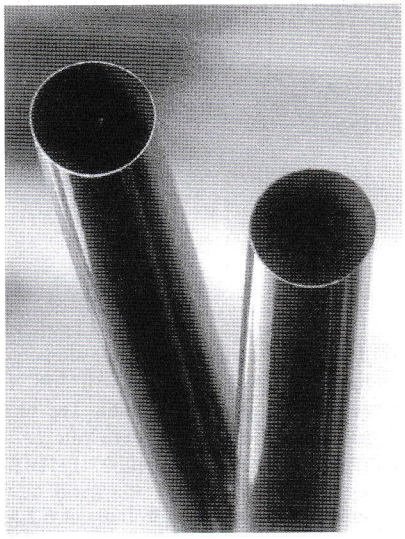
We'll report later with more detail on these as well as other innovations from Fakuma. The show, like most, has suffered somewhat in the current economic climate. From the exhibitor list in mid-September, it appeared only one Italian molding machine maker, BMB, would exhibit, and Husky and Haitian (and its Zhafir subsidiary in Germany) are no-shows. But with more than 1000 exhibitors, including many of Europe's best moldmakers, MPW's staff there won't lack for things to see.

PIPE AND PROFILE EXTRUSION

# Putnam pushes urethane tubing thinner, wider, and softer

**By Tony Deligio**

Minimally invasive devices continue to test the limits of medical polymer tubing, and Putnam Plastics Co. (Dayville, CT) says it has responded with a technology to create thin-walled, large-diameter, low-durometer urethane extrusions. The minimally invasive movement in surgery is forcing device engineers to fit a greater amount of technology through a smaller working channel. Byron Flagg, product manager extrusion and finishing at Putnam, says while the operational requirements of the tubing are a natural fit for thermoplastic urethane, the material poses some extrusion challenges. Flagg notes that as diameters increase and wall thickness and durometer decrease, the extrusion process can become unstable. That instability can result in a wider tolerance range and lower yield rates, leading device developers to compromise their designs. In addition to challenges during manufacture, in post-fabrication such extrusions can be difficult to handle without contamination or damage.



**Tooling and downstream handling advances have allowed Putnam Plastics to create TPU-based tubing that has thinner walls, larger diameters, and a lower durometer.**

While he can't offer specific details on the proprietary process Putnam has employed to overcome these challenges, Flagg did tell MPW that the trade secrets involved begin with the custom extrusion tooling and continue with downstream equipment and processes that "enhance and preserve the dimensional integrity of the extrusions." Flagg says the process is compatible with standard medical-grade thermoplastic resins such as Lubrizol's TecoFlex or Dow's Pellethane, and that it utilizes a single-screw extruder.

The company says greater process stability results in a larger design envelope, while improved material handling reduces costs by increasing yields and product quality. Putnam offers the example of an 80 Shore A durometer urethane extrusion with a diameter greater than 0.5 inch (12.7 mm). The company says that if the minimum, feasible wall thickness had previously been 0.015 inch (0.38 mm), it can now be reduced to 0.003 inch (0.08 mm). Likewise, if the outer-dimension (OD) tolerance had previously been ±0.010 inch (0.25 mm), it can now be trimmed to ±0.002 inch (0.05 mm).

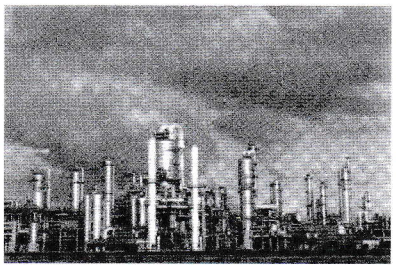
The company says that while the new capability is applicable across a range of custom extrusion designs, the greatest impact can be seen in tubes with ODs greater than 0.500 inch and wall thicknesses of less than 0.015 inch, with urethane durometers lower than 90 Shore A.

Earlier this year, MPW highlighted a Putnam technology dubbed Total Intermittent Extrusion (TIE; search for "The complexity of medical tubing" at plasticstoday.com/mpw). The company says this proprietary technology differs from this latest advance, and instead allows tubing to be extruded with variable durometers along the length. When they spoke with MPW, Putman officials did say they were currently working on a next-generation TIE technology.

*Source : Modern Plastics*

# NEWS AROUND THE WORLD

**6.5% growth of petrochemical sector during Plan period 2007-12 misses target of 12%**



The volatility in crude oil and petrochem prices amid a global economic slowdown, has affected the growth of the petrochemical sector in India. The sector has recorded 6.5% growth rate in the Eleventh Five-Year Plan (2007-12) so far.

Polymer consumption in India at 6.2 mln tons is 3% of global consumption of about 200 mln tons. Per capita polymer consumption in India is 5.2 kg as compared to the world average is 25 kg. To boost the industry, the government has taken two major initiatives, including the announcement of a National Policy on Petrochemicals, and Petroleum, Chemicals and Petrochemical Investment Regions (PCPIRs).

The Policy aims to increase investment in the sector, both upstream and downstream, by creating quality infrastructure, increasing the domestic demand and per capita consumption of polymers and plastics, adding value to the domestic downstream plastic processing industry through modernisation, research and development, and achieving environmentally sustainable growth.

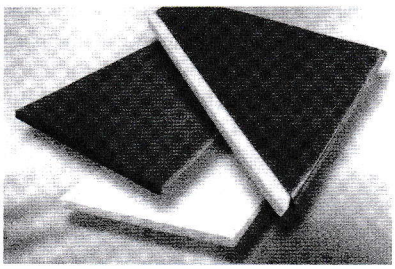
**Oil prices ended the week at US$77 a barrel on bearish economic data**

Oil prices ended the previous week at US$77 a barrel on the Nymex on bearish economic data that upset confidence about a potential recovery in energy demand. In London, Brent crude settled at US$75.20 a barrel.

Weaker consumer sentiments in USA for the month of October and a 0.5% dip in consumer spending in September served as a reminder that the economy is still struggling despite the previous days optimism about Q3-growth in USA.

Higher equities and a weaker dollar have pushed crude prices up 9% in October as investors looked to wider economic data for signs of economic recovery and a potential rise in energy demand.

**Expanded polyethylene for durable sports mats**



For durable, hard-wearing and safe sports mats, BASF offers Neopolen® E, an expanded polyethylene (EPE).

The lightweight foam can be used as core material for gym mats because it keeps its resilience and has an optimal energy absorption behavior even after heavy use. Lightweight gym mats are primarily used for floor exercises in school sports.

Neopolen E is a closed-cell, physically crosslinked particle foam made of polyethylene, which means that the number of connections between the individual molecules is higher than in the non-crosslinked material.

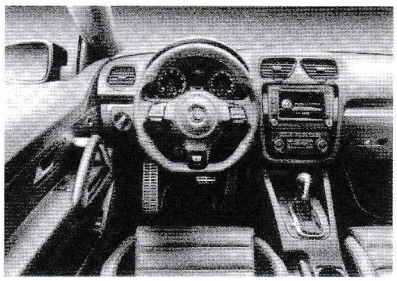
Because of this finer cell structure, mat cores made of Neopolen E are more stable and keep their shape longer. After loading, they absorb the energy and quickly revert to their original shape.

Gym mats made of Neopolen E weigh about four kilograms and are therefore around four times lighter than conventional sports mats that have a polyurethane composite foam core.

Neopolen E is a specialty foam with optimal cushioning, good resilience and high elasticity.

These properties make Neopolen E an ideal material for packaging, vehicle manufacturing as well as sports and leisure applications.

**PP LFRT with superior properties for automotive interior applications**



New grades of Celstran®+ PP long fiber reinforced thermoplastics (LFRT) have been unveiled by Ticona Engineering Polymers.

These grades are designed to outperform SMA resins and PC/ABS blends that are commonly used by North American OEMs to mold automotive instrument panels, air duct panels and reinforcement components.

They offer excellent processing properties that ensure uniform glass fiber distribution and a good surface finish.

The combination of mechanical properties, impact and creep resistance, and low warpage imparted by these LFRT products makes them ideal candidates for automotive components, such as instrument panels, door modules, interior trim, center consoles, front end modules or other applications that require large, strong, light weight components or assemblies.

These grades offer automotive OEMs several advantages:

- Weight and cost savings
- Optimal mechanical properties
- Improved creep resistance
- Improved impact performance
- Improved notched impact strength
- Superior tensile strength
- Greater load bearing capacity
- Increased sound dampening properties
- Low carbon emission

### Single serve packages to drive rigid plastic packaging global growth to 22%

The growing popularity of single-serving packages such as plastic bottles, cups and containers in a wider range of food applications; will help to drive global demand for rigid plastic packaging to 22% from US$129.2 bln in 2009 to US$158.3 bln in 2014, as per a study by Pira International.

Rigid plastic packaging will also benefit from manufactures' increasing preference for this material in place of traditional packaging such as paperboard, metal and glass containers. Bags and pouches are also likely to gain in popularity as brand-owners focus on promoting the environment-friendliness of their packaging materials.

### Researchers go bananas over plant fibers in plastics

A team of specialists at Queen's University Belfast is pioneering a technique to use banana plantation waste in the manufacture of rotationally molded plastic products.

The process of incorporating treated banana plant fibers in plastic molding is expected not only to reduce substantially the amount of polyethylene required, but also create jobs and benefit the environment, according to the university.

Around 20 percent of all bananas consumed in Europe are produced in Spain's Canary Islands, with 10 million banana plants grown annually in the island of Gran Canaria alone. When the fruit is harvested, the remains of the plant goes to waste. An estimated 25,000 metric tonnes of this natural plant fiber is dumped in ravines around the islands each year.

The project aims to make use of the plant material to improve a range of rotomolded products from wheelie bins and oil tanks through to plastic dolls, traffic cones and boats.

Banana plant fibers will be processed, treated and added to a mix of plastic material, and sandwiched between two thin layers of pure plastic providing excellent structural properties.

### Europe beats plastics packaging recycling target

The European region recycled 29 percent of all its plastics packaging in 2008, easily surpassing the European Union's target of 22.5 percent, according to a new report.

According to the report, 10 European countries — Germany, Estonia, the Czech Republic, Belgium, Sweden, Austria, Switzerland, Norway, the Netherlands and Slovenia — recycled more than 30 percent of their plastic packaging. Greece, Lithuania and Malta, on the other hand, recycled only about 10 percent.

In terms of plastics recovery, 51.3 percent of post-consumer plastic in Europe was recovered in 2008, with the rest going to disposal. Of the 51.3 percent recovered, 5.3 million metric tons (11.7 billion pounds) were recycled — as material and feedstock — and 7.5 million metric tons (16.5 billion pounds) were recovered as energy, according to the report.

In Europe, Germany is the major producer of plastics, accounting for 7.5 percent of global production, followed by Benelux (4.5 percent), France (3 percent), Italy (2 percent) and the United Kingdom (1.5 percent) and Spain (1.5 percent).

### PET film adds steel finish to keyboards

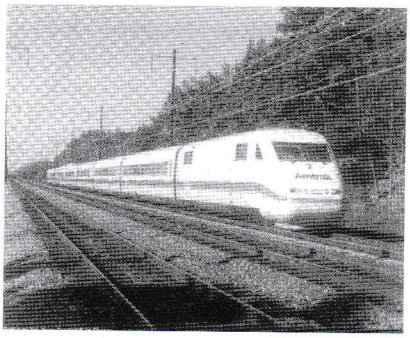
A new hardcoated PET film from MacDermid enables manufacturers to add a steel-look finish to keyboards but is easier to form and emboss than sheet metal, claims the manufacturer.

The Autotex Steel film is manufactured using a flexible PET substrate and is coated with an ink adhesion layer and a UV cured, hardcoat outer layer. The film is then reverse printed with metallic or silver inks to give the impression of brushed stainless steel.

The film, which can also be used for applications such as keypads and dashboards, offers several advantages over conventional steel materials, claims MacDermid.

Autotex Steel panels cost less to produce as the film can easily be embossed, and the film does not show fingerprints. And because the graphics are printed on the reverse of the film they are protected from wear and tear.

### Tailor-made polyurethane elastomer systems for American freight, passenger railway systems



The Dow Chemical Company will launch a portfolio of proven technologies for North American freight and passenger railway systems with it's tailor-made polyurethane elastomer systems.

By reinforcing ballast and controlling shock and vibration, Dow's technologies help to increase railway service life, improve passenger safety and comfort, and reduce noise pollution.

Traditional concrete or ballast rail systems are prone to vertical and horizontal shifting, vibrations, corrosion and heaving. This can lead to track misalignment, stray electrical

currents, unacceptable noise levels, passenger discomfort and safety concerns.

Dow polyurethane elastomers provide excellent track and ballast stability and noise absorption and are impervious to corrosion and moisture, helping to prolong track life and reduce maintenance and repair costs.

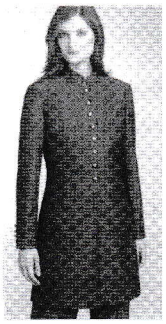
**Additional supplies to impact polypropylene prices in Asia**

Al-Waha Petrochemical Co. in Dubai has announced start up at its new complex, which includes a 450000 tpa polypropylene (PP) plant based on LyondellBasell's Spherizone process technology. Al-Waha is located in Al-Jubail Industrial City and was formed in 2006 as a 75:25 JV between Sahara Petrochemicals Co. and LyondellBasell.

Yanbu National Petrochemical (YANSAB)'s 400,000 tpa polypropylene plant that was started up in July and shuttered in the next month, is ready for restart. Yansab is the most recent affiliate of SABIC and is slated to be SABIC's largest petrochemical complex with capacity including 1.3 mln pa of ethylene, 400,000 tpa of propylene, 900,000 tpa of polyethylene, 400,000 tpa of polypropylene, 700,000 tpa of ethylene glycol; 250,000 tpa of benzene, xylene and toulene and 100,000 tpa of butene-1 and butene-2.

Additionally, three PP plants are scheduled for start up in China- Panjin Petrochemical with capacity to produce 250,000 tpa, Jinxi Petrochemical, part of CNPC, with capacity of 150,000 tpa and Da Tang Inner Mongolia with capacity to produce 460,000 tpa PP.

**Armani Meets Dasani: A Plastic Bottle Suit for Women**



Last year, Sears introduced the $200 EcoGIR suit for men—the world's first suit made from recycled PET bottles.

Now women get their own line of eco-suits with a comparatively inexpensive $80 Debenhams trouser combo made from recycled plastic bottles. The bottles in the suit are ground down into chips, which are melted, refined, and woven into a form of polyester. Each suit uses about 50 plastic bottles. The rough polyester feel of the Debenhams suit might not appeal to some customers, though it certainly allows for environmental bragging rights.

Debenhams says that its shirt and trousers save energy and reduce CO2 emissions. The overall energy required to melt and refine the plastic bottles is less than the energy used in traditional clothing production, but the process undeniably cuts down on landfill waste.

If the womens suit proves popular in stores, Debenhams will extend the recycled bottle line to menswear. Although an even more ideal solution might be to extend this line to the homeless: Insert 50 used plastic bottles into a machine at the grocery store and get a ready-made and pressed Debenhams suit from the other side.

**Battenfeld launches standard thermoforming sheet lines**

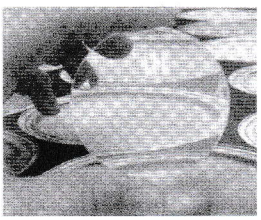
German machinery maker Battenfeld Extrusionstechnik has developed a new line of standardised thermforming sheet lines for inline processing applications.

Based on the bespoke high speed systems the company has supplied in the past, the new series is designed for PP, PS, ABS or PLA film and sheet extrusion and consists of an extruder and polishing stack.

The new high-speed extruders can reduce energy consumption by up to 50% compared to conventional models, claims Battenfeld. Other advantages include shorter dwell times and less stress on materials, high end product quality through optimal blending and faster colour or material changeovers, says the firm.

Output dimensions range from 330-1,300 kg/h for PP and 350-1,500 kg/h for PS, depending on the drive unit.

**LED lighting turns the focus on lens moulding**



Moulding of optical lenses presents specific challenges for producers due to relatively thick sections and extended cooling times. Now the growing interest in LED lighting technology in areas such as automotive is introducing these challenges to an entirely new market sector.

Injection moulding of automotive LED lenses was discussed by Professor Georg Steinbichler, Engel's R& D manager, at the Austrian injection moulding machinery maker's open house in the early summer. His presentation explained how multilayer moulding and dynamic cooling techniques can be used together or individually to cut lens moulding cycle times and improve optical performance through reduced internal stress.

Steinbichler also outlined the company's newly developed Compression Induced Solidification (CIS) technique for lens production, in which injection compression moulding at high pressure is combined with variothermal dynamic control of the mould temperature profile during the cycle.

Multilayer moulding can reduce overall cooling time when producing relatively thick lens components, while increasing use of light emitting diodes (LEDs) in areas such as automotive lighting is becoming an increasingly important consideration.

"The idea of producing lenses in an elastomer may initially sound a little unusual, as this market has been influenced by firm materials," says a KIMW spokesperson. "But facts such as transparency, unlikelihood of stress cracks and the possibility of efficiently producing complex geometries, even with undercuts, clearly speak for the great potential of high transparency LSR in the area of future optical systems."

*Source : TAPMA - Polymer Business*

## Dow makes energy-saving insulation and air sealing products environment friendly

Dow Chemical has concluded its two-year project to transform its line of energy-saving insulation and air sealing products to a more sustainable manufacturing technology in North America. The iconic Blue™ STYROFOAM™ insulation helps conserve energy and reduce carbon dioxide emissions from homes and buildings. Currently, the emissions from buildings and homes account for more than 40% of all greenhouse gas emissions.Dow claims to be the first insulation manufacturer in North America to develop a next-generation foaming agent solution to meet mandatory requirements. Dow has converted all production facilities in North America to the new foaming agent technology, which is zero ozone-depleting and contains no-VOCs (volatile organic compounds). STYROFOAM™ extruded polystyrene foam insulation is a part of the Dow Building Solutions business unit under the Performance Plastic segment. The business unit offers building science expertise to help builders, designers, architects and homeowners reduce energy costs and protect against wind, rain and moisture, while contributing to the reduction of greenhouse gas emissions.

☆

## Oil prices rise after ending previous week at US$80

Crude prices for May delivery fell by over 50 cents to end the previous week at US$80 a barrel, amid volatile trading, as investors scout for clear signals that the global economic recovery will continue. Prices are now 3.8% below a 2010 peak of roughly US$83.18 a barrel. Crude oil for May delivery rose to US$80.49 a barrel in after-hours electronic trading on the New York Mercantile Exchange at the start of this week. Monday morning saw crude oil prices rise for the first time in four days on expectations of an increase in fuel demand as the global economic recovery strengthened and concerns over Greece's debt crisis started receding, bolstering the euro. The dollar fell against the euro following a pledge by the International Monetary Fund and European Union to help Greece finance the EU's largest debt. As this rescue plan reduces concerns of a double dip recession in the Eurozone, the news in bullish for crude. The dollar will continue to be weak because of a long-term policy to keep interest rates low and the money supply high.

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## Hike in propylene spot prices in Europe needed to fill gaps in supply

Propylene spot prices in Europe need to rise further if the gaps in supply are to be filled, as per ICIS. Traders said that the market would begin to get some relief and return to some balance when spot prices rise to levels that would open the arbitrage and attract deep-sea volumes away from the US market. Spot propylene prices were currently being pegged in the low to mid ·1000s/ton. Prices need to move above ·1,100/tonne (US$1466/ton) CIF (cost insurance freight) NWE, considering US prices that are currently around US$1700/ton [delivered]. Propylene supply in Europe had been extremely tight since the start of the year because of cracker and refinery rate reductions, unplanned production problems and the strikes at French refineries last month. Derivative demand was strong supported primarily by the export market, particularly to Asia. The potential to work Southeast Asian volumes into Europe is currently being assessed. There is still demand to cover shorts, and a hike in prices will just be a matter of time. Some predict that the arbitrage would be workable by May. However, consumers said that they were not in a position to pay such prices. While derivative demand has been better than expected, they are under constant pressure to recover the contract price increases imposed all year and continue to remain competitive on the global market. Producers hit by unplanned production hiccups were the only obvious buyers. The tight supply and demand situation was highlighted by the recent ·70/ton increase in the April contract settlement, which at ·980/ton FD (free delivered) NWE, was, for the first time, higher than ethylene that settled twenty dollars higher at ·960/ton.

*Source : www.plastemart.com*

## WELCOME TO NEW MEMBERS OF THE FEDERATION

The following New Membership has been accepted by the Federation at its Executive Committee Meeting on 19th March 2010 :

| | | | |
|---|---|---|---|
| 1. | M/s. Tower Rubber Products | – | Life Manufacturer Member |
| 2. | M/s. Sweta Enterprises | – | Life Manufacturer Member |
| 3. | M/s. Vinayak Agro Polymers | – | Life Manufacturer Member |
| 4. | M/s. Gautam Plastics & Industries | – | Life Manufacturer Member |
| 5. | M/s. Alom Poly Extrusions Ltd. | – | Life Manufacturer Member |
| 6. | M/s. Hind Pipe Industries | – | Life Manufacturer Member |
| 7. | M/s. K. K. Polycolor Asia Ltrd. | – | Life Dealer Member |
| 8. | M/s. Bonanza Hirise Pvt. Ltd. | – | Life Dealer Member |


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