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JUAN RAMON SALINAS

Managing Director & CEO,
IISRP (International Institute of
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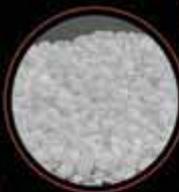
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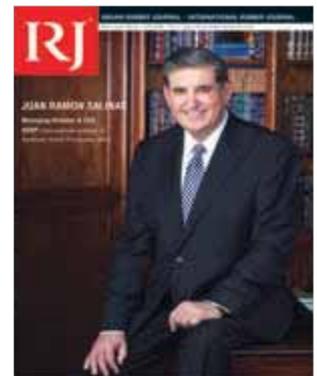
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FOUNDER, PUBLISHER & EDITOR M Noorani
MANAGING EDITOR Aida Noorani Malik
GENERAL MANAGER Farida Bharucha

PUBLISHERS:

Rubber Publications (Bombay) Pvt. Ltd. 53/B Mittal Tower, Nariman Point, Bombay 400 021, India

TELEPHONE: +91-22-22812858 +91-22-22885355 +91-22-22824988
Fax: +91-22-22813390

E-MAIL: irj@irjournal.com **WEBSITE:** www.irjournal.com

CIRCULATION: India, Sri Lanka, Bangladesh, Pakistan, Malaysia, Indonesia, Philippines, Thailand, Japan, China, Taiwan, Singapore, USA, UK, Canada, Latin America, Western Europe, Poland, Hungary, Czech Republic, Romania, South Korea, Russia, Australia, New Zealand, Africa, Turkey, Greece, Iran and The Middle East.

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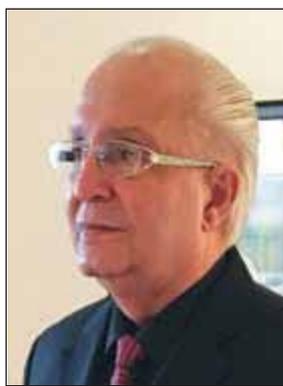
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As I write this editorial, the results of India's seven week long elections are to be announced soon. Exit Polls suggest a big victory for incumbent Narendra Modi's ruling right-wing BJP party. As we await the formal results, the BJP, its core supporters, the stock market and the Indian Rupee have already started celebrating in a big way. Many seem to think that a single party majority will be good for a stable India and perhaps for more economic reforms. A strong Government could also be in a better position to deal with its difficult neighbours, specially Pakistan and China.

Internationally, Donald Trump threatens to wipe Iran from the map and continues to wage an expensive trade war with China. Between frequent missile tests conducted by North Korea, ongoing Brexit woes, pressure from other nations on the US to go to war with Israel, it is little wonder that the global economy is not faring as well as it should.

This issue features the IISRP (International Institute of Synthetic Rubber Producers, INC) with special emphasis on the Institute's 60th AGM in Seattle this May. Headed by the experienced and dynamic Juan Ramon Salinas, this finely-knit organization continues to be a great pillar of the global synthetic rubber industry. With its many interesting programs, the IISRP will consolidate its position and like its natural rubber counterpart, the IRSG (International Rubber Study Group).

We welcome Florent Menegaux, the new CEO & Managing Partner at Groupe Michelin, who

takes over at a very critical juncture in the global tire industry.

The big news in the rubber machinery industry right now has been the acquisition of the Extrusion Technology Business of one of the world's leading rubber machinery manufacturers, HF Group (Harburg-Freudenberger Maschinenbau), to a fellow Germany's rubber machinery leader, the extrusion major Troester GmbH & Co. KG.

May also saw the departure of the world-renowned expert, Prof. Dr. Andreas Limper who headed HF Mixing Group business with such distinction during the last two decades.

To round up the issue, we publish ATMA's "Traction" is an excellent write up on the latest situation in the tire and automotive industries compiled by the very capable Rajiv Budhraj, Director General whose knowledge of the Indian and global tire industry is second to none.

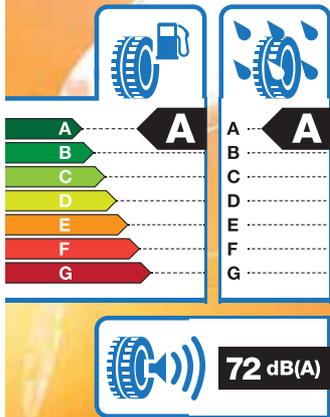
We hope this issue provides you with much good reading until we publish the 26th Anniversary issue of the IRJ in June/July.

Aida Malik

M Noorani

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Juan Ramon Salinas

Managing Director & CEO, IISRP (International Institute of Synthetic Rubber Producers, INC.)

in an interview with M. Noorani

When the IRJ interviewed you in 2017, you spoke of the challenge of increasing the added value delivered by the IISRP to its members in exchange for membership, as well as the challenge of increasing and maintaining membership levels. Please comment on how you have met these challenges over the past two years.

That's correct; we are focused on increasing the added value we give to our members, I must add that the IISRP Vision takes us towards that goal, that of increasing the value delivered. Today, we are focusing our efforts on some tasks that members consider important, so we include them with higher priority. One of the deliverables that members value the most is the intelligence provided. This topic has several edges, one, for example, is the reports of the statistical programme, on which we have worked to strengthen it and make it more reliable. We have also added to our statistical programme the synthetic rubber (SR) consumption forecast where we have developed our own model of the IISRP to estimate the consumption of SR for the next five years. This report is done every other year and is exclusive for IISRP members. Also, members are interested in other information related to the industry, such as information on different end-use markets, raw materials, innovation, new applications, sustainability, and the environment, global and regional economic situations, regulations among other issues, for which we have implemented the webinar programme. This programme includes the topics of interest for the members, and it is available to all the employees of the member companies. We have also improved some of our communication tools to make them more reliable, safe and user-friendly. Increasing added value is a goal where we keep working.

How has the global SR industry fared during



2018, given the challenges and opportunities it has faced?

Nowadays, the surplus production capability of SR continues to be one of the primary problems facing the SR industry; this is more remarkable in the elastomer types used in the manufacture of tires and in the Asia Pacific region where China's overcapacity stands out, which was prompted by the overinvestment in capacity. From the non-tire elastomers perspective, overcapacity is minor.

This excess capacity has led to adjustments in the industry to balance supply and demand, which have already led to idled production capacity, plants have been operating at low rates or have stopped their operations, and some companies have closed.

And in terms of production of SR, 2018 was a year with moderate growth in volume. There was a growth of 2% compared to the previous year. Also, there are some types of elastomers with a lot of pressure on the economic margin due to the substitution of materials, such as natural rubber (NR), they have maintained very competitive prices. This was notorious in the last part of the year.

Given the current scenario of overcapacity in the SR industry and low NR prices, what are your thoughts about the rise in the SR share in global rubber consumption?

The dynamics of the NR market continue to affect the SR industry. In 2018, according to analysts, the production of NR grew around 4.5%.

This oversupply caused prices to fall, and stay low through the year. Besides, we all know that there is a close interaction between the two types of rubber (natural and synthetic). When we have low prices on NR, there is an impact on the prices of SR caused by the difference in prices, in addition to having an impact on the consumption of SR. In the tire manufacturing market, this is more significant and affects most types of SR used in tire applications. The replacement will continue if the price difference goes too far apart and justifies the replacement. But we must bear in mind that the performance can be the decisive factor in some applications or segments of the market. For instance, the demand of high-performance tires requires the use of SR where performance cannot be met by NR.

Could you tell us more about the increasing share in the SR consumption of non-tire applications?

The automobile manufacturing and tire manufacturing industries are the largest consumers of SR. These two industries account for around 75% of the consumption of SR worldwide. However, SR is used in the manufacture of many types of products that we use every day; making our life more comfortable.

► **Construction Sector**- The Construction sector generates significant demand for SR in many end-uses as an additive in paving/roads and different types of waterproofing membranes.

► **Adhesives & sealants** - Industries that typically use rubber adhesives and sealants include construction, consumer products, assembly, packaging, labeling, and transportation.

► **Plastic modification** - SR is also the material used to modify the characteristics of some plastics used in the manufacture of household appliances and electronic devices.

► **Footwear** - It is a material used in the manufacture of



2018 was a year with moderate growth in volume

footwear, both vulcanised and non-vulcanised, of different types, such as commercial, industrial, sports and other uses.

Personal care: SR is also used in personal care products, such as diapers.

► **Medical industry** – Rubber is used to make various objects like tubes, stoppers, condoms, breathing bags, cushioning or supporting materials, prosthetics, implants, catheters, and surgical gloves.

► **Industrial goods** –SR material is widely used in the manufacture of hoses, rubber mats, rubber bands and belts, etc.

► **Lubricant** - SR is used as a viscosity

modifier additive.

All these applications and uses of SR in recent years have supported significant growth in line with regional and global economic growth.

Could you tell us more about the theme “Breakthrough to Innovation” of the 60th AGM in Seattle, WA, which was held from May 13-15, 2019? How did the choice of Seattle as a venue influence the theme and vice versa?

Concerning the selection of the host city, the main criteria is that it must have a relationship with the SR industry. It should be a city or region where SR production plants are located, or they are important end users of SR.

With respect to Breakthrough to Innovation, I think, that the market situation that has been revised with the previous questions helps us to visualise a very competitive scenario in which the IISRP members see the need to improve their product portfolio and decrease its commoditisation. And the path that members are seeking is the innovation in their production processes and products; this is a key element in the improvement of their product portfolio and financial performance.

Innovation is a significant factor in the search for new products and new applications. But it is also important to know about and understand about the innovation happening in the markets where SR is used, this is through the new available or developing technologies in those markets.

Regarding the host city for the 60th Annual General Meeting, if we put together innovation and the criteria for selecting the city, I believe Seattle meets both. Seattle is a city where innovation is part of its hallmark. Its economy is driven by a mix of industrial companies, and technology companies of the new economy, such as the internet, software, service companies, design, biotechnology, and clean technology. Also, Boeing Corporation has its largest division here. It has large aircraft manufacturing plants as well and remains the largest private employer in the Seattle metropolitan area. The aviation market is an interesting market for the SR industry where there can be many new opportunities for SR.

What special events/features were held at the AGM to mark the 60th edition of the event?

Our AGM included in its programme the General Board

Meeting. Hence, it had the name of the 60th AGM. In that meeting, the members chose the next International President to lead our organisation for 2019-2020.

Likewise, the next year's budget and its work programme was reviewed. We also had meetings of different work committees where all the projects, activities, studies and programmes that are included in the work programme were reviewed in detail.

Our programme included a visit to one of the Boeing plants, and the Supply Chain Strategy Director gave us a presentation on the opportunities and innovation in the Boeing supply chain. In addition, the Director of Programmes of Microsoft gave a presentation on IT Developments and Mobility. Moreover, the programme included other presentations on different topics, such as NR and SR markets, and 3D Printing Technology, among others.

What is the current total number of affiliated members and member companies at the IISRP and what is the present share in the IISRP membership between three key regions – America, Europe, and Asia?

The membership is according to each geographical region, the number of rubber producers and the size of the SR industry. The number of members in the Asia-Pacific region has remained the same over the past years, according to the number of rubber producers in the area. The affiliated membership has increased significantly in recent years.

What is the current supply-demand scenario for major SRs?

Supply and Demand balance have mixed performances between all rubbers, so I would like to be more specific about it:

BR – Supply/Demand balance for this rubber has been improving in the last couple years since no more additions have been taking place and demand has been improving.

SSBR supply has been expanding fast, and perhaps faster than the expected demand. Moreover, during 2018, some capacity additions came on-stream, and we are expecting to have additional capacity coming during 2019 in China and Singapore. However, demand has been steadily increasing, and we believe that this market will get balanced by 2021 (considering the supply expansions and slow demand expected during 2019 & 2020).

On the other hand, ESBR demand has been declining since 2012 according to our estimations; as a result, two players have shut down their ESBR production capacities in the last couple of years. We believe that the demand for high-performance tires and green tires has favoured the demand for SSBR/BR instead of ESBR. Moreover, some NR substitutions took place during 2018, since NR prices have been on the low side.

For non-tire elastomers, the EPDM rubber supply/demand



The number of members in the Asia-Pacific region has remained the same over the past years

balance has been improving, since the demand in the Asia Pacific have been gradually increasing. So, the additional supply added in the last five years has been gradually ranking up to fulfill market demand. On the other hand, very modest investment has been made for NBR, so supply and demand have been balanced, and since no additional supply is expected to come on-stream, this steadiness will continue. In contrast, SBC demand has been gradually increasing over the last six years. However, additional supply is expected to be added in the short term, mainly in the Asia Pacific. Furthermore, we expect the balance will continue since demand is expected to have a steady growth.

Can you highlight some of the key projects and research projects that the IISRP is currently

overseeing/managing?

We are consolidating our monthly webinars for members, where we cover a series of topics of interest to members, such as market trends, technology, applications, environmental, financial, data privacy, among others. For instance, we are now finishing a series of six webinars on sustainability in the supply chain, where different components of the supply chain were reviewed, such as warehousing, transportation, etc. and how to make these activities more sustainable.

We are also forming the committee of affiliated members, to grant them more participation in the activities and projects of the institute. It is already operating in the Americas section, and we hope to continue in the other sections shortly.

We also have in our technical study portfolio, two epidemiology studies concerning butadiene monomer and one for Chloroprene. We are evaluating the possibility to perform an update of LCA for different types of SRs in addition to a study on the impact of the circular economy to the SR industry. However, in both cases, we are at an early stage and a lot of work has to be done.

Could you shed light on the SR consumption and production scenario in Asia over the past two years, particularly in view of the slower growth in China's economy and the steps taken earlier to idle over 500 kt of rubber?

Supply and demand balance for SR performed well during 2018 when we saw higher utilisation rates. While the SR overcapacity situation has challenged most of our industry, over 500 kt became idle in China. The authorities are conducting a managed slowdown, to avoid overheating the economy, which has seen growth gradually slow down year after year since 2010. However, only 250 KT of tire elastomers remain idle. Even though China's economy grew by 6.6% in 2018 (the lowest paced since 1990), some of the SR products had a solid growth last year. Nevertheless, we expect that the demand of SR will slow down between 2019

and 2021 as the global growth is moderating from 3.0 in 2018 to 2.9% in 2019 and with an average of 2.8% in 2020-21.

In your opinion, what has been the most significant technological development in the SR industry since the IRJ interviewed you last in 2017?

We, at the institute, do not follow up frequently on this topic since the members are very careful of their technological and confidential information on their innovation plans. Moreover, they do not share much about innovation plans until they are launched in the market. But I can tell you that during the period that you mention, SR producers have concentrated their efforts on making their product portfolio more profitable, working on optimising their production operations and improving their productivity. Of course, there are some new commercial products available on the market that are added to the product portfolio of the family with some modifications for some specific application, looking for differentiation of their products.

The IISRP performed an SR Consumption Forecast from 2017-2021 (including BR, ESBR, EPDM, NBR, SSBR & SBS). How do those figures stand up in light of current market trends?

Well, the latest forecast was released in the 3rd Quarter of 2018, and it forecasts the SR Consumption from 2019-2023. Also, GDP, auto and tire industry, and oil industry market trends were used as support data for forecasting. This forecast is already reflecting how the GDP is expected to moderate over 2019-2020 as global slowdown clears away. However, the outlook is dependent on a significant downside uncertainty, including the chaotic financial market developments, raising trade protectionism, increasing geopolitical tensions, and growing policy risk.

Could you comment on the overcapacity and the saturation situation as it stands in the industry?

The overcapacity situation that our industry has been facing in the last several years has gradually improved. We believe that this challenge has been driven by two main factors: Overinvestment in China; and the increased capacity of SSBR & BR (due to the demand for high-performance tires and green tires). However, China has already taken some measurements to stop overinvestment and working more on introducing specialty products and becoming more innovative driven. Moreover, no major capacity additions on tire elastomers are expected. Finally, our estimations show an important improvement in capacity utilisation by tire elastomers and this trend is expected to continue in the long run.

On another note, we can confirm that SBC producers are planning expansions and new projects in the short term, mainly in the Asia Pacific region. Despite SBC's increased supply, we are confident that the additional



GDP is expected to moderate over 2019-2020 as global slowdown clears away

supply for this elastomer family will be balanced since SBC demand has been solid in the last five years.

Please share your views on the growth prospects for the tire and rubber industries of China and India for the next decade?

In 2018, the passenger car replacement tire sector's demand recorded a modest growth, which was supported by the developed markets. In contrast, the original equipment tire segment's demand declined, more likely driven by the slow light vehicle production in China. In the short term, we are expecting to see modest growth in tire sales due to the slowing light vehicle production in China. In contrast, the steady increase in car parc in India is driving the increase in replacement tire sales. In addition, the original equipment tire segment was performing well during 2018. In the short term, there will be very modest growth in passenger tire demand

on a global basis for the Chinese market is expected to be stagnant, and China is a major force of the auto, tire and rubber industry.

In the long run, we expect that emerging Asia will continue driving the growth in the passenger vehicle segment, contributing to about 70% of the total growth between 2018-2025. As a result, light vehicle tire market and the SR market will continue to expand. Finally, we cannot forget that mobility transformation will drive significant changes in the auto industry and all the supply chain, with major requirements towards sustainable and innovative products.

For those who were unable to attend the 60th AGM in Seattle, what is your message for the global rubber industry as a whole?

Firstly, all of those who could not join us this time, we hope to see them next year in Bangkok, where the 61st AGM will be held.

Having said that, they do not have to wait until the next AGM to actively participate in the projects, studies, and programmes that are part of our annual work plan. They can participate every month since we have monthly, quarterly, semi-annual activities and of course, the annual AGM.

And concerning the future of the industry; we have a positive outlook towards it. Of course, we will have challenges and difficult moments along the way, but, I believe, we have the strength to overcome them to achieve constant growth. This requires a great continuous effort to find and carry out creative and innovative initiatives that make the industry more competitive, more sustainable and environmentally friendly every day. Among the key elements to achieve this, one which, I believe, is significant is the technology development and innovation of the production processes, the products, and their final applications.

International Institute of Synthetic Rubber Producers, Inc. (IISRP)



Juan Ramon Salinas
Managing Director & CEO, IISRP

In mid-May, even as this Cover Story is being written in India, half-way across the world, in Seattle, US, the International Institute of Synthetic Rubber Producers (IISRP) is conducting its AGM — an event that is sure to be superbly executed and of great value to all attending. We are able to make this statement with a great deal of confidence because we know by now that the hallmark of IISRP is great professionalism and an unwavering commitment to the industry it serves. It is this attitude and dedication that has won the Institute plaudits over the years, established its reputation and helped it gain the confidence of those in the global synthetic rubber (SR) industry as well as the rubber industry at large. As it nears its 60th anniversary year, we cover the IISRP that has lived up to its stated purpose of furthering the long-term growth of the global SR industry, to the benefit of producers, customers and ultimate users.

The Houston, Texas, USA headquartered-IISRP is a subject of this issue's Cover Story. Ever since the IRJ was launched 26 years ago, we have had a very close and rewarding co-operation with this pre-eminent global rubber organisation and also with its natural rubber (NR) counterpart — the International Rubber Study Group (IRSG).

The IISRP's reputation grows every year, thanks to the good work being done by it. Its publications are highly valued around the world for their impressive depth of knowledge and thorough analysis of various aspects of the rubber industry. Its research programmes, market surveys and advocacy projects focusing on various aspects of Elastomer technology are invaluable sources of information for rubber industry professionals and IRJ readers. The IISRP's data and forecast are a true goldmine in helping many companies make decisions. The IISRP's annual awards are among the greatest honours that can be achieved in the international rubber industry.

Juan Ramon Salinas, the highly-experienced and globally-respected SR professional, took over as Managing Director & CEO of the IISRP in 2015. He spent 17 years at Dynasol (one of the world's renowned suppliers of styrene and butadiene elastomeric copolymers) and brought with him a great depth and range of knowledge and experience of the elastomer industry. He served as worldwide commercial and marketing director for 17 years prior to which he had various positions including Business Development and Marketing Manager, Logistics and Customer Service Manager and Development Manager.

SEATTLE



Salinas has ensured that the IISRP continues to best represent the industry by keeping its pulse on trends and movements in the world of Elastomers. The IISRP stands out for its ongoing efforts to stay updated and relevant to achieve its aims and objectives and to be the best advocate for the SR industry.

It is for these reasons that we keenly follow the developments at the IISRP. While there are very few in the global rubber industry who do not have some familiarity with this Institute, we would be remiss if we did not frequently take an in-depth look at this strategically important institute, to let our readers in on its interesting history, workings and current activities.

The most cursory of glances at the IISRP reveals that it is exceptionally active and engaged in multiple projects and studies. Membership to the Institute adds indisputable value to companies that join, which explains

the constant stream of new members, though mergers and acquisitions sometimes reflect in the expanding and contracting membership numbers as well.

Origin

The IISRP has had a remarkable impact on the global rubber industry during its nearly 60 years of existence. It has carved out a unique and valued role for itself since it was established by a group of executives from the SR industry, who became the 14 charter members of the institute. They set up the Institute with the declared mission of promoting the world's SR industry and its benefits to society. It has been an unqualified success in fulfilling this objective, and continues to adapt and respond to changing circumstances so as to best serve the industry.

While the IISRP was incorporated in New York City in 1960, under the State of New York Not-for-Profit Corporation Law, it is now headquartered in

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- Co-Polymer Rubber & Chemical Corporation of the US
- Firestone Synthetic Rubber and Latex Company of the US
- General Tire & Rubber & Latex company of the US
- Goodrich-Gulf Chemical Company of the US
- Goodyear Tire & Rubber Company of the US
- International Synthetic Rubber Company of the UK
- Philips Chemical Company of the US
- Polymer Corporation of Canada
- Shell Chemical Company of the US
- Shell International Chemical Company of the UK
- United Carbon Company of the US
- US Rubber Company of the US

Houston, Texas. Houston was selected due to its proximity to SR production sites in the US, as well as being a good starting point for international travel and having the advantage of relatively affordable real estate. The IISRP also has ancillary offices in Milan, Italy; Tokyo, Japan and Beijing, China.

Membership

Membership to the IISRP is open to any company that manufactures SR by polymerisation. It has 50 producer and affiliated members living in 23 countries. All its members have an equal say and equal shareholding in the organisation, irrespective of the elastomers produced. Each corporate member sits on the Board of Directors and carries the same weight in the institute’s deliberations. All member companies have equal representation on the

institute’s Board of Directors and on the Environmental Health, Statistical and Technical/ Operating standing committees.

The IISRP opened itself by introducing a new category of membership in 2009 to “Affiliate Members” include upstream and downstream producers, supply chain partners from raw materials suppliers to packaging companies, equipment manufacturers, consultancies, agents and distributors of SR. In the past, companies like these had attended the IISRP’s very popular Annual General Meetings (AGMs), but were now able to do so whilst being members of the association. However, unlike the “Producer Members”, they do not have an impact on the core programmes of the IISRP. There are currently 34 Affiliate Members. They attend the AGM and annual Board meeting at the

CEO Juan Ramon Salinas has a very streamlined and efficient organisation.

HOUSTON HEADQUARTERS:

The Managing Director is responsible for the effective operation of policies and programmes approved by the Board of Directors and Executive Committee; and for advising and making recommendations to the officers and Executive Committee with respect to these activities and policies.



Juan Ramon Salinas,
CEO & Managing Director

The Director of Programmes is responsible for the IISRP’s Statistical programmes including data collection, reconciliation, system design, analysis and reporting. He/she is responsible for preparation of all statistical publications and has direct responsibility for the Statistical Committee activities and serves as principal liaison for this committee to the Managing Director. He/she assists the Managing Director for policy planning, development and implementation.



Robin Boyd
Manager of Accounts

Houston Headquarters Office

IISRP
3535 Briarpark
Dr. Suite #250
Houston, Texas
77042- USA



Roxanna Bauza-Petrovic
General Director of Programmes

The Manager of Accounts is responsible for Payroll, Accounts Receivable, Accounts Payable, General Ledger, Financial Reporting, and Office Purchasing. The Recording Secretary to the Europe, Middle East & Africa Section is responsible for the Board of Directors and Committees’ minutes, agendas and all electronic communications or correspondences.



Mary O’Connor
Europe, Middle East & Africa Section Secretariat

same rate as the producer members, receive the same publications as the producer members, have access to the membership website and have served as Moderators at the IISRP's Speaker Programmes.

Organisation: Board of Directors & Committees

All the IISRP's member companies are represented equally on its Board of Directors (as well as on its Environmental Health, Statistical, and Technical /Operating standing committees). The Board of Directors elects a President and Treasurer of the Institute, and also elects a President and two Vice Presidents from each of the sections (Far East, Europe and the Americas) to serve as officers. They as well as the immediate Past President and the Managing Director, make up the Executive

Committee and are responsible for the day-to-day running of the IISRP. The President International is typically a Director from the country or region in which the following year's Annual General Meeting will be held. The Executive Committee takes policy and budgeting decisions, and reviews Institute operations and activities and then reports to the Board of Directors at the AGM. The Finance, Pension and Audit Committee have initial responsibility for developing budget recommendations.

The actual work of the Institute is conducted by the Section Committees, which are made up of representatives from its member companies, who have expertise in specific areas of interest to the industry. The Standing committees are appointed by the Executive Committee and are supported by each of the three sections. They currently include

Europe, Mid. East & Africa Office

Via Dante, 21
20056 Trezzo
sull'Adda
Milano, Italy

The Recording Secretary to the Asia Pacific Section is responsible for the Board of Directors and Standing Committees' Minutes and Agendas.



Shunsako Yamamoto
Secretarial Officer – Asia Pacific Section

The Secretariat to the Asia Pacific Section is responsible for helping to record the Secretary's administration work and all electronic communications or correspondences.



Harry Sun
China Liaison

The China Liaison is responsible for the exchange of statistical data between IISRP Headquarters and the China Synthetic Rubber Industry Association (CSRIA).

Asia Pacific Office

c/o Japan
Petrochemical
Industry
Association
Sumitomo
Fudosan Rokko
Bldg., 8th Floor
1-4-1,
Shinkawa,
Chuo-ku, Tokyo
104-0033
Japan



Rumiko Yoshida
Executive Office Staff – Asia Pacific Section

China Office

c/o CSRIA
Room 144, No.16, 7th Area, Hepingli,
Dongcheng District, Beijing 100013
China



The actual work of the Institute is conducted by the Section Committees

the Technical/Operating, Statistical, Environmental Health committees and the General Advisory Committee in the Far Eastern Section.

The current IISRP President-International, Hendrick Lam of TSRC Corp., handed over charge to his successor at the AGM, which was held in the month of May.

Organisation

We remain impressed by this streamlined and efficient organisation. Despite the large volume of work it does and the range and breadth of programmes and events the IISRP runs, the Houston headquarters has just four staff members, including Managing Director and CEO, Salinas. He is credited

with instituting certain processes to improve the efficiency and quality of service of the Institute – streamlining it from an office consisting of seven-plus part-time interns in 1997, to the tightly run organisation it has become under his stewardship. Besides the staff, resources are made available to the Institute through the corporate volunteers on the standing committees.

IISRP's business in Europe and Asia is conducted by outside contractors. Mary O'Connor runs the IISRP's European Office in Milan, Italy, while Haruyoshi Ueda, Secretarial Officer and Rumiko Yoshida, part of the Executive Office Staff, run the Far East Office.

The 60th Annual General Meeting: May 13-16, 2019 – Seattle, WA, USA

The highly-anticipated AGM of the IISRP was held this year from May 13-16 in Seattle, WA, USA. The key feature of the AGM was the business programme. Speakers focussed on the theme of "Breakthrough to Innovation"

AGM General Program

Monday, 13-May

Time(hrs, local time)	Activity / Event	Meeting Room / Ballroom	Comments
07.30 – 16.30	Registration Desk	Spring	
08.00 – 12.00	EHC & TOC Joint Meeting	Municipal	Only Committee Members
09.00 – 12.00	Stats Committee Meeting	Federal	Only Committee Members
11.30 – 14.00	Finance, Pension & Audit Committee	Superior	Only FPAC Members
12.00 – 13.00	Lunch	In the meeting room	
14.00 – 17.00	Executive Committee Meeting	Superior	Only Officers

Evening Activity

1830	Welcome Reception	Visions	Joint Activity
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Tuesday, May 14

Time(hrs, local time)	Activity / Event	Meeting Room / Ballroom	Comments
08.00 – 10.30	Registration Desk	Spring	
08.00 – 10.30	Asia Pacific Section Directors	Municipal	BOD Members and Committee Chairs
08.00 – 10.30	EMEA Section Directors	Superior	BOD Members and Committee Chairs
08.00 – 10.30	Americas Section Directors	Federal	BOD Members and Committee Chairs
11.30 – 12.25	Awards Ceremony	Madison Ballroom	Joint Activity
12.25 – 13.30	Awards Lunch	Madison Ballroom	Joint Activity

Wednesday, May 15

Time(hrs, local time)	Activity / Event	Meeting Room / Ballroom	Comments
08.00 – 11.00	Registration desk	Spring	
08.00 – 12.00	Session I – Speaker Program	Federal and Superior	
12.15 – 13.30	Committee Awards & Lunch	Municipal	
14.00 – 17.00	Annual General & Board Meeting	Federal and Superior	IISRP Members only
After the BOD Meeting	Incoming Executive Committee Meeting	Federal and Superior	IISRP Officers only

Evening Activity

1830	Gala Dinner	Chihuly Glass House	Joint Activity
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Thursday, May 16

Time(hrs, local time)	Activity / Event	Meeting Room / Ballroom	Comments
08.00 – 12.00	Session II – Speakers Program	Federal and Superior	
12.30 – 14.00	Farewell Lunch	Municipal	Joint Activity

In this year's AGM programme, a visit to one of the boeing plants was also included. The Boeing Supply Chain Strategy Director gave a presentation on the opportunities and innovation for the Boeing supply chain. Additionally, the Director of Programs of Microsoft gave a presentation on IT Developments and Mobility. The programme also included presentations on different topics, including NR and SR markets and 3D Printing Technology, among others.

Session I – Wednesday, 15 – May.

Time	Activity / Event	Speaker
08.00 – 09.00	Global Supply Chain: Driving Innovation & Capturing Opportunities	Jeff Carpenter – Boeing Corporation
09.00 – 09.30	Uncertain Times for the Global Economy	Michael Weidokal – ISA
09.30 – 10.00	3D Printing Technology topic	Paul Cesak – GoProto
10.00 – 10.30	Coffee Break	
10.30 – 11.00	Synthetic Rubber Market Outlook	Roxanna Petrovic – IISRP
11.00 – 11.30	The Outlook for Natural Rubber	Maria Gyftopoulou – LMC
11.30 – 12.00	Specialized SR Market Outlook	Duane Neidert – Smithers Rapra

Session I Moderator**Tayte French Lutz – Director of Marketing, Assistant Secretary and Treasurer – French Oil Mill Machinery Company**

Tayte French Lutz is Director of Marketing, Assistant Secretary and Treasurer at French Oil Mill Machinery Company in Piqua, Ohio. After earning a BSM in Marketing at Tulane University she started her career in the fashion industry working for Bloomingdale's then Donna Karan New York in New York City. In 2010s she returned to the fourth generation family-owned business as Marketing Coordinator. In 2013, she was elected to the Company's Board of Directors and currently serves as the Board's Assistant Secretary. In 2014, she was promoted to Director of Marketing and joined the company's Management Team. At that time, she also assumed added responsibility of the company's financial investments in her role as Treasurer. In line with the company's core value of community partnership, Tayte actively promotes STEM education and manufacturing awareness within the local school system. She serves on the Board and committees of a number of local civic and industry organisations such as Mainstreet Piqua and DRMA – Dayton Region Manufacturer's Association.

**Jeff Carpenter – Supply Chain Strategy Director – Boeing Corporation**

Jeff Carpenter currently serves as Supply Chain Strategy Director, Materials and Standards. In this role, he is responsible for creating and deploying supply chain strategies for Materials and Standards for all parts of the Boeing



enterprise. Before this, Jeff served as Director, Supplier Management responsible for the Italian supply chain, which provides major aircraft structure as well as detailed parts to 787 and 767 airplane programmes. Prior to this, he led a Cost Reduction effort on the 787, working with engineering to create and move cost down projects quickly through the Boeing approval system to enable them to be incorporated on the airplane.

Jeff joined Boeing in 1998 as a procurement agent at the company's Supplier Management division, following a college internship in 1997. He has held a variety of procurement assignments across the Supplier Management Division since then. In 2007, Jeff was named the senior manager for 787 supplier management PMO (Programme Management Office) where he oversaw the programme management function for the Vice President of the supplier management for 787. In 2009, Jeff was assigned to the integration team for the acquisition and integration of what is now Boeing South Carolina (formerly Vought). Later in 2009, Jeff was named the senior manager for the 787 systems procurement team responsible for the power, fuel, environmental control, and protective systems. Jeff transitioned from the programme 787 in June 2011 to lead the Raw Material & Fastener Procurement and Distribution for Boeing Commercial Airplanes responsible for the purchase and sale/distribution of raw materials and fasteners (aluminum, titanium, composite, forgings, bolts, screws, nuts, collars) for all commercial airplane programmes. He came back to the programme 787 in May of 2015 to lead the engineering integration portion of the 787 cost down effort. Finally, in September of 2016, he was named Director of Supplier Management responsible for the Italian supply chain.

Raised in Edmonds, Wash; Carpenter received a bachelor's of science degree in Finance and a one-year certificate in Purchasing Management from Central Washington University.

Michael Weidokal – Executive Director – ISA

A leading expert in the fields of international economic forecasting and global political risk analysis, Michael Weidokal



Jeff Carpenter serves at Boeing Corporation as Supply Chain Strategy Director, Materials and Standards

Roxanna also assists the Managing Director in policy planning, development, and implementation

is also the executive director of one of the world's leading international research firms, ISA (International Strategic Analysis).

With ISA, Weidokal is an advisor to major multinationals, government organisations and research institutes around the world. In fact, he advises organisations in more than 60 countries on how to interpret economic developments and political risk trends in international markets, as well as on how to develop strategies to maximise the benefits, and minimise the risks, presented by international markets.

Weidokal is the author of many of ISA's best-selling publications that are read by thousands of business and political leaders in more than 110 countries. These publications include the weekly ISA Global Update and the ISA Global Economic and Risk Outlook.

He is also a leading contributor to a number of other ISA publications, including all ISA Country Reports, ISA Region Reports, ISA Economic Forecasts and ISA Risk Forecasts. In addition, he regularly presents his findings on key global issues and trends to many of the world's leading businesses and trade organisations, as well as speaks at numerous economic and industry conferences around the world.

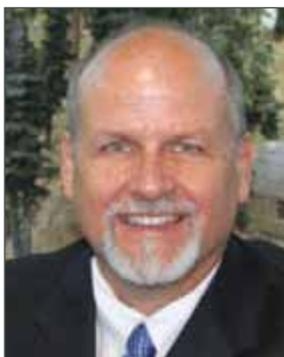
Prior to joining ISA in 2003, Weidokal was an economist with a major global accounting firm as well as headed the emerging market strategy for a major global automotive company.

Paul Cesak – Business Development Manager – GoProto

Paul Cesak is known as the creator and moderator of the first and largest "3D Printing" group on LinkedIn (60,000+ members) and has been an avid follower, consultant, and speaker advocating 3D Printing in the Professional and Commercial workspace. Paul is also familiar with CNC Machining, Injection Molding, Sheet metal work, and Cast Urethane Molding. His strength is knowing when to use each.

Paul saw the early need for 3D Printing in the Engineering and Manufacturing workspace in 2007 and consequently started the "3D Printing" group on LinkedIn to address this need. Most recently, he started the www.3DPrintingToday.com website.

For the past 11 years, Paul has worked intimately with the three largest 3D Printing companies in the world and understands the value that 3D



Printing and Additive Manufacturing bring to the commercial and professional marketplace.

Roxanna B. Petrovic – General Director of Programmes – IISRP

Roxanna B. Petrovic is the General Director of Programmes of the International Institute of Synthetic Rubber Producers, Inc. based in Houston, Texas.

Her career began at Industrias Negromex, S.A. de C.V. in 1999 (Mexico) where she held a number of positions until 2003 when she was transferred to Dynasol, LLC (Houston) as their marketing specialist. She holds a BS in chemical engineering from Instituto Tecnológico de Ciudad Madero. She served as Dynasol's representative on the Americas Section Statistical Committee and as the Institute's Statistical Committee Chair in 2009. Roxanna has more than 15 years of experience in engineering, supply chain, procurement, quality systems, commercial intelligence, and international business development support.

As General Director of Programmes at IISRP, she is responsible for the data collection reconciliation, systems design, and analysis and reporting, preparation of all statistical publications, direct responsibility of the Statistical Committee activities and serves as the principal liaison for this committee to the Managing Director. She also assists the Managing Director in policy planning, development, and implementation.

Her wish is to combine her knowledge and experience in these areas, to deliver the best creative value to IISRP's members and to the rubber industry.



Maria Gyftopoulou – Senior Research Consultant – LMC

Dr. Maria Gyftopoulou is a senior research consultant at LMC International, a company providing economic, marketing, and consulting services for industries related to agricultural commodities and their downstream

derivatives. Maria joined LMC in 2014 to provide expertise in chemical-related projects with a focus on synthetic rubber and tires. Prior to this position,



Maria was a consultant at Conversion and Resource Evaluation and a research fellow at Aston University specializing in both posts in the field of advanced thermochemical conversion of biomass, in particular, biomass fast pyrolysis. She holds a Ph.D. in Catalysis from Aston University, UK, and a bachelor's degree in Chemical Engineering from the National Technical University of Athens, Greece.

Duane Neidert – Director of Operations, Americas – Smithers Rapra

Duane Neidert is the Head of Consultancy Americas' information business for Smithers Rapra, a global provider of high-value content across a range of digital, published and live platforms. He brings over 20 years of experience in developing growth strategies and driving execution with Fortune 500 companies and top tier consulting firms.

Over the course of his career, Duane Neidert has delivered results across a range of industries including retail, printing, polymers, building products, automotive, and industrial. His experience includes finding growth through new technology and product development, service development, geographic and channel expansion, new end-user segments, and acquisitions.



marketing, process engineering, and product development. He has 27 years of carbon black industry experience supporting growth in the global rubber, plastics, ink, and coatings markets. Lester Tyra joined Goodpack in October 2016 as a business leader for its SR business based in Houston, Texas. Currently, Lester is the Regional President for North and Central America as well as Senior VP for Global Marketing and Sales Processes.

Lester has been responsible for process improvement initiatives, new product introductions, key account management as well as regional business teams in both the Americas and Europe. He currently manages the P&L for one of Goodpack's major regions as well as global marketing. Lester holds a Bachelor of Science degree in Chemical Engineering from Texas A&M University and an MBA from the University of Louisiana Monroe.

Egbert Schröder – Principal Programme Manager – Microsoft

Schröder started working at Microsoft in 2003, where he has held various positions in the company as executive director of the industry, director of the alliance for Accenture-Avanade. In 2013, he was appointed Managing Director of Process Manufacturing & Resources Industries in Microsoft



Session II – Thursday, 16 – May

Time	Activity / Event	Speaker
08.00 – 09.00	IT Developments and Mobility	Egbert Schroer – Microsoft
09.00 – 09.30	Microplastics Polymers in Our World Oceans with Emphasis on the Salish Sea	Julie Masura – University of Washington
09.30 – 10.00	Bad Seeds: Preventing Popcorn Polymer with Environmentally Friendly Passivation	Debby Rossana & Dave Smith – Nalco
10.00 – 10.30	Coffee Break	
10.30 – 12.00	Raw Material Panel	Bill Hyde – IHS Markit Charles Graham – TPC Group Doug J. Lipsey – Westlake Styrene Paco Rangel – Argus Media

Lester Tyra – Regional President, North and Central America – Goodpack

Lester Tyra brings nearly 30 years of career experience in global chemicals, working in various functional roles including sales,



Corporation worldwide. In this position, he is responsible for sales, marketing, and strategy solutions for the industry and the development of the global and multinational Microsoft customers. He is also responsible for producing and executing the business strategy, and solutions for the industry, which includes the chemical industry; the pharmaceutical and life sciences industry; the oil and gas industry; the metals and mining industry. As of November 2018, he was appointed Principal Programme Manager for Azure IoT Engineering.

Prior to Microsoft, Schröder was associated with several companies such as BOV AG and Evonik

Debby moved to Texas in a sales position with Dupont providing specialty chemicals to the oil field and other chemical industries

where he worked for more than 24 years occupying various positions within the organisation. All his years of experience in the industry has helped him to create successful partnerships, driving a quantifiable impact and growth by encouraging innovative change.

Debby Rossana – Industry Technical Consultant – Nalco

Debby has 35 years of experience in the chemical industry and supported markets from the oil field to textiles to butadiene. Debby received her BS in chemistry from Stockton University in 1979 and her Ph.D. in organic chemistry from Duke University in 1993. She began her career at Dupont where she laboratory and technical support on the Stainmaster™ carpet and Teflon™ fabric protector programmes. In 1990, she moved to Texas in a sales position with Dupont providing specialty chemicals to the oil field and other chemical industries. In 1993, Debby joined Nalco Champion in a sales position. During her 25 years with Nalco Champion, she has held positions in sales, management, marketing, and business development. Currently, in her role as an industry technical consultant (ITC), Debby provides technical support for the ethylene, butadiene and other downstream markets. In addition, she interfaces with research and innovative marketing, helping to bring the needs from the field to research and vice versa.



Dave Smith – Industry Development Manager – Nalco

Dave has 25 years of experience in refining and petrochemicals in process design, operations, field sales, marketing, and technical support. The past 22 years he has been with Nalco Champion. In his current role as Industry Development Manager, he is responsible for regional technical marketing support for chemical processing industries, specialising in olefins production processes, reactive monomers, and polymers for the Americas. He is also responsible for developing new treatment programmes and technologies, interfacing with customer technology centers, troubleshooting, and helping coordinate Nalco Champion process



treatment programmes with the changing needs of the petrochemicals marketplace.

Dave is a member of the American Institute of Chemical Engineers and serves on the Feedstocks Contaminants Subcommittee of the Ethylene Producers Conference. He received his Bachelor of Science degree in Chemical Engineering from Tennessee Technological University.

Julie E. Masura – Senior Lecturer / Research Scientist – University of Washington

Julie Masura is a lecturer of Geoscience in Interdisciplinary Arts & Sciences at University of Washington Tacoma (UW Tacoma). As a lecturer, she teaches in the freshman core and several environmental sciences and studies courses for the Division of Science and Math. Her graduate work as a sedimentologist has led her to work as a research assistant studying harmful algal blooms in Puget Sound and estuarine processes in Barkley and Clayoquot Sounds on the west coast of Vancouver Island. Her fieldwork has expanded to determining the concentrations of microplastics in the waters of the Pacific Northwest. Julie involves several students in her research work as well as partners with many environmental education groups throughout the region.

Julie has participated in numerous studies and projects among which we can mention: Standardisation of Methods to Quantify Marine Microdebris; Habitat modeling of Puget Sound for Alexandrium catenella cysts and motile cells to inform harmful algal bloom risk assessments now and in a future warmer climate; Spatial and Temporal Distribution of Microplastics and Puget Sound and Surrounding Waters, and Development and Application of Methods to Quantify Marine Microplastics, among others.



Panel List

Bill Hyde - Executive Director Olefins & Elastomers – IHS Markit

Hyde is a member of the Chemical Insight Olefins Team where he leads a group focused on analysing markets related to C₄ Olefins, SR, NR and tire raw



materials. He has been consulting in this market since 2002. Hyde began his career with Union Carbide Corporation in 1990 where he had various positions including engineering, optimisation, planning, and logistics. In 2000, he joined Texas Petrochemicals as a Business Analyst. Hyde joined CMAI, which was acquired by IHS in 2011, in the Olefins Consulting Practice in 2002 with an emphasis on C₄ Olefins and rubber, assuming responsibility for that practice in 2006. He has published a number of papers on the Olefins and Elastomers industries as well as presented at Olefins and Elastomers Conferences around the world.

**Charles Graham -
Senior Vice
President,
Commercial –
TPC Group**

Graham joined TPC Group in March of 2013. He sits on TPC's senior leadership team reporting directly to their CEO. His team manages all commercial activities within TPC including sales, business management and strategic raw material purchasing along with P&L responsibility for TPC's three business units – C4 Processing (Butadiene & Butene-1), Fuels (MTBE & Raffinate 3) and Isobutylene Derivatives (Polyisobutylene, Diisobutylene and High Purity Isobutylene).

Graham formerly served as President, Asia Chemicals for LyondellBasell Industries in Hong Kong including board responsibilities for joint ventures with Sumitomo Chemical and Sinopec. He has spent more than 40 years in sales, manufacturing, marketing and management positions with Union Carbide, Occidental Chemical, and LyondellBasell and its subsidiaries, including Equistar Chemicals and Lyondell Chemicals.

Graham started his career in 1976 with Union Carbide in a variety of sales, manufacturing, sales management and licensing roles for their polyolefins division. He joined Occidental Chemical in 1989 as their Director of Marketing for their polyethylene division subsequently moving into the VP-GM role in 1991. He joined Lyondell Chemical in 1995 when this division was sold to Lyondell where he held the role of VP-Business Management. In 1998, he moved into the role of VP-Sales for Lyondell's olefins group subsequently moving into the combined role of VP-Business Management for Lyondell's North American olefins group and the global styrene monomer business. Graham moved to Hong Kong for Lyondell in 2006 and was there until his retirement in 2009. Before joining TPC, he was involved in entrepreneurial activities supporting the



polymers and chemicals distribution and services industry.

Graham holds a degree in Business Administration from the University of Kentucky.

**Doug J. Lipsey – Sales
Manager – Westlake Styrene
LLC**

Lipsey has been with Westlake Styrene for 24 years joining in 1995, and currently manages all styrene sales, raw material purchasing, customer service, logistics, and supply planning. Lipsey began his career in 1983 with process engineering positions at International Paper and Texas Utilities. His petrochemical experience began in 1988 with Fina Oil & Chemical where he held various positions in product management and business development. Beginning in 1992, Lipsey traded styrene and other aromatics at Tolson, and next became the Global Styrene Consultant for CMAI (acquired by IHS) from 1994-1995. Lipsey has a B.S. in Chemical Engineering from Texas A&M University and an M.B.A. from Southern Methodist University.



**Paco Rangel –
VP Aromatics – Argus Media**

Paco Rangel is VP, Aromatics, based in Houston. His areas of expertise include the aromatics market consulting and price analysis, manufacturing economic analysis, fuel supply chains, and NGL pipeline management. He also focuses on single-client studies covering topics in reforming, alkylation, pyrolysis gasoline, and economic competitiveness in both olefins and aromatics value chains. Paco has more than 16 years of consulting experience in the energy and petrochemical industry. He began his career at Accenture, where he helped petrochemical clients in areas such as business process design and simulation, and mergers and acquisitions. He joined DeWitt as an olefins analyst in 2001 and spent 10 years working on the analysis of both olefins and aromatics markets. He then became Manager of Economic Services in 2008. He joined Argus in 2014 after spending three years working for Opportune. Paco holds a BSc in industrial engineering from Texas A&M University and an MBA from Tulane University.



FUTURE

We wish IISRP's energetic and effective Managing Director and CEO Juan Ramon Salinas and his highly-motivated and focussed team continued success in making the IISRP such an outstanding organisation.

IRSRP: 2017-2018 AGM



2017-2018 President International Enrico Lucchese (Versalis)



2018-2019 President International Dr. Brian Chapman (Kuraray) & 2017-2018 President International Enrico Lucchese (Versalis)



2018 Institute Chairs - Sandra Straube (Trinseo) - Larisa Bondar (Sibur) - Angelo Lucio Spelta (Versalis)



Dr. Hak Joo Kim (Hankook Tire Corp) 2017 AGM Speakers Program



2016-2017 President International Hendrick Lam (TSRC) AND 2017-2018 President International Enrico Lucchese (Versalis)



Noboru Oshima (JSR) IISRP Technical Award Winner 2017 and Wei-Hua Tu (TSRC) - IISRP General Award winner 2017



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- 3D plant design and laser scanning
- MIRA – the automation concept

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- Liquid dosing system
- Chemical weighing system
- Conveying and silo technology
- Anti-Tack system
- Dust and oil recycling
- Scrap tire and rubber recycling plant

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HF Group transfers its Extrusion Technology Business to TROESTER



Harburg-Freudenberger Maschinenbau GmbH, Hamburg, and TROESTER GmbH & Co. KG, Hanover, announced that the HF Group's Extrusion Technology Business Unit was transferred to TROESTER on May 1, 2019. Following decades of designing and manufacturing extrusion equipment and related components, the HF Group decided to transfer its Extrusion Technology Division to TROESTER, which is the renowned global leader in the extrusion industry. TROESTER GmbH & Co. KG will maintain the Extrusion Business Units location in Hamburg and has taken over all Extrusion employees, thus guaranteeing the continuity and product excellence, which was one of the key factors of the sale.

Explaining its decision, the company issued a statement which said, "The Extrusion business has changed significantly in recent years and many of our customers are increasingly asking for complete lines and turnkey solutions for rubber extrusion. With the transfer of ownership to TROESTER, we are ensuring that Extrusion – which today is highly specialised in the Indian market – can continue to develop successfully in their field of expertise. We are delighted that TROESTER, a traditionally-run family business, shares similar values as HF and will continue to develop the acquired business together with its highly-qualified employees."

Dr. Peter Schmidt, Managing Partner of TROESTER GmbH & Co. KG, commented on the transfer, "HF's Extrusion technology has convinced us. The acquisition enables us to take over technologically-excellent Extrusion products as well as a dynamic service and engineering organisation that we are looking forward to and which will open up new opportunities for TROESTER in the international market. HF Extrusion's technical equipment and scope as well as their international

network of valuable business contacts ideally complement TROESTER's current portfolio, thus providing our customers with new and enhanced equipment solutions."

As the world's leading supplier to the tire industry, HF will focus on its mixing equipment, tire building machines, curing presses and Press+Lipid Tech machinery in order to promote

these products through innovation thus strengthening and continuously expanding their market position.

Existing HF extrusion orders and projects will be completed in close cooperation with TROESTER and both teams will continue to ensure continuity in all future business relations with customers and suppliers from their respective locations in Hanover and Hamburg.

The acquisition of HF Extrusion is another important step for TROESTER to further develop this company and establish itself as one of the world's leading system suppliers for rubber extrusion machinery and equipment.



Dr. Joern Seevers, Managing Director of Harburg-Freudenberger Maschinenbau GmbH,



Dr. Peter Schmidt, Managing Partner of TROESTER GmbH & Co. KG,

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6% rise in MRF's Q4 revenue

● For the quarter ended March 31, 2019, MRF saw a 15% decline in its profit after tax, at Rs 294 crore (\$41.9 million), as compared with Rs 354 crore earned in the same quarter of 2018. The Indian tire giant's profit before exceptional items and tax stood at Rs 409 crore (\$58.4 million), as compared to Rs 514 crore, but it saw revenue rise by 6%.

For the full year ended March 31, 2019, the company's profit stood at Rs 1097 crore (\$156.6 million), a slight increase over the previous financial year's Rs 1092 crore. Profit before exceptional items and tax edged up slightly at Rs 1609 crore (\$229.7 million), compared to Rs 1602 crore in the year-ago period, while revenue from operations grew to Rs 15,837 crore, compared to Rs 15,227 crore. On a consolidated basis, the Chennai-headquartered company's PAT was flat at Rs 1,131 crore, while revenue grew to Rs 16,062 crore.

Michelin acquires telematics group Masternaut

● French tire giant Michelin is buying telematics company Masternaut for an undisclosed amount.

Masternaut, based in France, manages over 220,000 mostly light utility vehicles under contract. Michelin's takeover of the company was made on the basis of 8 times 2018 EBITDA (earnings before interest, tax, depreciation and amortisation) before synergies.

The deal is seen as boosting Michelin's presence in the field of customer services. Florent Menegaux, Managing General Partner of the tire manufacturing company, commented about Masternaut representing a further step in the expansion of Michelin's services and solutions business, especially in Europe and for light vehicle fleets.

Fall in Q4 net profit for JK, but strong results for 2018-19

● JK Tyre & Industries reported a 78.8% fall in consolidated net profit

New Michelin boss names executive committee

● Groupe Michelin's in-coming CEO Florent Menegaux has named his new executive committee. He took up his post at the end of a Michelin shareholders meeting on May 17.

Menegaux "has decided to set up a tight group executive committee focused on strategic arbitrage," said a statement from the French group. The board, which met for the first time on March 25, has three new senior managers:-

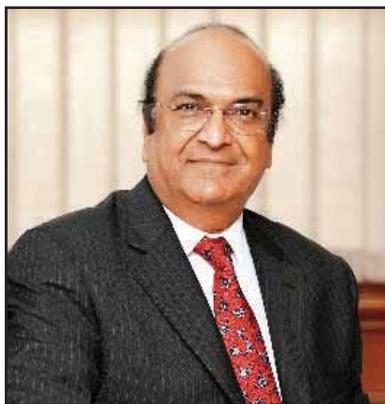
- ▶ Scott Clark, Executive Vice President, automotive business management, motorsport, experiences, Americas regions (central, north and south)
- ▶ Jean-Claude Pats, Executive Vice President, corporate personal management
- ▶ Eric Vinesse, Executive Vice President, operational research & development department

There are also six senior managers on the executive committee:

- ▶ Yves Chapot, Managing Partner
- ▶ Sonia Artinian-Fredou, Executive Vice President – mobility services & experiences and new ventures business lines
- ▶ Laurent Bourrut, Executive Vice President – long distance and urban transportation business lines and European regions
- ▶ Adeline Challon-Kemoun, Executive Vice President – brands, sustainable development, communication & public affairs.
- ▶ Jean-Christophe Guerin, Executive Vice President – manufacturing.
- ▶ Serge Lafon, Executive Vice President – mining, off highway, 2 wheels, aircraft business lines and Africa, Asia, Australia, India & the Middle East regions.



Florent Menegaux,
CEO, Groupe Michelin



Raghupati Singhania, Chairman and
Managing Director, JK Tyre & Industries

at Rs 33.66 crore for the quarter ended March 2019, as against Rs 158.8 crore in the year-ago quarter. The reduced profit was blamed on high raw material costs and expenses. According to JK, the cost of raw materials consumed was higher at Rs 1,436.82 crore, as compared to Rs 1,420.08 crore. Total expenses were also higher at Rs 2,665.91 crore as compared to Rs 2,146.54 crore.

During the period, consolidated revenue from operations stood at Rs 2,705.89 crore, as against Rs 2,283.97 crore in the same quarter of last year.

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the company said its net profit rose to Rs 170.57 crore from Rs 63.32 crore in the previous year. Consolidated revenue for 2018-19 was also up, at Rs 10,369.94 crore, compared to Rs 8,397.29 crore in 2017-18.

JK Tyre & Industries Chairman and Managing Director Raghupati Singhania said 2018-19 was a landmark year for the company, since the firm crossed the Rs 10,000 crore-mark, while achieving a robust growth of 24% over the previous year exceeding industry growth. He added that though the fourth quarter's profitability was affected by high raw material prices, the operating margins for the year as a whole rose by 35%. Despite a slowdown in India's automotive sector in the second half of the year, JK Tyre saw volumes increase by 20%.



Jean Dominique Senard, CEO & General Managing Partner, Michelin

9% sales growth in Q1 for Michelin

● French tire and rubber giant Groupe Michelin has reported a 9.3% year-on-year rise in sales at 5.8 billion euro (\$6.5 billion) for the January-March 2019 quarter. The Clermont-Ferrand headquartered company attributed the strong sales during challenging times to a robust price-mix and newly acquired businesses, farm tire manufacturer Camso and engineering company and conveyor belts maker Fenner, which are said to have made a "major contribution" to revenue during the quarter.

During the first quarter of the year, volumes were down 0.5% year-on-year, but Michelin also benefited from a favourable currency effect of 2% during the period. The tire maker

Fall in Conti's Q1 earnings

● Flat sales and a sluggish automotive industry during the first three months of the year were blamed for a 17.1% year-on-year fall in earnings at the German tire and automotive systems giant, Continental AG.

During the quarter, EBITDA fell to 884 million euro (\$993 million) for the first three months of the year. Hanover-headquartered Continental said the results were a solid start to the year, with sales rising while sales were up 0.3% to 11 billion euro (\$12.3 billion). However, CEO Elmar Degenhart said that the group's technology division had helped it to avoid

a substantial downward market trend, with a significant fall in global auto production at the start of 2019. However, he said an upturn was expected in the second half of the year and confirmed previous forecasts for the group's full year 2019 business performance. Dagenhart confirmed that Continental will continue with its restructuring planning this year, which includes preparations for the possible partial IPO of powertrain business, which is to be spun off as Vitesco Technologies.



Elmar Degenhart, CEO, Continental AG

maintained market share within the passenger car and light truck tires segment, despite what it called an environment, which was deeply impacted by falling OE demand. Michelin also cautioned that the market is slightly declining in replacement markets in Europe.

Michelin's volume growth remained firm in the truck tires segment, which it attributed to the offering of new services and solutions. Meanwhile, in the speciality tires segment, which includes mining, aircraft and two-wheel tires, the group said its 2019 growth ambitions were "confirmed", but the segment was affected by supply chain issues in the mining tires area and the focus on margins in OE in the off-road tires area.

Q1 net loss for Goodyear

● For the first three months of this year, US tire giant Goodyear registered a 32.4% fall in operating income, posting a net loss of \$61 million, due to a number of extraordinary items, especially the \$93 million in charges taken related to plans to modernise tire plants in Hanau and Fulda, Germany.

Lower international sales and unfavourable currency translation caused a 6.1% drop in sales to \$3.6



Richard Kramer, Chairman, CEO and President of Goodyear

billion. Improvements in price/mix played a positive role. Unit volumes were down 2.6% to 38 million. Operating income fell to \$190 million, or 5.3% of sales, which Goodyear blamed on lower volume, foreign currency impact, higher raw material costs, as well as weaker results from other tire-related businesses. These negatives were partially balanced out by a favourable price/mix, improved overhead absorption and net cost savings.

Richard Kramer, chairman, CEO and President of Goodyear, said the company had gained momentum in



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the US during the first quarter, based on growth in market share in the consumer and commercial replacement businesses.

The company says it expects to continue to experience challenging global industry conditions through 2019, such as higher raw material costs of about \$300 million as compared to last year, foreign currency headwinds and volatility in emerging markets. However, Goodyear should also enjoy the benefits of the ramp-up of its plant in Mexico and of the TireHub distribution joint venture with Bridgestone Americas, and expects to make gains through the pricing actions implemented last year, as well as sales of higher value-added consumer replacement tires.

ETRMA welcomes progress on new tire label regulation

● The European Tyre and Rubber Manufacturers' Association (ETRMA) has broadly welcomed the outcome of a European Parliament 'plenary



vote' of March 25 on a new tire label regulation (TLR). With the favourable vote and European Commission (EC) approval, granted on March 17, the regulation can now be finalised in 'trilogue' negotiations with the European Council. The vote represents an "advance on some essential points" towards replacing the 2009 Tyre Labelling Regulation, ETRMA said in a March 26 statement. The association also noted that MEPs had completed their report ahead of elections for a new Parliament at the end of May.

EP, European Commission and EU Council – ETRMA urged the institutions to stay focused on the central aims of the new TLR. These, it said, include raising consumer awareness of the tire label and rolling resistance, wet grip and noise performances. Other issues, it said, include: snow/ice logos; label visibility; incentivising safety and lower emissions; enforcement/surveillance; and a product database.

ETRMA, however, went on to express concerns about proposals for

The new EP, it said, will move the TLR file into 'trilogue' negotiations in the second half of the year – allowing for a new regulation to be adopted in early 2020. For the 'trilogues' – between the

Global demand for tubeless tires to grow to \$158Bn

● Demand for automotive tubeless tires across the world is set to exceed \$158 billion this year, rising 6% from \$148 billion in 2018. According to a recent study by the Irish market intelligence supplier Fact MR, demand for tubeless tires will grow at a CAGR of over 6% during the period 2017-2022.

The report also stated that automotive growth, as well as safety and fuel-efficiency concerns, will have a significant impact on the market during the forecast period.

Additionally, the report says that the APeJ region (Asia Pacific excluding Japan) has impressive growth potential, with a projected share of over 32% of the automotive tubeless tire market in 2019. Cheap labour costs and high production of rubber in the region have cut overall production costs in the region. Within APeJ, the market is significantly driven by China and South Korea, which are expected to account for about one-third of the total market share by the end of 2022. By the end of this year, the two-wheeler segment in APeJ is also projected to generate the largest demand for tubeless tires, with over 35% of the market share.



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a standard test method for tire-tread abrasion and for rescaling tire-label performance classes. The latter, it warned, "would result in a flattening of the current label information downwards and be counter-productive."

Sumitomo Rubber starts truck tire production in Brazil

● Sumitomo Rubber has begun production of truck & bus tire at its \$100million manufacturing plant in Fazenda Rio Grande, Parana.

The Japanese tire maker previously imported truck & bus tires for sale in Brazil. The new plant will ensure a more stable supply and reduce foreign exchange risks in the country, SRI noted. Sumitomo expects the market for truck & bus tires in Brazil to grow 2-3% per year "for the foreseeable future". Sumitomo started its Brazilian operations in 2013 and currently manufactures 16,800 units per day of passenger car tires at the Parana factory.

Nokian on track for 2020 start up at US plant

● Nokian Tyres plc is on schedule to begin producing tires commercially by early 2020 at its North American Plant.

The Finnish tire maker said the hiring process is under way, with 200 of the facility's 400 employees expected to be working by year-end.

Construction of the \$360-million (• 320-million)

plant, Nokian's third globally and first in the Americas, was disclosed in May 2017. At full capacity, the plant will produce 4 million passenger, SUV and light truck tires per year, specifically for North American consumers



Nexen set to begin trial production at Czech plant

● Nexen tire Europe is awaiting permission from "appropriate authorities" to start trial production of 15,000 tires daily at its greenfield manufacturing plant in Czech Republic.

Nexen plans to gradually increase the production capacity of the facility to over 12 million units a year. Zatec is Nexen's second manufacturing facility outside Korea, after the one in Qingdao, China. It will be one of the most modern tire manufacturing plants not only in the Czech Republic and Europe, but also in the world. The plant, according to Nexen, will meet the growing demands of the European market, and ensure a stable supply of OE tires for global car manufacturers.





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Murthy leaves Michelin-owned Lehigh Technologies



Kedar Murthy

● Kedar Murthy has left his position as Vice President and General Manager of Lehigh Technologies, to take up a senior management role at Boston Materials Inc.

Murthy, who had been at Lehigh for over 10 years, was previously Executive Vice President of GPX International Tire and before that held senior management roles at Cabot Corp. He helped to develop Lehigh from a start-up to the world's largest supplier of micronised rubber materials and oversaw its acquisition by Michelin in October last year. Bedford, Massachusetts-based Boston Materials announced Murthy's appointment as Chief Commercial Officer at the start of March. The company specialises in the development of carbon-fibre composites for applications including aircraft, wind turbines, electric vehicles and bicycles.

Murthy holds a bachelor's degree in chemical engineering from the Rose-Hulman Institute of Technology and a master's degree in chemical engineering from the University of Wisconsin-Madison.

Goodyear to upgrade, expand Luxembourg tire plant

● Goodyear has disclosed plans to invest \$36 million to increase production of OTR tires and make process improvements at its factory in Colmar-Berg, Luxembourg.

Tire RFID standard on-track for yearend

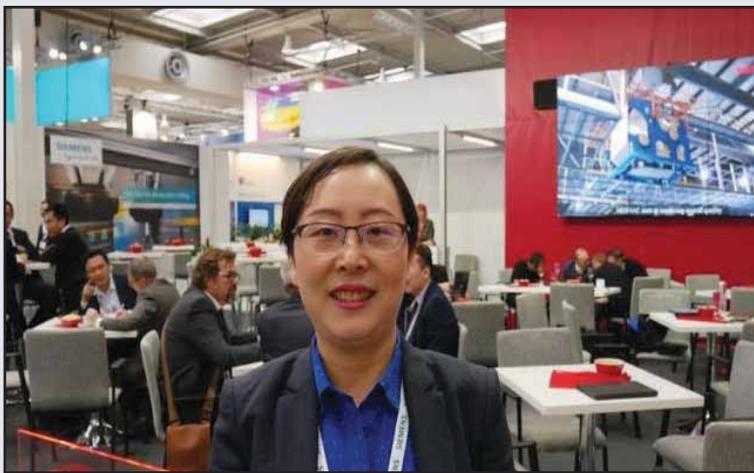
● A universal ISO standard for RFID tire tags remains on track to be published by the year end. Dong Lanfei, Vice General Manager of Mesnac. Dong, along with Pierre Loiret from Michelin, has been co-convenor of the working group that is charged with developing the four-part standard over the last three years.

The first two parts CD 20911 [Embedding methods for RFID tire tags] and CD 20912 [Testing methods for RFID] are set to be published by the end of April, she told *ERJ* at the recent Tire Tech Expo. The next two parts CD 20911 [Embedding methods for RFID tire tags] and CD 20912 [Testing methods for RFID] will be passed in the fourth quarter of this year, Dong added.

Some 60 experts from Austria, Belgium, China, Finland, France, Germany, Italy, Japan, Netherlands, South Korea, Thailand, UK and US are providing input to the working group.

"This is a universal standard, which has involved input from many tire manufacturers, as well as industry and government groups," the Mesnac official emphasised.

Publication of the full standard will be "a very good start from which the industry can really use RFID," the official added.



"The demand for premium OTR tires continues to grow worldwide," said David Anckaert, Vice President of Goodyear's commercial tire business in Europe. The upward trend, added

Anckaert, reflects the expansion of mining and construction operations, as well as developments in the port and industrial segments. As well as meeting growing demand, the investment will enable Goodyear to offer "a complete portfolio of high-quality products and total mobility solutions both for trucks and off-the-road machines."

Goodyear did not quantify the impact on the plant's capacity or workforce. The plant, which opened in 1951, makes medium truck tires in addition to OTR tires. The company is building a second plant in Luxembourg, close to the existing Colmar-Berg factory, for the production of premium passenger tires.



China remains US' largest trading partner for tire sector

● Despite lower exports of passenger and light truck tires to the US in 2018, China was the US' largest trading partner in the tire sector for a second straight year. The value of imports into the US of tires of all kinds last year increased 7.8% over 2017 to \$14.8 billion (Euro13.1 billion), while the value of exports jumped nearly 28% to \$5.23 billion, according to US Department of Commerce data.

As a result, the nation's tire-related trade deficit shrank 6.8% to \$9.6 billion compared to 2017. This is the second straight year the deficit has shrunk. China retained the title as the US' largest trading

partner in tires as the value of its overall exports to the US jumped 21.8% over 2017 to \$2.37 billion. China's increase came largely from higher shipments of medium truck, OTR, farm and other non-highway tires, including record shipments of truck/bus tires of 9.22 million units, a 42.1% jump over 2017. The value of truck/bus tire imports from China

increased 56.2% to \$1.11 billion.

Thailand is at a strong No. 2 with tire imports into the US valued at \$2.23 billion last year, up 20% over 2017. Canada (\$1.58 billion), South Korea (\$1.3 billion) and Japan (\$1.17 billion) rank third through fifth. Mexico, Indonesia, Vietnam, Taiwan and Germany complete the top 10.

U.S. Trading Partners - 2018			
Country	Import Value	% Change	Key Producer Exporters
 China	\$2,373M	21.8%	Cooper, Double Coin, Giti, Guizhou, Maxxis, Sailun, Sentury, Triangle, ZC Rubber, etc.
 Thailand	\$2,231M	20.0%	Bridgestone, Deestone, Double Coin, Goodyear, Linglong, Maxxis, Michelin, Otani, Sentury, Sumitomo*, Vee, Yokohama, ZC Rubber
 Canada	\$1,578M	2.2%	Bridgestone, Goodyear, Michelin
 S. Korea	\$1,304M	-3.0%	Hankook, Kumho, Nexen
 Japan	\$1,166M	6.9%	Bridgestone, Sumitomo*, Toyo*, Yokohama
Others	\$3,165M	6.4%	
Total	\$14,834M	7.8%	

Source: U.S. Department of Commerce, The Bureau's research. *Sometimes includes Dunlop and Falken brands. Zero includes Nitta



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HF Mixing Group bids farewell to Prof. Dr. Andreas



Prof Dr. Andreas Limper was one of the driving forces that built the HF Mixing Group as the world market leader

● The technical progress of mixing processes in the rubber processing industry is closely linked to the work of Prof. Dr. Andreas Limper. He shaped many ideas and the resulting developments. Now, after 28 years of successful work at the HF Mixing Group and ThyssenKrupp Elastomertechnik, the Co-CEO of the HF Mixing Group is largely retiring from his active career.

In future, Prof. Dr. Limper will devote more time to research topics in the industry. As part of his consulting function at the HF Mixing Group, he will actively participate in some of the development projects pursued there. Through his teaching and research activities at the IKV at the RWTH Aachen, he will provide advice and support to the scientific working groups in the field of rubber. International research co-operations, e.g. with the University of Groningen on the subject of Artificial Intelligence, are also planned. In addition to these tasks, Prof. Dr. Limper will in future act as 1st Deputy Chairman of the DKG Executive Board.

Donald Chen appointed CEO of ARLANXEO

● Leading synthetic rubber company ARLANXEO recently appointed

India base for Finland's Cimcorp

● In response to growing demand for automation from India's tire industry, the Finnish manufacturer and integrator of turnkey robotic handling solutions, Cimcorp Oy, is opening a new location in Chennai, India in June. The company said the Indian base would help it serve Asian customers "better and faster" and would serve as a customer support location for Indian customers.



Pekka Natri (L) with Masatoshi Wakabayashi, CEO

Masatoshi Wakabayashi, CEO of Cimcorp, said the decision to set up a presence in India was a "logical step" at this stage. The company's operations in India will be led by Pekka Natri. The India plant will enable Cimcorp to expand the comprehensive service network it provides along with its parent company, Murata Machinery Ltd and is intended to strengthen its position as a leader in material flow automation for tire manufacturing.

Donald Chen as new CEO, with effect from May 1, 2019. The company was



Donald Chen, CEO ARLANXEO

established in 2016 as a joint venture between the German chemicals major, LANXESS and Saudi Aramco. It has been a wholly-owned subsidiary of Saudi Aramco since the beginning of this year. Chen succeeds Jorge Nogueira, who is retiring after almost 40 years in the chemical and pharmaceutical industry.

While thanking Nogueira for his leadership and dedication, Abdulaziz M. Al-Judaimi, Chairman of the

ARLANXEO Shareholders' Committee and Saudi Aramco's Senior Vice President of Downstream, said: "With Donald Chen we have an experienced leader and industry expert joining the company. He has spent many years of his working life in the Asia-Pacific region, a key growth region for ARLANXEO. Donald joins ARLANXEO in a critical market environment and we are confident he will lead the company through the current transition and drive growth."

Chen moves to ARLANXEO from Archer Daniels Midland Company (ADM), where he was responsible for operations in the Asia-Pacific region, including Australia and New Zealand, since January 2016 and was also a member of the Executive Council of ADM. He previously worked as Vice President at Sadara Chemical Company, a joint venture between Saudi Aramco and Dow Chemical. He also served as Regional Vice President for Hydrocarbon & Energy at Dow Chemical and as Vice President for Major Projects in the Asia-Pacific and Middle East region, amongst other positions held. Chen has a Master's degree in engineering and a doctorate from Delft University of Technology in the Netherlands.

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Mesnac forms strategic partnership with Hainan Rubber

● China's rubber machinery manufacturing giant, Mesnac, recently signed a three-year strategic cooperation agreement with Hainan



Rubber. The two companies will jointly develop the world's first smart plant for rubber preliminary processing, cooperate in R&D for rubber materials and products, as well as establish an industrial fund to invest in "related areas." They will cooperate on the development of air springs. Mesnac said target applications include shock-absorbing mounts for high-speed rail, tire tread materials and products for new-energy sectors.

The two Chinese companies hope to formulate new industry standards on EVEC rubber. MESNAC will help Hainan Rubber to develop smart rubber robot to enhance productivity and reduce cost to boost intelligent upgrade of rubber industry in all aspects. Developed by Mesnac, EVEC is manufactured through liquid mixing and is claimed to improve tire performance in terms of wet grip, wear and rolling resistance.

Top glove forms sustainability committee

● Malaysian rubber gloves maker Top Glove Corp. has formed a five-member committee to make sustainable practices an integral part of its business, according to a statement issued by the company.

The committee will assist the Malaysian glove giants board to implement its 'environmental, social and economic strategy and initiatives'. The team will be led by Sharmila Sekarajasekaran, an independent non-executive director at the company.

Rubber sector raises Brexit chemicals concerns

● The British Rubber & Polyurethane Products Association (BRPPA) has voiced its concerns regarding the UK's provisions for regulation of chemicals in the event of a 'no-deal' Brexit. The UK government has announced plans to transpose Europe's REACH legislation into UK law and further cooperate with the European Chemicals Agency (ECHA) if the situation arises. However, the chemical and allied industries regard these proposals as "unworkable and unsustainable. The proposals, rely on the "unrealistic assumption that UK companies have ready access to testing data." BRPPA added that the provisions could increase animal testing and impose "unsustainable" additional regulatory cost on UK companies. The government assumes "that a UK version of REACH can be achieved in just two years – a regime that took the EU and a fully-resourced ECHA 10 years to implement."



Mesnac and Hainan Rubber also plan to develop smart technologies for rubber-harvesting and processing, as well as safer, more automated rubber machinery and IoT-based plants. They plan to take advantage of the "preferential policies" in the Hainan Free Trade Zone where Hainan Rubber is based.

Kraton names new Chief Financial Officer

● Kraton Corp. has announced the appointment of Atanas Atanasov as Senior Vice President and Chief Financial Officer (CFO), effective from May 6.

He takes over from Christopher Russell, Kraton's Chief Accounting Officer and interim CFO since



Atanas Atanasov

November 2018.

Atanasov most recently served as CFO of motor fuels distributor Empire Petroleum Partners and previously held senior positions at NGL Energy Partners and GE Capital.

China's rubber industry slows down in 2018

● Last year, China's National Bureau of Statistics says the country's rubber industry's business revenue remained flat at 698 billion yuan (\$100.8 billion). The number of companies in the rubber sector, including tire makers, fell by 79 to 3,565, following a drop of 324 companies in 2017.

The value of the rubber industry's exports rose by 4.4% in 2018 to \$22.3 billion, while total profit was up by 2.1% to \$4.4 billion, compared to the 2017 figures.





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Rubber machinery makers robust under pressure

● Given the market pressures that emerged during the year – international trade disputes, a cool-down in some tire markets and Brexit among them – the international tire &



rubber machinery sector delivered quite a robust performance in 2018.

Figures from the 39 companies that completed the survey both this year and last year, show a sales total of \$4,077.2 million, just 0.8% lower than a year ago. On the other hand, 2018 brought an abrupt halt to the previous year's bounce-back, when a similar like-for-like comparison in the survey recorded a 15.5% year-on-year increase in sales.

There was a more settled look to the ranking by sales of the major tire & rubber machinery manufacturers after some jostling for top position over recent years. HF Group emerged

as clear leader, helped by 15.5% year-on-year growth in sales of tire & rubber machinery to \$462.3 million for 2018.

This helped put some clear water between HF and closest rival VMI, which grew sales by 1.8% to \$402.5 million. At MESNAC, sales of tire & rubber machinery grew by 6.0% to \$274.1 million, while Kobe Steel reported growth of over 5% to \$206.0 million.

Brexit: Firms urged to transfer REACH registrations

● The European Chemicals Agency (ECHA) has called on companies to prepare for a no-deal UK withdrawal from the European Union before the end of April 12. Companies should transfer their UK registrations for REACH to an EU-27-based company before the deadline and not leave the transaction "to the last minute." Up to the end of March, more than 4,800 registrations had either been transferred or were awaiting a legal entity change, according to the ECHA.

REACH has approximately 12,000 UK registrations in total, the Helsinki-based agency also noted in its statement issued on April 3. In February, ECHA opened a "Brexit window" in REACH regulations for



UK-based companies to make timely changes to their registrations. The window will stay open until the end-of-day on April 12, the current default date for the UK to leave the European Union.

Mesnac bullish on China's rubber machinery industry

● China's rubber machinery market is expected to touch •8 billion (60 billion yuan), helped by requirements for backward-integration among leading tire makers, said Mesnac.



"Chinese manufacturers are also gaining popularity among global top clients," said Mesnac's Vice President Guan Bingzheng during his speech at the China Rubber Conference held in Guangzhou this March.

Despite a drop in China's tire

Marangoni GRP adds fourth franchise in India

● Marangoni GRP Private Ltd (MGPL) has signed up its fourth full service franchisee in India, with the establishment of Xtramiles in Chennai. A JV between Marangoni and GRP of India, MGPL is a commercial vehicle tire retreader employing the Italian partner's Ringtread spliceless retread technology.

Established in 2015, MGPL has set up three other franchisees in the Indian states of Karnataka, Haryana and Kerala over the last 12 months. In addition to the Chennai unit, MGPL said on April 15 that it was also in various stages of commission for four more franchisees.

"We believe that India offers great potential for growth and we continue to invest in the market," said Giuseppe Marangoni, Marangoni group VP. Ringtread technology, he added, can help bring operational costs down in Indian fleets.

With Xtramiles at Chennai, the company has entered "the league of large trucking centres," said Harsh Gandhi, MGPL director. "India's retreading industry needs new ideas to move forward and MGPL expects to be at the forefront of such initiatives," he added.



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- ▶ Rubber Aid - PA 46F
- ▶ Rubber Aid - PA 49
- ▶ Rubber Aid - PA 50
- ▶ Rubber Aid - PA 50P
- ▶ Rubber Aid - PA 50T
- ▶ Rubber Aid - PA 60
- ▶ Rubber Aid - PA 60T
- ▶ Rubber Aid - PA 70
- ▶ Rubber Aid - PA 276

Zinc Free Processing Additives

- ▶ Rubber Aid - ZF 254
- ▶ Rubber Aid - ZF 254M
- ▶ Rubber Aid - ZF 212
- ▶ Rubber Aid - ZF 16
- ▶ Rubber Aid - ZF 42
- ▶ Rubber Aid - ZF 222
- ▶ Rubber Aid - ZF 80



production and sales in 2018 – for the first time over the past 28 years – Guan believes the country's car parc will stabilise at 600 million at least, compared with today's 230 million. Annual tire demand in the country will peak at 1.5 billion units, compared with its 700 million units total designed annual capacity in 2018. The sector is becoming increasingly concentrated, said Guan, with revenue of the top 10 Chinese rubber machinery makers' accounting for 89% of the country's total in 2018 – compared with an 83% share just a year ago.

Guan, however, conceded that there remained technology significant gaps between Chinese manufacturers and global leaders. "We are particularly lagging behind in extrusion, calendaring and cutting equipment," the Mesnac Vice President commented.

Zhongce optimises mixing with 'industrial brain'

● Zhongce Rubber Group has adopted a 'big data' system, jointly developed with Alibaba, to enhance the performance of its tire plants. Dubbed the 'industrial brain,' the technology has been in use at the company's manufacturing facilities since 2016 to optimise mixing



processes.

Analysis software processes a series of data including rubber materials' production country, supplier, batch number as well as performance of final compounds. Solutions generated range from optimised combinations of materials from different sources to the ideal process parameters to produce compounds with more stable quality. The system has been in constant iteration, collecting new



Commissioning of Lehmann & Voss' new laboratory and pilot plant building

● The relocation of major laboratory and pilot plant facilities to the new laboratory building at the Hamburg-Wandsbek site has now been successfully completed ahead of schedule. A total of more than • 4.5 million has been invested in the new building, which is equipped with state-of-the-art laboratory and pilot plant facilities and modern building services. These facilities are used for quality testing of raw materials and sales products, for the development of our own products and for formulation development based on our products as support for our customers.

"Since its foundation, Lehmann&Voss has paid great attention to maintaining a high level of expertise in its business units and to marketing products tailored to the individual customers," explained Managing Partner Dr Thomas Oehmichen. "By constructing the new laboratory and pilot plant building, we are aiming to ensure that we can retain and continue expanding our leading position in the field of plastics (compounds, 3-D printing, masterbatches and composites) but also in raw materials for rubber as well as for paint and varnish," he added.

The Wandsbek plant is the site for the very essential stage in the development of products that are then produced globally in the LEHVOSS Group plants in Wandsbek, Solingen, Kunshan (China) and Pawcatuck (USA).

information such as data for the latest material batches, according to Zhongce's marketing department manager Lv Li.

Kobe Steel takes over L&T rubber machinery JV

● Kobe Steel Ltd has acquired full ownership of its Indian joint venture L&T Kobelco Machinery Private Ltd (LTKM), Kobe Steel has announced. Established in 2010, LTKM began as a tire & rubber machinery joint venture 51% held by Larsen & Toubro and 49% by the Japanese company.

Now a 100% subsidiary of Kobelco Machinery Asia, LTKM will relaunch in May as Kobelco Industrial Machinery India Pvt Ltd (or KIMI).

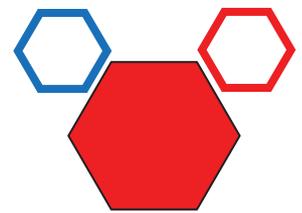
The full takeover, it said, will "enable more flexible management,

increase marketing capabilities, and strengthen cost competitiveness [of production]."



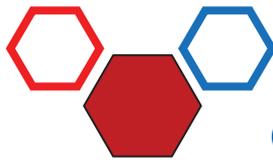
Through LTKM, the Japanese machinery major added that it also aims to further expand in India, Southeast Asia and Europe.

LTKM manufactures rubber mixers and twin-screw, roller-head extruders used in making tires, mainly for road vehicles and construction equipment.



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- Sidewall deflection Profile
- Electrical Resistivity
- Non-Destructive Testing
- Air Retention Test
- Rolling Resistance
- High Speed Uniformity
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LANXESS to deploy artificial intelligence in product development

● LANXESS is set to break new ground when it comes to the development of customer-specific high-performance plastics. By deploying artificial intelligence (AI), the specialty chemicals company is looking to drastically cut the amount of time it takes to develop new materials. For this, LANXESS has entered into close collaboration with Citrine Informatics, a US-based AI company specialising in data-driven materials development.

The two companies have launched a pilot project aimed at gauging the potential of AI for the plastics production. The aim is to further optimise the glass fibers that LANXESS uses for reinforcing many of its high-performance plastics and ultimately to enhance the performance of the materials.

Glass fiber sizing plays a key role here. Glass fibers that are mixed with the plastics to increase their mechanical performance are surrounded with a sizing. This helps the glass fibers to bond more strongly with the plastic matrix, ultimately ensuring the properties required of high-performance plastics. The process of optimizing glass fiber sizing is complex, laborious and time-consuming. "We expect AI to cut the development time for optimized formulations by more than half," says Dr. Axel Tuchlenski, Head of Global Product and Application Development in the LANXESS High Performance Materials business unit. "This will enable us to not only offer our customers even better tailor-made products, but also reduce time to market."

AI to recommend formulations

In traditional product development, the complex composition of glass fiber sizings and the numerous variables when manufacturing high-performance plastics require extensive testing, the results of which can be hard to predict. AI can make an important contribution in this case by getting the most out of the available data. Supplied from thousands of measurement results from previous formulations, raw material information and a host of additional data, AI algorithms calculate forecast models for improved test configurations and parameters, enhance these models on the basis of the measurement results from each individual test, and finally propose an optimum



formulation. This procedure makes product development much faster than traditional methods.

For Jörg Hellwig, who heads the LANXESS Digitalization Initiative, the pilot project for the development of high-performance plastics is just the beginning for AI at LANXESS. "Artificial Intelligence is a vital technology for creating innovation from the myriad data within the Group."

LANXESS launched its digitalisation initiative in 2017, establishing a dedicated team. It is headed by Hellwig in his capacity as Chief Digital Officer who reports

directly to Matthias Zachert, Chairman of the Board of Management of LANXESS AG. The initiative's core action areas are to develop digital business models, introduce new technologies throughout the value chain, develop and utilise big data, and foster digital expertise among employees.

Citrine Informatics is the industry leader in the application of data-driven development methods to materials science known as materials informatics. The Citrine Platform accelerates the development of materials and chemicals using the power of materials data and AI. Citrine has been recognised for technology innovation by the World Economic Forum as a Tech Pioneer 2017, and won the Best-in-Biz Start-up of the Year Award in 2018. Citrine Informatics collaborates with some of the best universities in the world, including Carnegie Mellon University in Pittsburgh, Pennsylvania, and the University of California, Berkeley.

5.3% growth for belting

● Global demand for rubber conveyor belts is forecast to rise 5.3% per year through 2022 to \$ 7.8 billion, according to a study from The Freedonia Group.

Textile reinforced conveyor belts will remain the most common type of rubber conveyor belt. The lower costs associated with these belts compared to steel cord or other speciality belts and their suitability for

use in many applications contribute to their leading position. Steel cord rubber conveyor belts are expected to experience faster increase in demand through 2022, with sales stimulated by growth in mining activity, the largest market for rubber conveyor belts. The need for substantial lengths of conveyor belts and belts with an array of resistance strengths boosts the overall value of this market segment.

Demand for rubber conveyor belts in the Asia-Pacific region is forecast to advance 6.9% annually through 2022

to \$ 4.4 billion. Gains will be well above the global average as ongoing industrialisation efforts and rising mechanisation rates in many regional mining markets bolster conveyor belt demand. The Asia-Pacific region is a significant net exporter of conveyor belts, with a trade surplus in 2017 equivalent to 11% of production. China is by far the leading global exporter and a key source of low cost belting products, while Japan primarily exports higher end conveyor belts.

LANXESS
Energizing Chemistry



Chem-Trend Sets Industry Standard for Automotive Clutch and Brake Manufacturing

Chem-Trend, a world market leader in the development, manufacturing, and marketing of high-performance release agents, purging compounds, and other process chemical specialties, announced today the arrival of a breakthrough release agent designed for automotive suppliers focused on the manufacturing of clutches and brakes. This game-changing water-based solution improves part quality, protects tooling investments, and maximizes operational productivity for customers.

Through Chem-Trend's acquisition of Huron Technologies, additional product technology, manufacturing, and process know-how was combined with Chem-Trend's breadth of release agent development expertise. These shared resources enabled Chem-Trend's scientists and engineers to accelerate the development of highly advanced and innovative products for the molding of friction components.

"Due to its leading-edge technology and high performance, our new offering is positioned as the gold standard for the production of molded friction components such as automotive clutches and brakes," said Livia Chen, Business Development Director – Rubber, Chem-Trend. "For automotive suppliers, this new release agent not only provides remarkable results, but in some applications it can achieve those results with less release agent being required."

Key benefits of the new release agent offering:

- Better quality initially, and over time
- Improved cycle times due to a cleaner, more consistent mold

- Less buildup, requiring fewer cleanings and less related labor
- Extended life of molds and equipment, thanks to less wear and cleanings over time

Chem-Trend is focused on helping its customers become more productive, more efficient, safer, more sustainable, and more prepared for what's to come. Through a global supply chain, customers have access to Chem-Trend's discoveries worldwide, with regional teams ready to tailor solutions for their specific needs. For more information on Chem-Trend's innovative products and technology for molding of friction components, visit ChemTrend.com.

About Chem-Trend

Chem-Trend is the most proven partner in the world for release agents, purging compounds, and other related process chemical specialties. Using a customer-centric approach combined with deep research and development, Chem-Trend is dedicated to providing expertise and innovative solutions to improve product quality, production efficiency, waste reduction, and sustainability for its customers now and well into the future. Chem-Trend offers a globally integrated network of experienced, knowledgeable, and insightful production and technical experts, with leading-edge research and development facilities supporting myriad industries and needs. Chem-Trend serves customers through offices in North America, South America, Asia, and Europe and is part of the Freudenberg Group.

For more information, visit ChemTrend.com

MAY 2019

▶ **Recovered Carbon Black 2019**

21-22 May, Berlin, Germany
Contact: Adriana Lobo
 EU Events Marketing Manager
 Tel: +44 (0) 1372802085
 email: alobo@smithers.com
 web: www.carbonblackworld.com

▶ **4th Innovative Truck & Tire Development 2019**

4th Innovative All Season & Winter Tire Development 2019
 27-28 May, Amsterdam, Netherlands
Contact: Eleonora Fresia
 Tel: +420234697955
 email: eleonora@tbmgroup.eu
 web: www.tbmgroup.eu

JUNE 2019

▶ **Malaysia Commercial Vehicle Expo (MCVE)**

20-22 June, Kuala Lumpur
 Organised by Asian Trucker Exhibition Sdn Bhd
Contact: Stefan Pertz
 Tel: +60 16 521 9540
 email: info@asiantrucker.com
 web: www.asiantrucker.com

▶ **The European Carbon Black Summit**

26-27 June, London, UK
 Organised by ACI (Europe)
Contact: Rohan Baryah
 Tel: + 48 61646 7022
 email: rbaryah@acieu.net
 web: www.wplgroup.com/aci/event/carbon-black-summit

▶ **Rubber & Tyre Vietnam 2019**

26 - 28 June - Saigon Exhibition Center, HO Chi Minh City, Vietnam.
Contact: Ellie Duong, Marketing Executive, VEAS Co. Ltd.
 Tel.: +84-28 38488561/62/63
 Email: ellie.duong@veas.com
 Web: www.veas.vn

▶ **Latin Tyre Expo 2019**

26-28 June - ATLAPA Convention Center Panama, Rep. of Panama
Contact: Linda Bassitt, Latin Expo Group LLC
 Tel: + 1 786 293 5186
 email: linda@latintyreexpo.com
 web: www.latintyreexpo.com

AUGUST 2019

▶ **RUBEXPO**

▶ 09-11 August, BMICH, Colombo – Organised by Smart Expos & Fairs India
Contact: Sudha. V, Project Manager
 Tel: +91 9952966152
 email: sudha@smartexpos.in
 web: www.rubexpo.com

SEPTEMBER 2019

▶ **RubberTech China 2019**

18-20 September, 2019
 Shanghai new International Expo Centre, Shanghai, China
Contact: CURC - Ella Liu / Willow Sun
 Tel.: +86-10-58650277
 Fax: +86-10-58650288
 Email: expo@chrubber.com
 Web: http://en.rubbertech-expo.com

▶ **Tyrexpo India 2019**

26 - 28 September, Chennai Trade Centre, Chennai, India
Contact: Rahul Bhatia
 Tel.: +91 8527765556
 Email: rahul.bhatia@singex.com
 Web: www.tyrexpoindia.com

OCTOBER 2019

▶ **Arab Rubber Expo 2019**

09-10 October 2019
 Sharjah Expo Centre, UAE
Contact: Peram Prasada Rao - TechnoBiz
 Tel: +66 2 933 0077
 Fax: +66 2 955 9971
 Email: peram@technobiz-asia.com
 Web: www.rubbertechtechnology-expo.com

▶ **K - 2019**

16-23 October: Duesseldorf, Germany
Contact: Desislava Angelova / Sabrina Giewald
 Tel: +49-211-4560 240 /
 Fax: +49-211-4560 8548
 Email: AngelovaD@messe-duesseldorf.de
 GiewaldS@messe-duesseldorf.de

▶ **TPE & Silicone Elastomers World Summit 2019**

26-27 November: Austria Trend Hotel Savoyen Vienna
Contact: Katie McGowan
 Tel: +44 (0) 1372 802000
 Email: kmcgowan@smithers.com

DECEMBER 2019

▶ **India Rubber & Tyre Show 2019**

20-22 December, Gujarat University Exhibition Centre, Ahmedabad
 Organised by Rubber Manufacturer's Welfare Association,
Contact: Yashodhar Kahate, Honorary Secretary
 Tel: +91 9227972801
 email: ykahate@yahoo.co.in
 web: indianrubbershow.co.in

JANUARY 2020

▶ **RubberTech India 2020**

8-10 January, Chennai Trade Centre, Chennai, India.
Contact: Willow Sun (Ms)
 Senior Project Manager
 China United Rubber Corporation, China
 Tel: 0086 153779792
 Email: rts@chrubber.com
 Web: www.rubbertech-expo.com

MARCH 2020

▶ **Global Rubber, Latex & Tyre Expo 2020**

11-13 March 2020, Bangkok International Trade & Exhibition Centre, Bangkok, Thailand
Contact: Peram Prasada Rao - TechnoBiz
 Tel: +66 2 933 0077
 Fax: +66 2 955 9971
 Email: peram@technobiz-asia.com
 Web: www.rubbertechtechnology-expo.com

APRIL 2020

▶ **Tyrexpo Africa 2020**

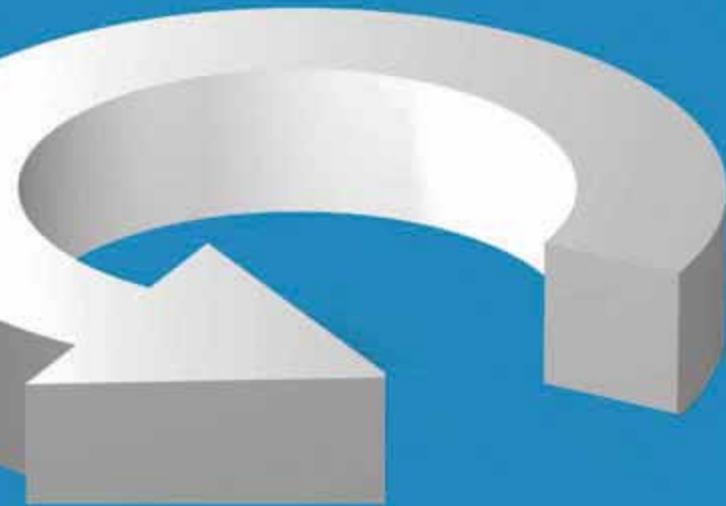
April 2020 at Gallagher Convention Centre, Hall 2 Johannesburg, South Africa
Contact: Zann Lee (Ms)
 Manager (Events Marketing), SingEx Exhibitions
 Tel: DID (65) 6403 2531
 Email: zann.lee@singex.com
 Web: www.singex.com

OCTOBER 2020

▶ **IRC 2020**

15 - 17 October, Chennai Trade Centre, Chennai, India
Contact: KJ Janakar, Chairman, IRI C/o. Helar Marketing & Consultants Pvt. Ltd.
Contact: 044 24480324
 Email: helar@vsnl.com
 Web: www.iri.net.in

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BALAJI RUBBER GROUP



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Namakkal, Tamilnadu, India



Balaji Rubber & Reclaims (P) Ltd.,
Tumkur, Karnataka, India



Eswar Rubber Products (P) Ltd.,
Penukonda, Andhrapradesh, India



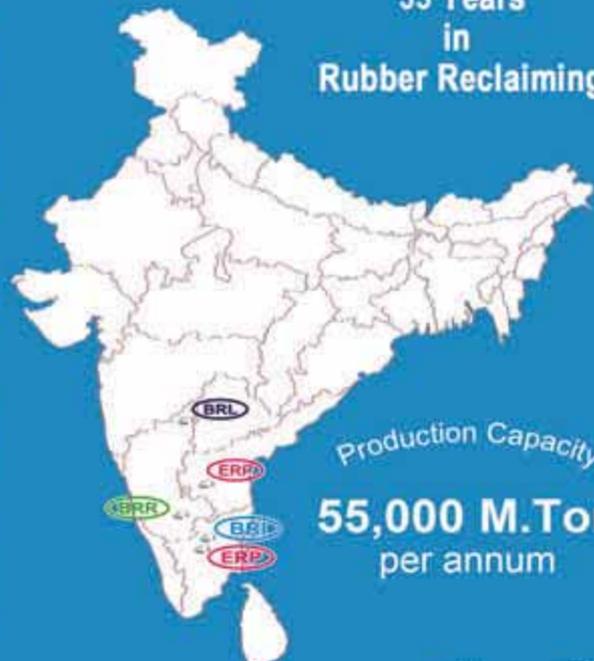
Bidar Rubber & Reclaims (P) Ltd.,
Bidar, Karnataka, India



Eswar Rubber Products (P) Ltd.,
Namakal, Tamilnadu, India

(Unit - II)

35 Years
in
Rubber Reclaiming



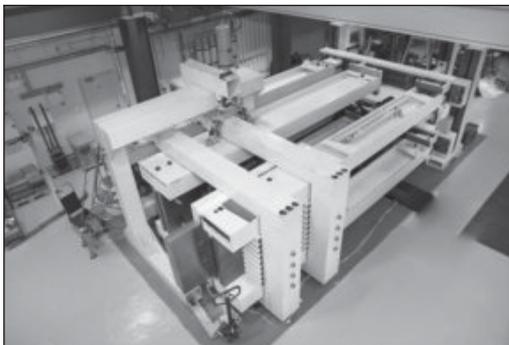
Production Capacity
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TARRC adds 'world's first' seismic-bearing tester

●MRB's Tun Abdul Razak Research Centre (TARRC) has added a "unique" earthquake-bearing testing machine to its rubber research facilities in Brickendonbury. The unit is the centrepiece of a new 'advanced rubber engineering test laboratory', established with funding of £2.5 million (Euro 3.0 million) from the Malaysian government.

TARRC and the Malaysian Rubber Board (MRB) have for decades pioneered the development of NR-based protection systems for buildings and civil-engineering structures. The seismic-bearing rig "is



Opening the new lab (l to r): Dr Fauzi Mohd Som, TARRC CEO, Dato' Dr Zairossani bin Mohd Nor, director general of the MRB, Sankara Narayanan Nair, chairman of MRB board, Yew Kok Kwey, TARRC board member and Wan Ahmad Asmady Wan Md Din, TARRC board member.

a first-of-its-kind in the world [and] will ensure that we remain global leaders in this area," MRB board chairman Sankara Narayanan Nair said.

The facility will provide "the earthquake engineering community with a research and testing resource that will enhance and promote the use of Malaysia technology for seismic protection." Built and designed by TARRC engineers, the machine can test full-scale bearings under earthquake conditions, as well as other large structural rubber-based bearings. Bearings of up to 1,000mm in diameter

can be tested under combinations of axial, shear and tilting conditions, in-line with the requirements of international standards.

The unit can apply compression loads of 10MN and tension loads of 2MN, while the shear-loading specifications includes 1MN load and +/-220mm at 0.5Hz.

The unit offers test facilities for manufacturers of seismic products who would like to sell their products within the EU under the CE marking scheme, said Hamid Ahmadi, deputy director of research at TARRCs. "On the other hand, as a research institute, we need to be ahead of the game in knowing where the industry is heading," added Ahmadi.

Thailand to cut NR exports in late May

●Following a delay in implementation of previously agreed cuts, Thailand, the world's top-rubber producer, reduced exports by 126,240 tonnes by the third week of May. In March, at a meeting of the International Tripartite Rubber Council (ITRC), made up of Thailand, Indonesia and Malaysia, the three countries agreed to cut supply of the commodity, in an effort to support falling prices. The three nations account for about 70% of the world's NR production and decided on export cuts of 240,000 metric tonnes collectively.

Thailand delayed the measure because of its general election in March, and cut exports between May 20 and September 19, according to Yium Tavarolit, acting governor of the Rubber Authority of Thailand. He said Thailand would proceed as agreed by the three countries, and will assess results every month. He added that if prices don't change, then the measure will have to be reviewed,

World NR production falls 10% in January

●World production of natural rubber (NR) fell 10.1% year-on-year to 1.08 million tonnes in January, according to the Association of Natural Rubber Producing Countries (ANRPC). Tropical storms in southern Thailand contributed to the decline, the association said in its latest market trends report, which was published on April 2. Demand for NR rose 1.3% to 1.15 million tonnes during January, secretary-general Nguyen Ngoc Bich also noted in the update.



Favourable market fundamentals and a price-rally in the crude oil market supported the recovery of NR prices in January, said the ANRPC leader. Progress in trade talks between US and China and a decision by OPEC to cut production helped prices "stay firmer" over the period, he added.

The Trend

India is estimated to have produced 78,000 tonnes of natural rubber (NR) during December 2018. The total output during the first three quarters of the fiscal (i.e., April to December 2018) fell 7.1% to 487,000 tonnes from the same period a year ago. The production preliminarily estimated for January 2019 is 75,000 tonnes, up 2.7% from 73,000 tonnes produced during the same month a year ago.

The country consumed 105,480 tonnes of NR during December 2018 up 5.6 % from the quantity of 99,860 tonnes consumed a month ago (November 2018). A total quantity of 921,940 tonnes was consumed during April to December 2018, up.13.3% from the same period in the previous year. The consumption increased 16.2% in auto-tire sector and 6.4 %in general rubber goods sector. Preliminary estimate suggests that the country consumed 97,000 tonnes of NR during January 2019.

India imported 42,714 tonnes of NR during December 2018 making the total volume landed in the country during April to December 2018 at 449,108 tonnes compared to 333,321 tonnes landed during the same period

a year ago. The country exported 517 tonnes of NR during December 2018 compared to 20 tonnes shipped during the same month a year ago. The total volume exported during April to December 2018 was revised as 3,720 tonnes compared to 4,991 tonnes exported during the same period in the previous year.

Taking into account the trends in production, consumption, import and export, it is estimated that growers, traders, processors and consumers in the country had held a total stock of 276,000 tonnes of NR at the end of December 2018 compared to 271,000 tonne of stock held at the same point of time a year ago.

As regards synthetic rubber (SR), the country produced 31,571 tonnes during December 2018. A total quantity of 281,427 tonnes was produced during April to December 2018 representing a 19.1% rise on year. The country consumed 59,655 tonnes of SR during December 2018 making the total during April to December 2018 at 522,675 tonnes, up 12.2% on year.

PRICE OF NATURAL RUBBER (Rupee per 100 Kg)								
Month / Year		RSS-5	RSS-4	RSS-3	Latex	(60% drc)	ISNR 20	SMR 20
		Domestic		Intl.	Domestic	Intl.	Domestic	Intl.
February	2018	12054	12413	10963	14385	12733	10993	9421
March	"	12137	12438	11286	14090	13297	11426	9389
April	2018	11790	12012	11343	13678	12742	10787	9077
May	"	12194	12419	11808	14640	14053	11959	9715
June	"	12263	12646	10920	14550	12615	12112	9382
July	"	12687	12919	10308	14077	11927	12782	9093
August	"	13074	13267	10320	16308	11682	13055	9343
September	"	12683	13048	10451	17073	12077	12361	9638
October	"	12314	12780	10556	16273	12015	11536	9748
November	"	11676	12156	9772	13922	11092	11020	8902
December	"	11831	12196	10116	14558	10810	11263	8914
January	"	12018	12466	11202	14622	11435	11657	9568
February	"	11820	12433	11554	13880	12140	11600	9903

Note: Domestic price refers to Kottayam market, international RSS 3 refers to Bangkok market and international price of latex and SMR 20 to Kuala Lumpur market.

PRODUCTION & CONSUMPTION OF NR & SR

Type-wise Production & Consumption of NR & SR	(Metric Tonnes)					Percentage increase (+)/ decrease (-) of (3) & (4)
	December 2018 (1)	December 2017 (2)	April 2018 to December 2018 (3)	April 2017 to December 2017 (4)	April 2017 to March 2018 (5)	
PRODUCTION						
NATURAL RUBBER (NR)						
Ribbed Smoked Sheet (RSS)	57640	56500	332330	371600	478445	
Solid Block Rubber	10080	10805	84350	79865	114875	
Latex Concentrates(DRC)	7100	7895	52485	52425	75070	
Others	3180	2800	17835	20110	25610	
Total	78000	78000	487000	524000	694000	-7.1
SYNTHETIC RUBBER (SR)^P						
Styrene Butadiene (SBR)	24070	22120	186241	149326	209938	
Poly butadiene (BR)	7081	10000	91504	81680	113666	
Others	420	900	3682	5220	7617	
Total	31571	33020	281427	236226	331221	19.1
Total NR & SR	109571	111020	768427	760226	1025221	1.1

CONSUMPTION						
NATURAL RUBBER (NR)						
Ribbed Smoked Sheet (RSS)	45985	44270	382045	377190	513710	
Solid Block Rubber	48975	46160	448420	360455	493410	
Latex Concentrates(DRC)	8090	6880	70885	57740	79765	
Others	2430	2290	20590	18675	25325	
Total	105480	99600	921940	814060	1112210	13.3
Out of which Auto Tire Manufactures	75232	69606	659001	566992	772162	16.2
SYNTHETIC RUBBER (SR)^P						
Styrene Butadiene (SBR)	31805	28445	268425	226145	311555	
Poly butadiene (BR)	16810	16695	150735	136145	184130	
Others	11040	11720	103515	103690	138290	
Total	59655	56860	522675	465980	633975	12.2
Out of which Auto Tire Manufactures	41267	39342	358368	324188	437754	10.5
Total NR & SR	165135	156460	1444615	1280040	1746185	12.9
Out of which Auto Tire Manufactures	116499	108948	1017369	891180	1209916	14.2

PRODUCTION & CONSUMPTION OF RR

(Metric Tonnes)

	December 2018	December 2017	April 2018 to December 2018	April 2017 to December 2017	April 2017 to March 2018
RECLAIMED RUBBER (RR)	(1)	(2)	(3)	(4)	(5)
Production @	12700	11980	108060	97195	131575
Consumption	12540	11800	106920	96450	130510
Out of which Auto Tire Manufactures	4663	4542	37861	37861	50866
Stock with Manufacturer	13005	11545			

(end of the Month/Year

@:Indigenous purchase by Manufacturers

IMPORT/EXPORT & STOCK OF NR & SR

Import(p)

Natural Rubber	42714	36136	449108	33321	469760
Synthetic Rubber	32974	27130	256403	255839	338189
Total NR & SR	75688	63266	705511	589160	807949

Export(p)

Natural Rubber	517	20	3720	4991	5072
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IMPORT OF DIFFERENT FORMS OF NR DURING DECEMBER 2018^p

(Tonnes)

TYPE	Quantity	% Share
RSS Grades	5098	11.9
Solid Block Rubber	36778	86.1
Latex Concentrates (drc)	803	1.9
Others	35	0.1
Total	42714	100

p:provisional

TYPE-WISE EXPORT OF NR DURING DECEMBER 2018^p

(Tonnes)

Type	Quantity	% share
RSS Grades	0	0.0
Solid Block Rubber	484	93.6
Latex Concentrates (drc)	33	6.4
Others	0	0.0
Total	517	100

SIAM
India's: Production, Domestic Sales & Exports data for the month of April 2019 and Growth

Category	Production			Domestic Sales			Exports (Number of Vehicles)		
	April			April			April		
	2018	2019	% Change	2018	2019	% Change	2018	2019	% Change
I Passenger Vehicles (PVs)									
Passenger Cars	232,379	216,820	-6.70	200,183	160,279	-19.93	36,930	44,939	21.69
Utility Vehicles(LUVs)	98,363	91,055	-7.43	79,136	73,854	-6.67	13,830	11,837	-14.41
Vans	16,326	12,384	-24.15	19,185	13,408	-30.11	161	53	-67.08
Total Passenger Vehicles (PVs)	347,068	320,259	-7.72	298,504	247,541	-17.07	50,921	56,829	11.60
II Commercial Vehicles (CVs)									
M&HCVs									
Passenger Carriers	3,779	3,248	-14.05	2,825	2,876	1.81	410	478	16.59
Goods Carriers	31,491	27,116	-13.89	25,779	21,849	-15.24	2,397	848	-64.62
Total M&HCVs	35,270	30,364	-13.91	28,604	24,725	-13.56	2,807	1,326	-52.76
LCVs									
Passenger Carriers	5,023	4,347	-13.46	4,403	4,439	0.82	160	168	5.00
Goods Carriers	50,704	47,618	-6.09	40,042	39,516	-1.31	3,207	1,326	-58.65
Total LCVs	55,727	51,965	-6.75	44,445	43,955	-1.10	3,367	1,494	-55.63
Total Commercial Vehicles	90,997	82,329	-9.53	73,049	68,680	-5.98	6,174	2,820	-54.32
III Three Wheelers									
Passenger Carrier	86,183	81,406	-5.54	40,063	36,362	-9.24	49,530	45,146	-8.85
Goods Carrier	11,121	11,308	1.68	9,917	9,900	-0.17	187	829	343.32
Total Three Wheelers	97,304	92,714	-4.72	49,980	46,262	-7.44	49,717	45,975	-7.53
IV Two wheelers									
Scooter/Scooterette	626,184	463,824	-25.93	661,007	489,852	-25.89	38,193	32,497	-14.91
Motorcycles/Step- Throughs	1,408,820	1,334,292	-5.29	1,230,046	1,084,811	-11.81	250,903	259,751	3.53
Mopeds	75,647	68,818	-9.03	67,708	63,725	-5.88	4,761	1,722	-63.83
Total Two wheelers	2,110,651	1,866,934	-11.55	1,958,761	1,638,388	-16.36	293,857	293,970	0.04
Quadracycle	237	1,140	381.01	0	225	-	186	1,062	470.97
Grand Total of All Categories	2,646,257	2,363,376	-10.69	2,380,294	2,001,096	-15.93	400,855	400,656	-0.05

Society of Indian Automobile Manufacturers (13/05/2019)

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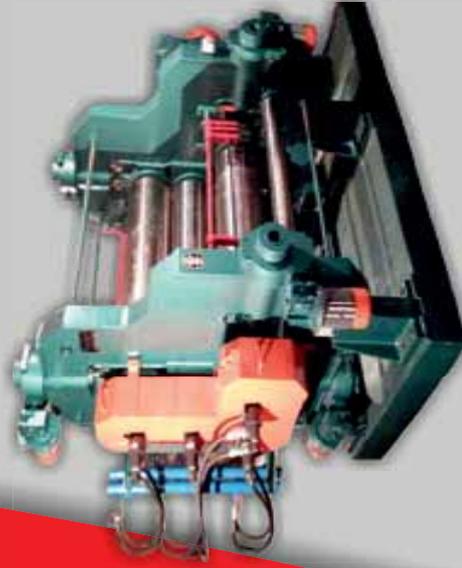
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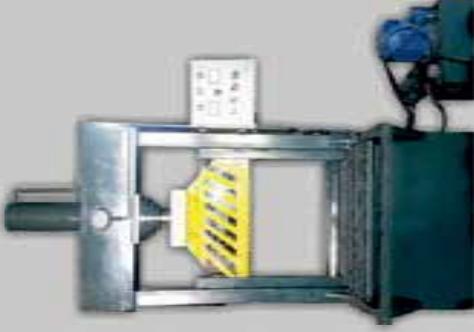
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Tyrexpo Asia 2019 and World Rubber Summit 2019: Key Highlights

Tyrexp Asia, the region's most well-attended tire B2B platform for automotive players in manufacturing, distribution, wholesale, retreading and fleet operation, celebrated another winning edition in 2019.

The 12th edition, which was held from March 18-21, boasted of the highest visitor participation in the series. It was held in conjunction with World Rubber Summit (WRS) where business leaders, governments, NGOs and academic experts discussed "paths to solution" for an industry that is undergoing great transformation. Well-established as key components of World Rubber Week, Tyrexpo and WRS are the focal points of knowledge exchange and trade platforms for the global rubber industry. This year, Tyrexpo Asia was co-located with GarageXpo Asia and

Automotive Aftermarket Asia to connect with a wider audience reach.

Event Lineup: WRS, followed by Tyrexpo Asia 2019 co-located with GarageXpo Asia and Automotive Aftermarket Asia.

It was organised by SingEx Exhibitions Pte Ltd, the International Rubber Study Group and Enterprise Singapore.

Venue: Tyrexpo Asia was held at Singapore EXPO Halls 1 & 2, while the WRS conference was hosted at Park Royal on Beach Road.

Participation: Over 2,500 visitors attended Tyrexpo Asia in 2019, a 2.6% growth in visitors versus 2017. It is the highest visitor participation rate across past editions. WRS received 244 participants, a 33% hike in overall delegate number versus 2017.

Market mix of attendees

► Tyrexpo Asia saw increased global footprint from 82 countries in 2017 to 96 countries in 2019.

► Visitors came from diverse sectors such as distributor/wholesalers (46%), tire manufacturers (14%), retailer/garage workshops (12%), parts, tools and equipment manufacturers (6%), fleet and logistics (5%), as well as chemicals and rubber manufacturers (4%)

► Hosted in Singapore this year, WRS recorded growth in delegate numbers across Southeast Asia (2% from 2017 to 2019), Europe (33% from 2017 to 2019), Africa (42% 2017 to 2019) and America (57% from 2017 to 2019).

► The attendees were primarily from the manufacturing sector (19%), government bodies (11%), natural rubber (NR) producers (9%), agriculture and commodities (8%).

OBITUARY

Biswanath Dutta passes away

Sixty five-year-old Biswanath Dutta passed away on March 10. He had an active career for more than 50 years in the field of Rubbers/polymers. He served in various companies in India and abroad over these years. He started his career from footwear technology and then joined the Bengal Water Proof Limited (Duckback), one of the pioneering companies in non-tire products from where he retired as the Technical Director. He had a very special skill and knowledge for developing a large number of rubber products. He was attached to various organisations like TATA Steel, HINDALCO etc. as an advisor /consultant after his superannuation.

He served as Chairman of IRI Kolkata Branch for a long period and expanded the activities of rubber in the eastern region. He was an expert committee member for Rubber Technology Centre, IIT Kharagpur as well as a member of many similar organisations. His contribution towards academics is immense, as he delivered a series of lectures several years since the inception of the Rubber Technology course at Rubber Technology Centre, IIT Kharagpur. He also delivered special lectures in conferences and short-term courses over the years. He contributed two chapters in the book "Rubber Products Manufacturing Technology" published by Marcel Dekker, New York, USA.

RIP



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j.patel@aaakarexhibition.com

Ajit Shah : +91 81550 01193
atit@aaakarexhibition.com

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More Information



Driving Success Through Technology

Analysis of Carbon Black Dispersion at the Marco and Micro - scale level in Rubber Compounds in Relation to Monte Carlo Modelling of Network Formation



Dr. Charles R Herd

Dr. Charles R Herd, Dr. Lewis B Tunnidiffe, Dr. Tyler C Gruber, Dr. Seth L Young
Birla Carbon R & D Marietta, Georgia USA

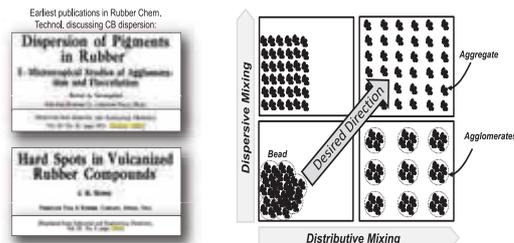
Agenda

- Carbon Black *Macro*dispersion
 - Dispersive versus Distributive Mixing
 - Impact of Dispersion on Compound Performance
 - Standard Test methods for measurement of dispersion
 - Interferometric Microscopy for Measurement of Carbon Black Dispersion
- Carbon Black *Micro*dispersion
 - *Macro* versus *Micro* dispersion
 - AFM studies of aggregate micro-dispersion
 - Monte Carlo simulations of aggregate packing / networking

SHARE THE STRENGTH

Carbon Black *Macro*dispersion was Studied as Early as 1928 using Light Microscopy; the Transmission Electron Microscope was not Invented yet

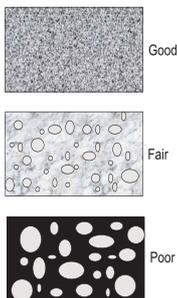
Carbon black dispersion in rubber:
Well known as a critical parameter for rubber performance



SHARE THE STRENGTH

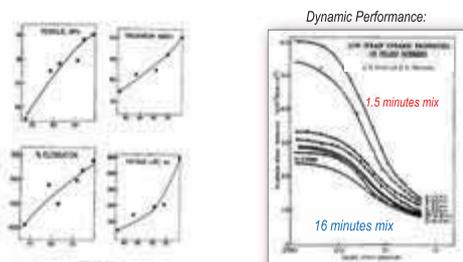
Impact of Carbon Black Dispersion on Rubber Compounds; Worth the Effort to Achieve a Good Dispersion; Quality and Performance Benefit Greatly

- Dispersion = degree of incorporation of added reinforcing materials such as carbon black into rubber compounds
- Primarily interested in carbon black dispersion
- Concerned with "macro-dispersion" or presence of agglomerates > 5 μm in size
- Dispersion level affects compound performance
 - Reduced product life / poor performance
 - Poor product appearance
 - Poor processing uniformity
 - Waste of raw materials
 - Excessive energy usage



SHARE THE STRENGTH

Good Carbon Black *Macro*dispersion has the Potential to Yield Significant Performance Benefits for Tires and Mechanical Rubber Goods



Plots from Paper entitled "Characterization of Dispersion" by W.M. Hess (PCAT, Vol. 64, No. 3, July-August 1991) show that Improved Dispersion has the Potential to Significantly Improve Treadwear, Tensile and Fatigue Life.

SHARE THE STRENGTH

Birla Carbon - Confidential

Test Methods for Carbon Black *Macro*dispersion Measurement in Rubber have Progressed over Time becoming more Quantitative, Rapid and Yielding Agglomerate Size Distributions

ASTM D2663: Standard test methods for carbon black – dispersion in rubber

- Visual inspection:** Subjective and non-quantitative, Rapid.
- Agglomerate count (Light Microscopy):** Best method when used with Image Analysis and can be made objective and quantitative. Time consuming due to microtoming of samples.
- Roughness via profilometer:** One dimensional, small sampling but is quantitative.
- Roughness via Interferometric Microscopy or IFM:** Three-dimensional with good sample size, quantitative, and yields agglomerate distributional properties. Rapid.

ASTM D7723: Standard test method for rubber property – macro-dispersion of fillers in compounds

- Reflected light method:** Two Dimensional, quantitative and can yield agglomerate size distributions, but depends on reflectivity which can vary by polymer. Rapid.

SHARE THE STRENGTH

Dispersion Characterization is Best Performed via Microtomed Thin Sections for Direct Visualization of Agglomerates; however it is Time Consuming. See ASTM D2663

LM micrograph

SEM micrograph

SHARE THE STRENGTH

Macrodispersion Measured by Light Microscopy with Image Analysis makes the LM Method Objective and Quantitative; Stereology Predicts the Area Fraction of Agglomerates in the Microtomed Thin Section is Equivalent to the Volume Fraction

- Threshold images to isolate the carbon black agglomerates
- Agglomerate area is summed to obtain an Area Fraction (AF) or Volume Fraction
- AF directly proportional to volume fraction of undispersed carbon black
- Dispersion index (D2663):

$$DI = 100 - \left(\frac{AF \cdot S \cdot v}{L} \cdot 100 \right)$$

- S = swelling factor
- v = carbon black volume in agglomerate
- L = volume fraction of carbon black

NR/BR sample:
AF = 25.2%, L = 20%, v = 0.7
LM DI = 11.0

SHARE THE STRENGTH

Interferometric Microscopy (IFM); a Modern, Non-contact, Three-dimensional Measurement Method for Characterizing Surface Roughness

- Surface metrology instrument
- Utilizes white light interference
- Non-contact method to eliminate the influence of differences in polymer friction
- Measures three-dimensional surface topography
 - 0.5 μm lateral resolution
 - < 1 nm vertical resolution
 - 5 mm vertical range

SHARE THE STRENGTH

Interferometric Microscopy (IFM) Methodology Utilizes the Concept of Light Wave Interference for High Resolution (nm in Z direction) even with White Light

- A light source is partially reflected from a flat reference surface and from the sample
- The microscope objective and reference surface are scanned in the z-direction
- Digital camera detects the movement of the interference fringes
- Fringe movement is converted into sample topography by computer analysis

SHARE THE STRENGTH

IFM Measurement of Surface of Razor Cut Cross Section of Tensile Slab Compound Showing Three-Dimensional Surface Roughness of Peaks and Valleys that Represent the Carbon Black Agglomerates

LM Reflected Image of Razor Cut Surface of Tensile Slab

IFM Fringe Image

IFM Contour Image

SHARE THE STRENGTH

IFM Data Analysis Output Provides a Rich Data Set for a Deeper Understanding of the Nature of the Carbon Black Dispersion and Impact of Mixing Strategies and Compound Formulations

IFM can extract many different results from the topographic map

- Roughness**
 - RMS, average heights
 - Swedish roughness (roughness of center 85% of data)
- Peak and Valley Statistics**
 - Areas, sizes, heights, aspect ratio
 - Peak and Valley Area Fraction (or Area Fraction of Carbon Black Agglomerates)

$$IFM\ AF = \frac{\text{total area of all peaks and valleys}}{\text{total image area}}$$

SHARE THE STRENGTH

Macrodispersion is the First Level of Dispersion Required for Good Compound Performance, but the *Micro*dispersion is also Very Important and Much More Difficult to Measure and Quantify

Macro versus Micro dispersion:

- macro-dispersion** (macro-agglomerates)
- micro-dispersion** (Microagglomerates, Filler Network Composed of Individual Aggregates, Inter-Aggregates Spacing)

Carbon black inclusion length scale

SHARE THE STRENGTH

Measurement of *Microdispersion* is very Important in Understanding Hysteresis Development (RR and Wet Traction) and Carbon Black Phase Distribution in Elastomer Blends

- Carbon Black has the most Impact on Hysteresis Development in a Rubber Compound as a Result of Networking
- In DMA testing, the Low Strain Region of the Elastic Modulus Response is thought to be Primarily Influenced by the Carbon Black Network. (Payne Effect).
- Tangent delta as a function of temperature is also significantly impacted by the microdispersion controlling the Rolling Resistance (tan delta at 60°C) and Wet Traction (tan delta at 0°C) prediction.
- It is thus important to be able to Characterize the Carbon Black Network and Parameters such as the Inter-aggregate Spacing or Nearest Neighbor Distance may be Determined by such Techniques as Atomic Force Microscopy.

SHARE THE STRENGTH

Atomic Force Microscopy studies of the Carbon Black Aggregate *Microdispersion*

Sample preparation

- Ultra cryo-microtome thin sections
- Silicon wafer support

AFM technique

- Tapping mode with Phase Contrast.
- Allows differences in elasticity, friction or adhesion to be determined.
- Room temperature under water (to eliminate capillary adhesion from humidity)

SHARE THE STRENGTH

AFM studies of aggregate *Microdispersion* Showing Features Present in the *Microdispersion*

Carbon black particulate features in AFM scans:

N234/eSBR 50 phr

- > 5x5 μm scan sizes
- > Aggregates
- > Micro-agglomerates
- > Approx. 2K features

SHARE THE STRENGTH

The Carbon Black Network may be Defined by the Nearest Neighbor Distance using Image Analysis Techniques

Microdispersion (networking) parametrization:

Threshold to discriminate particles and apply mask
Calculate nearest neighbor distance (NND) as network parameter

$$NND = \frac{\sum_{i=1}^{n-1} d_i}{n}$$

d_i = distance between feature and its nearest neighbor
 n = total number of features

SHARE THE STRENGTH

The Carbon Black Network may be Defined by the Nearest Neighbor Distance using Image Analysis Techniques

Microdispersion (networking) parametrization:

Frequency %

Nearest Neighbor Distance / nm

Threshold to discriminate particles and apply mask
Calculate nearest neighbor distance (NND) as network parameter

$$NND = \frac{\sum_{i=1}^{n-1} d_i}{n}$$

d_i = distance between feature and its nearest neighbor
 n = total number of features

SHARE THE STRENGTH

AFM studies of aggregate *Microdispersion* in a Summer Tire Tread Compound

Experimental study: various carbon black PCR tire formulations

Component	Loading / phr
sSBR (OE)	96,25
BR	30
Carbon Black	75
TDAE oil	5,75
Zinc Oxide	4
Stearic Acid	2
6PPD	2
Microwax	2,5
TMQ	2
Sulphur	1,9
TBBS	1,5

$\gamma(\theta) = \frac{\theta r}{h}$

- > 8 mm diameter x 2 mm thick cylinder
- > Dynamic strain sweep at 60 °C, 0% mean strain

SHARE THE STRENGTH

AFM studies of aggregate *Microdispersion* for Summer Tire SSBR/BR Compound with Carbon Black or Fxn. Carbon Black or Silica Reinforcing Materials

Dynamic characterization: significant changes in G' and tan delta achieved through changes in reinforcing materials and SSBRs

SHARE THE STRENGTH

AFM studies of Aggregate *Microdispersion* show a Good Correlation of Nearest Neighbor Distances with Delta G' and tan delta (Summer Tire SSBR/BR Compound with Carbon Black or Fxn. Carbon Black or Silica)

Microdispersion NND dynamics correlation shows a good correlation as related to properties dependent upon networking

$R^2 = 0.84$

$R^2 = 0.92$

To be able to evaluate aggregate packing from a fundamental standpoint it is useful to conduct theoretical modelling of aggregate packing in three-dimensional volumes; allows rapid evaluation and understanding.

SHARE THE STRENGTH

Monte Carlo Simulations of Aggregate Packing for Fundamental Understanding of Carbon Black Microdispersion / Networking

How do the morphological properties of carbon black affect Microdispersion and filler networking?

TEM/AIA

SHARE THE STRENGTH

Monte Carlo Simulations of Aggregate Packing

Monte Carlo methodologies allow us to generate and pack aggregates in 3D volumes simulating networks / microdispersion:

- Generation of CB aggregate population guided by TEM/AIA data.
- 'Randomly' add/pack aggregates into a volume.
- No simulation of the rubber compound under deformation is attempted.

Data extraction from simulations:

- Parameterization of filler networking e.g. nearest neighbor distance.

Exploration of CB loading and morphological variables:

- Aggregate size distribution
- Particle size distribution

SHARE THE STRENGTH

Assumptions used for Monte Carlo Simulations of Aggregate Packing

Example: simple case of non-aggregated spheres (where PSD = ASD)

- Log-normal distribution of particle sizes (mean PS = 15 nm)
- Packing simulations $f(\text{loading}=15,30,60,120 \text{ phr}, \text{PSD Polydispersity Index}=1.5 \text{ and } 2.5)$
- Run each simulation variable x20

SHARE THE STRENGTH

Monte Carlo simulations of aggregate packing: Nearest Neighbor Distances Decrease with Increasing Loading and show a Wider Distribution

Probability distributions generated from 20 simulation runs for each variable in the study

Data is shown for a range of loadings from 15 to 120 phr (0.7 to 38% volume)

Mode of NND shifts to smaller values when loading is increased

SHARE THE STRENGTH

Monte Carlo simulations of aggregate packing: A Broader PSD Increases the Average Nearest Neighbor Distance in Alignment with Expectations which can Result in Lower Hysteresis

- Broadening of the PSD (HI=2.5) results in significant shift to larger distances of the NND distribution
- Change in level of filler networking and hysteresis is demonstrated.

SHARE THE STRENGTH

Monte Carlo Simulation Demonstrates How a Broader PSD Impacts Properties such as Inter-particle Distance or Nearest Neighbor Distance

$$\overline{NND} = \frac{k\phi^{-1/3} - 1}{d_p}$$

Broadening particle size distribution increases the average inter-particle distance and results in a reduction in filler networking (hysteresis)

SHARE THE STRENGTH

Changes in NND Become Critical when Mechanical and Electrical Properties have a non-linear Dependence on Inter-particle Distance

e.g. electron tunneling

$$I \propto \exp(-\alpha d)$$

- the work function energy barrier,
- the electron charge,
- the electron mass,
- the Planck's constant,
- applied voltage,
- the sample distance.

Percolation region

SHARE THE STRENGTH

Summary and Conclusions

- Macrodispersion can be effectively measured with old (LM) and New (IFM) Techniques and are very Important in determining the Viscoelastic Performance of All Rubber Compounds.
- Microdispersion Measurement / Parameterization is also extremely important. There are currently no standard methods available, but techniques such as AFM show good promise for use in correlation of NND to viscoelastic properties.
- Monte Carlo modelling of aggregate networks provide a route to understanding which morphological factors control networking and why.

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Venue Qingdao International Convention Center

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3. Finished non-tyre rubber products
4. Chemicals, additives and raw materials
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Exhibitors

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Automotive Tyre Manufacturers' Association



Rajiv Budhraja
Director General, ATMA

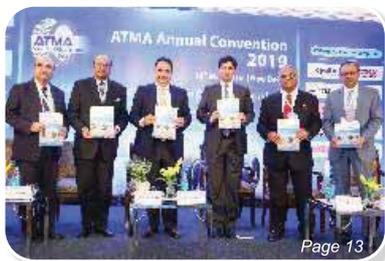
Editorial

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ATMA Annual Convention 2019
New Delhi | 14th Mar. 2019



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India's quarterly GDP growth continues to slide with economy expanding by 6.6% during October-December'18 period, its slowest pace in five quarters. Weak consumer demand and investments are believed to have retarded the economic growth. For the entire fiscal year, Central Statistics Office (CSO) has estimated the growth rate of 7%, lower than previous several years. To make matters worse, concerns over a slowdown in global growth are also hurting India's exports. India's outbound shipments grew 2.4 percent annually in February, slower than 3.7 percent in January.

Especially Auto sector has borne the brunt of the decline in economic growth. The lack of demand, which started from the festival season in October, has continued resulting in higher inventories. Deceleration in production can be witnessed in the third quarter across segments. Among the segments which have been the most impacted by the volume slowdown are the two-wheelers. Stiff fuel prices, weak rural demand coupled with higher cost of ownership (owing to an increase in insurance costs) has dampened the sentiment.

However growth drivers remain intact and India continues to be the fastest growing economy in the world. Economists have pitched for a monetary policy boost to support growth. Benign inflation in times of weakening growth makes a compelling case for another rate cut. It is clear that in view of weak global environment, India will have to lean on domestic factors.

In the run up to the release of World Economic Outlook (WEO) survey report, International Monetary Fund (IMF) has recently stated "Important reforms have been implemented and we feel more reforms are needed to sustain this high growth, including to harness the demographic dividend opportunity, which India has."

It is believed private sector investments will start looking up once the electoral uncertainty is out of the way and the upcoming financial year is poised to witness a resurgence in growth .

Rajiv Budhraja
Director General

ATMA Member Companies





Industry Trends - Tyre

Tyre Production - India

Apr-Dec'19 & YoY Comparison

All Figs in Lakh Nos
■ FY18 ■ FY19

Having dropped to single digits in Nov **Truck & Bus** tyre production reverted to double digit growth in Dec'18.



Beginning the year with a negative growth, **Motorcycle** tyre production has continued to chart a positive territory.



Passenger Car tyre production which has remained steadily higher than previous year levels till Oct, contracted in Nov & Dec'18.



Overall tyre production in India maintained a comfortable lead over previous year's curve in the first half.



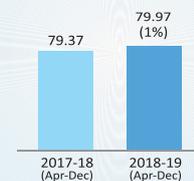
Tyre Exports - India

Apr-Dec'19 & YoY Comparison

Truck & Bus tyre exports from India in Apr-Dec'18 period remained largely unchanged from the previous year's level.



In number terms, **overall** tyre export went up marginally in the Apr-Dec'18 Period.



Passenger car tyre exports recovered in the third quarter but overall stood lower by 2% in Apr-Dec'18 period.



Note: Figs in brackets indicate % change YoY



Vehicle Production - India

Apr-Feb FY19 & YoY Comparison

After a revival in Jan this year, **M&HCV** production again slipped in Feb'19 in view of weak sentiment.



All Figs in Lakh Nos.

■ FY 18 ■ FY 19

LCV production has been mirroring the growth trend in M&HCVs.



Having made a smart recovery in Jan, **Passenger Vehicle** production contracted by 5% in Feb'19.



+ Including P. CAR, MUV/SUV/VANS.

Motorcycle production, which has witnessed a steady growth in comparison to year-ago period, though lately the growth has subsided.



Tractor production has been witnessing double digit growth before turning negative in Feb'19.



For third month running in Feb'19, production in **Scoters (2/3 wheelers)** witnessed a contraction.



Note: Figs in brackets indicate % change YoY

Unit(s): 1 Lakh = 100,000; 10 Lakhs = 1 Million; 100 Lakhs/10 Million = 1 Crore.

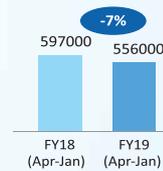


Natural Rubber - INDIA

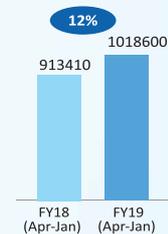
Apr- Jan (FY19) & YoY Comparison

All Figs in MT
■ FY 18 ■ FY 19

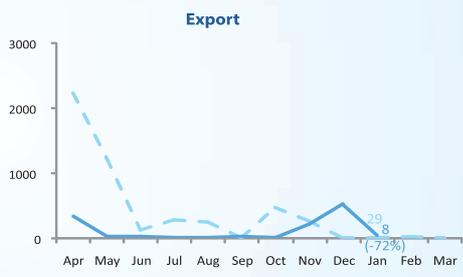
Having bounced back in the months of Sept-Oct YoY, **NR Production** has lost momentum lately with production contracting in the last 3 months ending Jan'19.



NR Consumption has maintained a steady upward trend with consumption of more than one lakh tonnes per month in 8 out of 10 months. Jan'19 however has witnessed a dip.



NR Imports have stood higher than previous year to meet the demand. Peak season has witnessed a decline in import volumes.



NR Stock at the end of Jan'19 stood higher at 296,000 tonnes.



Average **NR price** stood lower in Jan'19 YoY.



Note: Figs in brackets indicate % change YoY





Global NR Overview (ANRPC* Countries)

Jan - Dec'18 & YoY Comparison

All Figs in '000 Tonnes
■ 2017 ■ 2018

The pace of **NR Production** growth in ANRPC countries has slackened lately with a static or negative growth during Oct-Dec'18 period. Overall production growth in Jan-Dec period is 5%.

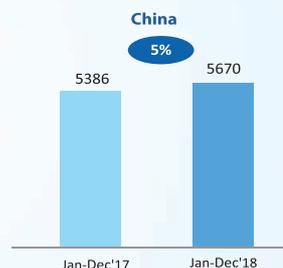


NR Consumption has remained consistently higher in comparison to previous year with a growth of 5% during Jan-Dec'18 period.



NR consumption went up by a robust 20% in **India** during Jan-Dec'18. In the same period, the consumption went up by 5% on a much higher base in **China**.

NR Consumption YoY (INDIA vs. CHINA)



Figs in brackets '(' indicates % change (YoY).

*ANRPC - Association of Natural Rubber Producing Countries

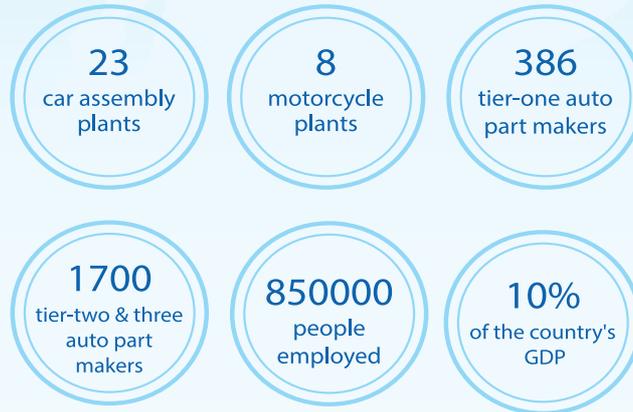
(Member countries : Cambodia, China, India, Indonesia, Malaysia, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand & Vietnam)



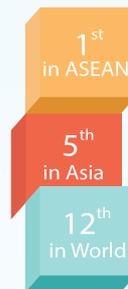
Country Focus: Thailand

Automotive industry in Thailand

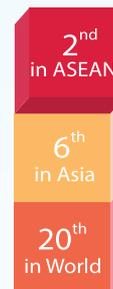
- The automotive industry in Thailand was founded during 1950s as part of a government effort to upgrade the economy.
- Thailand is the largest Car manufacturer in the South East Asia, with 23 car assembly plants, 8 motorcycle plants, 386 tier-one auto part makers and 1,700 tier two and tier three auto part makers.
- Strongest automotive cluster in Southeast Asia, employing 8,50,000 people and contributing 10% of the country's GDP.
- As regards the Thai automotive sector's global position, its volume of production places it 12th in the world rankings, 5th in Asian Rankings and 1st in the ASEAN rankings. The domestic market for automobile is, in terms of sales, 20th in the world, 6th in Asia and 2nd in ASEAN.



In Production



In Domestic Sales



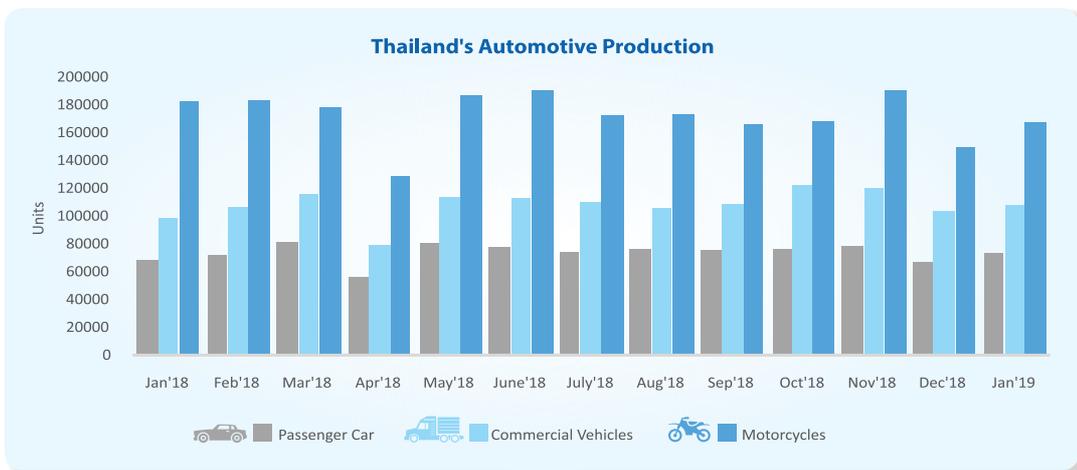
Average Monthly Production in 2018



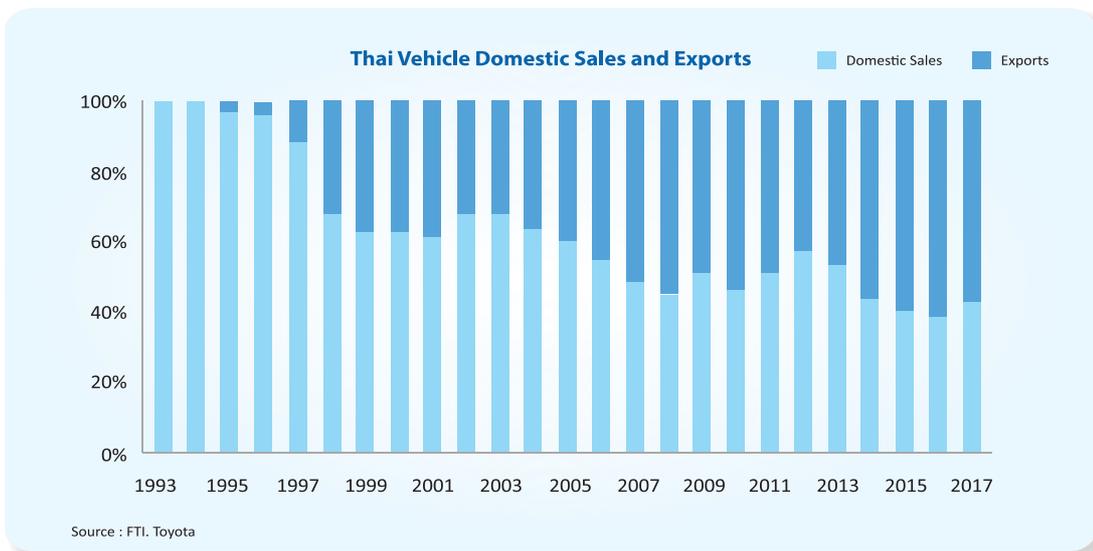
- According to the statistics of The Thai Automotive Association, in the year 2018, the average monthly production of Motorcycles stood at 1.71 lakh units, commercial vehicles at 1.07 lakh units and passenger cars at 0.73 lakh units.



Country Focus: Thailand



The automotive market has switched to an increased focus on the export market since 2008, and with the exception of 2012 and 2013, the years of the first car buyers scheme, the number of vehicles exported has increased steadily.





Country Focus: Thailand

Outlook 2019

In 2019, Thailand's domestic automotive market is expected to contract by 2% to 5% while EV sales growth is projected to remain impressive between 76%-83%.

Factors impacting Thailand's automotive market in 2019

- More stringent Credit Policy
- High Household debt
- Delay in general election
- Uptrend in interest rates

Factors boosting EV Growth

- Government incentives offered to eco car makers to produce eco Evs
- Cheaper, affordable retail prices for EV cars.
- Transfer of advanced technology to local manufacturers

Domestic Automotive Market-2019 Projections

Vehicle Type	2018		2019 (Projected)	
	Sales Volume	YoY %	Sales Volume	YoY %
EV	21,000	75%	37,000-38,500	76%-83%
HEV	12,200	270%	25,100-26,050	106%-114%
PHEV	8,745	1%	11,500-12,000	32%-37%
BEV	55	104%	400-450	627%-718%
Eco Cars (ICE)	1,71,000	37%	152,000-157,000	(-11%)-(-8%)
Others	8,38,000	14%	791,000-814,000	(-6%)-(-3%)
Total domestic automotive sales	1,030,000	18%	980,000-1,010,000	(-5%)-(-2%)

Thailand's Automotive Exports

Impact on Thai Exports

- Thai auto export to Europe will be pressured by the relocation of production bases to countries in the region, nearer to end consumers, in an effort to reduce logistics and transportation costs. These include countries like Hungary, Netherlands, France and Finland, for instance.
- Emission controls in Europe will also contribute to the reduction in Thai auto exports to the region.
- The United States-Mexico-Canada Agreement (USMCA) will come into effect from 2020 onwards, which will tighten control over where the vehicles are originally manufactured from. This would potentially slow down Thai auto export to the membership countries.
- Thailand can limit the negative impacts by ramping up production and exporting EVs to Europe and USMA member countries, which heavily promotes EV adoption.



Thailand's Automotive Exports

Thailand's automotive export market will experience gradual growth in 2019

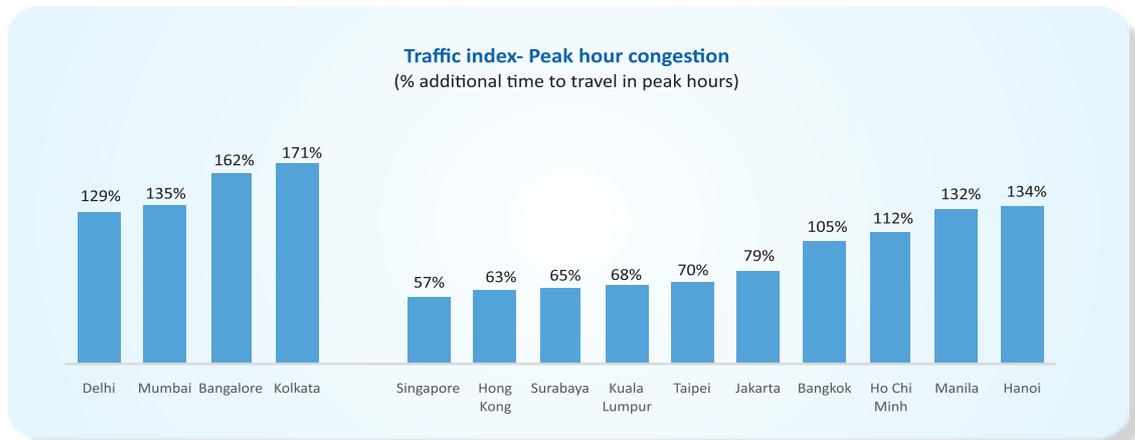
- Thailand's auto export growth has outpaced domestic sales, making up approximately **60%** of Thai automotive sales.
- In 2019, Thailand's auto export volume growth is projected to grow gradually by **1-4%** pressured by global economic slowdown and relocation of production base to countries in Europe.
- However, auto export volume to Vietnam is expected to grow notably by **14-22%** in 2019 spurred from high demand for Thai automobiles and it is considered a high potential market in 2019 due to:
 - 1) The ease of import restricting regulation imposed under Decree 116
 - 2) Relocation of passenger cars manufacturing base into Thailand for auto products to be re-exported back to Vietnam
 - 3) Higher average income among the Vietnamese population
 - 4) More affordable small engine eco cars, amid high oil price in Vietnam.

Automotive Export Market: 2019 Projections

Countries	2018		2019 (Projected)	
	Sales Volume (Vehicles)	YoY %	Sales Volume (Vehicles)	YoY %
Vietnam	53,400	44%	61,000-65,000	14%-22%
Europe	123,000	-14%	1,18,000-1,23,000	(-4%)-(0%)
Overall	1135000	-1%	11,50,000-11,80,000	1%-4%

India Stats

Indian cities most congested



Indian cities are the most congested during peak hours amongst any other in Asia. Traffic index is 129% for Delhi and 162% for Bengaluru compared to 67% in rest of Asia Pacific major cities. Due to this congestion, traffic during peak hours in major cities, arterial roads (13 in Delhi) is plying 50-60% slower than the speed these roads were built for. While private car ownership in the last 10-15 years has been growing at ~8% CAGR, road length has only grown at ~3.5% CAGR.

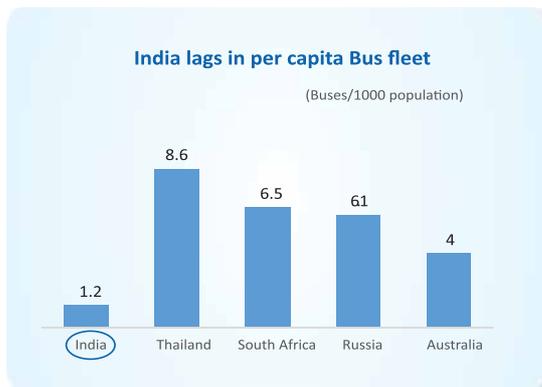
India's key logistics Parameters versus Global

Logistics Parameter		India	Global
Avg. Truck Speed	(km/hr)	30-40	60-80
Avg. Freight Rail Speed	(km/hr)	24	25-35
Airport waiting time - Export/Import	(Hr)	50/182	12/24
Turnaround time at Ports	(Hr)	84	7(HK & Singapore)
Logistics performance Index (2018)	(Rank)	44	US: 14; China: 26
Logistics cost% of country's GDP	(%)	13%	7-8% (developed countries)

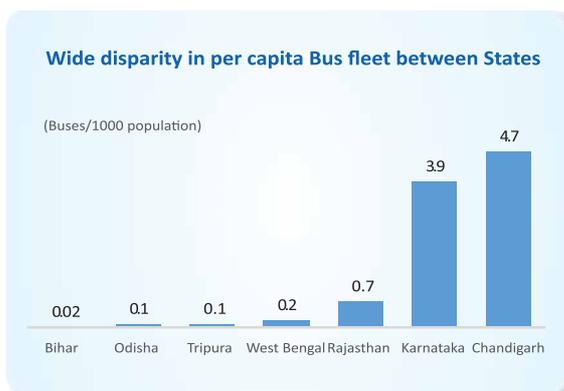
India lags behind the world in key logistics parameters on account of its poor infrastructure, inefficient taxation structure till recently and non-optimal modal mix. While high logistics cost as a percentage of GDP is not only an indicator of an inefficient network, a global comparison shows that India's logistics spend at 12-13% of GDP is higher than developed countries (~7-8%) and also higher than the global average 11.6%.

India Stats

India lags in per capita Bus fleet



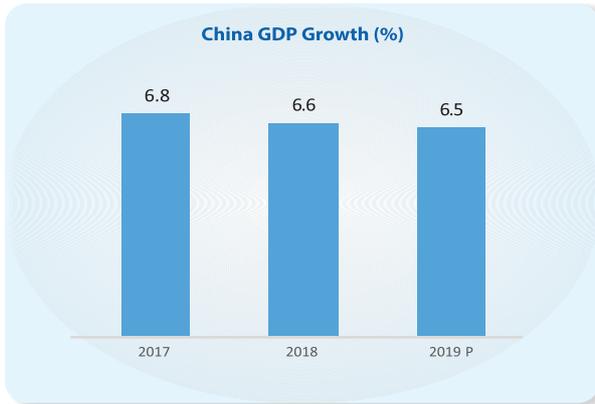
Wide disparity in per capita Bus fleet between States



India has 1.2 buses per 1000 people, below developing nation benchmarks, with a vast disparity between states 3.9 in Karnataka vs 0.02 in Bihar. Only 63 of 458 Indian cities of more than 100,000 citizens have a formal city bus system. Within this, only 15 cities have a bus or rail based mass rapid transit system. A strong, well-connected, capable public transport network is considered an essential service, and in India the usage needs to be significantly improved.

Across the Great Wall

China sets 2019 GDP growth target at 6-6.5%



China has set its **GDP growth target for 2019 between 6% and 6.5%** as the country pursues higher-quality development amid mounting uncertainties in the international economic landscape, according to the annual Government Work Report delivered by Premier Li Keqiang.

Last year, the target was set at "around 6.5%" and China's real GDP growth came in at 6.6% year-on-year.

Facing downward pressure on growth, China plans to cut nearly 2 trillion yuan (\$298.3 billion) in taxes and corporate pension payments to bolster the corporate sector, especially private and small enterprises, according to the report.

China has also set its **target for consumer inflation growth at 3% for 2019**, while it will try to keep growth of the broad

measure of money supply largely at the same level as last year.

The country's fiscal deficit to GDP ratio will be at 2.8 percent, 0.2 percentage point higher than last year. It is also planned that local special-purpose debts will total 2.15 trillion yuan this year, 800 billion yuan more than last year.

Policymakers will seek to **create 11 million new jobs this year, according to the report; the surveyed unemployment rate in urban areas will be kept at around 5.5%.**

China's GDP growth fell to 6.6% year-on-year last year, down from 6.8% in 2017. This can be linked to the **spill-over effect of interest rate hikes and balance sheet contraction in the United States and uncertainties arising from trade disputes** among major powers risk driving down global economic and trade growth this year.

Online retail sales soar in China's rural areas

Online retail sales in China soared to 1.37 trillion yuan (\$201.47 billion) in rural areas in 2018, up 30.4 percent year-on-year.

Online sales of agricultural products amounted to 230.5 billion yuan, representing a year-on-year growth of 33.8 percent.

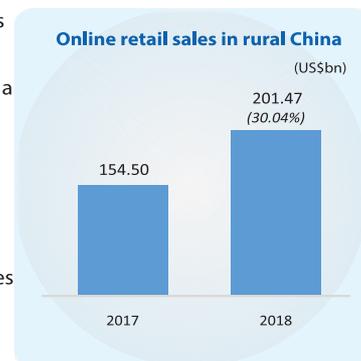
E-commerce has become a key way to help the underprivileged get rid of poverty.

The idea of invigorating impoverished regions through e-commerce has been on the government's agenda in recent years. Rural incomes have kept growing but still lag behind urban levels.

By the end of 2018, China had 16.6 million impoverished rural residents. Authorities believe e-commerce can help them sell more produce and boost income levels.

Last year, a nationwide e-commerce alliance was formed by 29 organizations and companies to help farmers in 351 poor counties promote their produce online.

China aims to build a moderately prosperous society in all aspects and **eradicate extreme poverty by 2020.**





Employment rate remains steady in China



China maintained stable employment in 2018 amid a moderate economic growth and external uncertainties.

Data from National Bureau of Statistics (NBS) showed **13.61 million new positions were added to the job market of urban areas in 2018**, 100,000 more than the previous year. And the figure stayed above 13 million for the sixth consecutive year.

By the end of last year, China's **registered unemployment rate in urban areas was 3.8 percent**, the lowest level in recent years, while the surveyed unemployment in urban areas during Jan-Dec remained at 5 percent and below, despite March and July seeing a slightly higher figure due to Spring Festival and graduation season, according to NBS.

Along with the increasing employment, **resident salary income per capita in the period rose as well, growing 8.3 percent year-on-year to 15,829 yuan (\$2,360.81)**, people.com reported.

Specifically, the **value added in the service industry**, a more labor-intensive sector compared with the secondary industry, **accounted for 52.2 percent in last year's GDP**, 0.3 percentage points higher than the previous year.

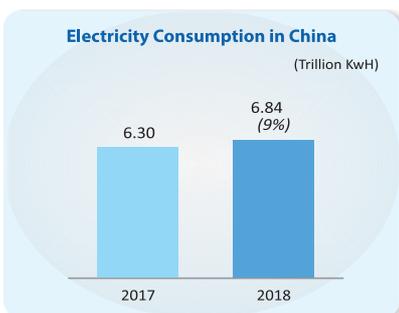
In order to ensure employment, the government rolled out an array of measures in the past year. In 2018, a total of 1.3 trillion yuan was saved for enterprises by cutting taxes and fees; a subsidy of 980 million yuan was used to equip the jobless with vocational skills; and 681,000 companies without or with few layoffs got a refund of their unemployment insurance premiums amounting to 19.77 billion yuan, as per people.com.

With more reforms aimed at creating a better business environment, **6.7 million enterprises set up last year, up 10.3 percent from a year before.**

In December, employment in urban private enterprises and self-employed entities rose 5.7 percent and 6.7 percent, respectively, and the growth rates were 3.4 and 4.4 percentage points higher than general urban employment, according to NBS.



Manufacturing, services power up electricity consumption in 2018



Electricity consumption in China, a key indicator of economic activity, reached 6.84 trillion kilowatt-hours in 2018, an increase of 8.5 percent year-on-year, according to the China Electricity Council.

Electricity consumption hit a six-year high since 2012, with a year-on-year growth of 1.9 percent. This is against the backdrop that China's year-on-year GDP growth reached 6.6 percent in 2018, according to the National Bureau of Statistics.

Such a rapid growth rate was mainly due to the strong growth of power consumption in China's manufacturing industry and service sector, while China's ongoing campaign to switch from coal to electricity, part of the country's efforts to clean up pollution, also contributed to the rapid growth of power use.

Growth in electricity consumption is usually considered a barometer of economic development, monitoring the trend and trajectory of a nation's economic activity.

New Office bearers of ATMA (2019-20)



Mr K M Mammen
Chairman, ATMA



Mr Anshuman Singhania
Vice Chairman, ATMA

Mr K M Mammen, Chairman & Managing Director, MRF Ltd and Mr Anshuman Singhania, Whole-time Director of JK Tyre & Industries Ltd have been unanimously elected as Chairman & Vice Chairman of ATMA.

Mr K M Mammen has held various executive positions in business associations in the country including as President of the Indo Australian Chamber of Commerce. He is an executive member on the board of FICCI and Chairman of the Board of Madras Christian College Association. Mr Mammen has been at the helm of every landmark that has brought the company to the milestone of over Rs 15000 crore (over USD 2.2 billion) turnover and ranking amongst top 20 tyre companies in the world.

Mr Anshuman Singhania is a graduate from Oxford Brookes University, UK and an alumnus of London Business School. As a young leader, he started his career from the shop floor as an apprentice and has held several positions in Planning, Production, Product Development, Quality Control, Stores & Purchase, Finance as well as Sales & Marketing. Being a techno-savvy person, he has played a key role in implementing the latest technologies in the manufacturing process.

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APPEAL

DR. D. BANERJEE CENTRE OF EXCELLENCE FOR RUBBER TECHNOLOGY EDUCATION, TRAINING, RESEARCH, TESTING AND SKILL DEVELOPMENT AT JSS SCIENCE & TECHNOLOGY UNIVERSITY, MYSORE

Indian Rubber Institute (IRI) is a non-profit organization involved into education of Rubber Industry Operatives and Professionals for several decades. The experience and knowledgeable faculty of Rubber Industry, Polymer & Rubber Institutes have come forward voluntarily to participate and impart knowledge to the professionals.

IRI also conducts regular courses and have instituted Diploma (DIRI) and Post Graduate Diploma (PGD-IRI) courses for upgrading knowledge of people associated with Rubber & Allied industry while working. The examinations are conducted at eight branches all over India. The Controller of Examination is Rubber Technology Centre, IIT Kharagpur. So far more than 3000 qualified rubber technologists were provided to Indian Tyre and Rubber Industries since its inception.

In order to substantially enhance this activity and to impart knowledge as well as to support rubber industry, small and medium scale in particular, IRI has undertaken setting up this "Centre of Excellence" which will house all types of facility for training, education, hands on experience besides undertaking development and testing for various industrial rubber products and tyres. This centre will be one of the approved training providers in India for Skill Development for the rubber sector under RSDC/NSDC, Govt. of India and an NABL accredited Rubber Product and Tyre Testing Centre.

This centre is being set up at the premises of JSS Science and Technology University, Mysore who were kind enough to provide IRI 10000 sq.ft area on long lease (62 years).

The construction of 32000 sq.ft building is under progress. It will have an auditorium with a seating capacity of 250, training halls (three Nos.), full-fledged Library cum Documentation centre, different laboratories for On the job training & testing like Rubber Processing Lab (Intermixer, 2 Roll Mill, Extruder, Baby Calender, Moulding, Auto clave etc.), Physical Testing Laboratory, Chemical testing Laboratory, Analytical & Characterization Laboratory, Rubber Product Failure Analysis Lab, Rheology Lab, Reverse Engineering facility, Tyre Testing Lab, Pilot Plant for new product development etc. The estimated cost of establishing the centre is Rs. 500 million (Rs. 100 million for Building, Furniture/fixtures, utilities etc. and Rs. 400 million for equipment & machinery).

The construction, commissioning and smooth running of this institute will be possible only with whole-hearted support from well-wishers from the global rubber fraternity. We are appealing individuals/organisations/society/ Universities/ Institutes/raw material suppliers/ equipment suppliers to whole heartedly support this noble cause by way of donation or adopting a Laboratory/Lecture Hall/Library cum Documentation Centre etc.

Your contributions in the form of cheque/DD in favour of "INDIAN RUBBER INSTITUTE", payable at Kolkata may please be sent to above address or may please transfer to account through NEFT/RTGS.

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MG Motor debuts in India with feature-rich Hector

●The Chinese-owned British carmaker MG (Morris Garages) Motor recently made its advent in the Indian market by unveiling the Hector. The company claims it is India's first internet car with more than 50 connected features and 48 Volt hybrid SUV. The company will disclose pricing closer to the launch in June.

"The MG Hector, as India's first internet car, has been built with a high level of localisation and comes power-packed with features, inside-out. As MG's first offering in India, the Hector demonstrates our commitment to provide the best cars to Indian customers that they love and appreciate," said Rajeev Chaba, President and Managing Director, MG Motor India.

With internet inside, the i-SMART technology in the Hector is aimed at delivering safe, connected and fun experiences with the biggest HD touchscreen in its segment at 10.4 inches, the company said. The iSMART technology includes features such as an embedded connectivity solution, maps and navigation services, emergency and information services, voice assistant, and built-in apps.

The 48V mild hybrid technology is the latest global environmentally-friendly engine technology that enables reduction in petrol engine emissions, the company said. A 48-volt lithium ion battery helps to store energy and provide extra torque assistance of up to 20 Nm when required, ensuring a smoother drive.

MG Motor India will begin shipments of the Hector SUV in the next few weeks to a network of 120 outlets across 50 cities. It plans to expand this to 250 outlets by September-end. Pre-orders of Hector will begin next month.

MG Motor India has invested 1,200 crore so far in its manufacturing facility in Halol, Gujarat, which has a production capacity of 80,000 units per annum.



Rajeev Chaba, President and Managing Director, MG Motor India

Petrol & diesel engines

The Hector will be available in both petrol and diesel engines from its launch next month. The 1.5 litre turbo-charged petrol engine delivers 143 PS power at a peak torque of 250 Nm and will be available in both manual and automatic transmissions. Its 2.0 litre diesel engine will deliver 170 PS at a peak torque of 350 Nm, with best-in-class fuel efficiency.

Indian vehicle sales crash 17% in April to eight-year low

●Pre-election blues continued for the automobile sector. The first month of the new fiscal recorded a 17% decline in passenger vehicle sales, the lowest in nearly eight years.

A liquidity crunch, pre-election uncertainty and high insurance costs have been cited as the main reasons for the fall. The PV sales dropped to 2,47,541 units in April this year, against 2,98,504 in April 2018, according to data released by the Society of Indian Automobile Manufacturers (SIAM) on May 13.

Vehicle sales across categories registered a decline of 15.93% to 20,01,096 units from 23,80,294 units in April 2018.

Total two-wheeler sales in April declined 16.36% to 16,38,388 units compared to 19,58,761 units in April 2018. Motorcycle sales fell 11.81% to 10,84,811 units as against 12,30,046 units in previous April. Sales of commercial vehicles came down 5.98% to 68,680 units in April, SIAM said.

"In the last 10 years, we have not seen anything like this when all the segments are down. The start of the

new financial year has not turned out to be very good," SIAM deputy director general Sugato Sen said.

Though some inventory correction has happened, negative factors like liquidity crunch and enhanced insurance costs continue to impact sales. "It is not only the auto sector, but also the FMCG segment, which is witnessing a slowdown. Discretionary spendings are being held up. Maybe things will improve after the election results are declared and a stable government is formed. We expect things to get better in the second half," SIAM director general Vishnu Mathur said.

Used-cars sales race past 4-million mark in India

●As automakers continue to report plummeting April sales numbers, the factors triggering a slowdown in the new-cars market don't seem to be weighing on the used-cars market. Used-cars sales crossed the 4 million unit mark in FY19, with it being 1.2x the size of the new car market.

It is also poised to reach between 6.7 to 7.2 million cars per year by FY22, according to the third edition of the 'India Pre-owned Car Market Report'.

Different parameters

"Growth in the used-cars market is between three times and four times of the growth in the new-cars market as the number of vehicles in the used-cars market pool is much larger than the number of new cars sold annually. The slowdown in the new-cars market hasn't affected the used-cars market per se, as the consumer of used cars is slightly different from that of the



new cars consumers. But, if there is a long-drawn slowdown in the new cars, it will impact the number of people who sell their used cars, which is the source of supply of used cars," said Ashutosh Pandey, MD and CEO, Mahindra First Choice Wheels Ltd, at the launch of the the third edition of the 'India Pre-owned Car Market Report'.

Market size

According to the report released by Indian Blue Book (IBB), the industry first pricing and analytics platform for new and pre-owned vehicles, the Indian pre-owned car and associated industry is set to be valued at around **1 50,000 crore by FY22.**

On the impact of the BS-6 implementation and Maruti's decision to discontinue diesel cars, Pandey said: "We believe it will not impact the used-cars market as the price differential between a BS VI vehicle and a used diesel vehicle will become far more significant, which will render the used vehicle a great buy for value conscious customer. Only if there is a general backlash against diesel, as has happened in Europe, or if government regulations discourage purchase or sale of used diesel vehicles, will the used-car market get impacted in the short term."

The report has many key findings. Over 85% choose a pre-owned car as a stepping stone to progress towards a new car. A pre-owned car traditionally opens the door for two-wheeler owners, looking to upgrade to a four-wheeler, the report added. "The movement of two-wheeler owners to pre-owned car owners and increased composition of value

seekers would fuel the growth of the pre-owned car industry," the report stated.

Welcome to the future: Tesla CEO plans to hand the car keys to robots next year

●Tesla CEO Elon Musk expects to start converting the company's electric cars into fully self-driving vehicles next year as part of an audacious plan to create a network of robotic taxis to compete against Uber and other ride-hailing services.

The vision was sketched out during an event at Tesla's Silicon Valley headquarters.

Self-driving car experts fear Musk is shirking public safety in an effort to boost Tesla's stock and sell more of the company's electric cars. This amid lingering questions about whether the 15-year-old automaker can consistently make money.

To prove his sceptics wrong, Musk will have to persuade regulators that Tesla's technology for transforming

potentially hundreds of thousands of electric cars into self-driving vehicles will produce robots that are safer and more reliable than humans.

Musk's quasi-sales pitch came two days before Tesla is expected to report a disappointing performance for the first three months of the year. Analysts polled by FactSet predict a \$305.5 million first quarter net loss based on disappointing car sales, a setback after Musk pledged heading into the second half of last year that Tesla would be profitable from that point onward.

Recently, Tesla's stock sank by nearly 4% to close at \$262.75. This quarter, Musk said, Tesla will have 500,000 vehicles on the road, each equipped with eight cameras, ultrasonic sensors and radar gathering data to help build the company's neural network, which will serve as the digital equivalent of the self-driving cars' consciousness.

The network allows vehicles to recognise images, determine what objects are and figure out how to deal with them. To become fully self-driving, the cars also need a special computer that fits behind the glove box and is powered by a special chip which, Musk boasted, is better than any other processor in the world "by a huge margin".

India's auto industry logs 8% growth in production

●Last year, India bucked the decade's first declining trend in global auto output, logging the fastest pace of expansion among top ten production hubs, although sales locally turned a bit soft because of changes to insurance rules and increase in fuel prices through the festive season.

Production of passenger vehicles in India rose 2.8% to about 4.1 million units.

Production growth of 8% for the Indian automotive industry has come at a time when global automobile production itself declined for the first time in a decade by 1.1% to about 95.6 million units.

As per data available with the International Organisation of Automobile Manufacturers (OICA), automobile production (passenger



Elon Musk, Tesla CEO

and commercial vehicles) in India increased 8% to 5.2 million units last year. Brazil came next, expanding by 5.2% to 2.9 million units, albeit on a smaller base. Output in China dropped by 4.2% (to 27.8 million units), while production in the US and Japan climbed 1.1% (to 11.3 million units) and 0.4% (to 9.7 million units), respectively.

Production of passenger vehicles in India rose 2.8% to about 4.1 million units. Output of commercial vehicles jumped 34% to 1.1 million units.

"This growth in production has largely come on the back of strong sales, particularly of commercial vehicles, in the first eight to nine months of the year. Several economies across the world are in recession. India is the only major country with solid growth behind it. If not for the global slowdown, which has hit exports, the growth rate of production in the country would have been even higher," said V G Ramakrishnan, managing partner at Avanteum Partners LLP.

To be sure, a significant increase in insurance expenses, fuel costs and liquidity tightening after the IL&FS crisis affected demand locally in the second half of the year. However, industry insiders are confident that growth will revive in FY20, with customers advancing purchases ahead of the anticipated price increases on account of implementation of BS VI emission standards from April 1, 2020.

Hyundai unveils first connected car 'Venue'

● On April 17, the country's second largest passenger car manufacturer Hyundai Motor India (HMIL) unveiled its first connected car 'Venue', which will be launched on May 21.

The sub-four metre sports utility vehicle (SUV) is targeted towards customers who want refreshing driving experience, solid presence and seamless connectivity.

The 'Venue' comes with the latest 1-litre Kappa GDI petrol engine, which is introduced for the first time in this vehicle, apart from 1.2-litre petrol and 1.4-litre diesel engines. HMIL is also introducing seven-speed dual clutch

transmission (DCT) with the Venue.

"Hyundai Motor India is committed to lead the Indian auto industry by introducing a world-class product. Hyundai Venue will create quality time for customers making their life a happy life," SS Kim, Managing Director and Chief Executive Officer, HMIL, said.

"Hyundai Venue will enable ease of life and empower the customers to have a safer, connected and more versatile car ownership experience. The advanced and intelligent Hyundai Blue Link will offer the customers control of their vehicle even when they are away from it," Kim added.

The amenities of the 'Venue' will include electric sunroof, cruise control, air purifier, wireless charger, voice recognition and cornering lamps. For the connectivity, the company has tied up with Vodafone-Idea India for embedded SIM.

On safety aspects, it will have six airbags, speed sensing auto door lock, vehicle stability management and brake assist system. Built with the application of 69% advanced high strength steel plus high strength steel, the 'Venue' also achieves prominent static and dynamic stiffness with improved structural rigidity, the company said. It is expected to be priced at around ₹ 8 lakh.

Automotive silicone market to grow at 7.1% rate

● The market size of automotive silicone, in terms of value, is expected to reach \$ 3.33 billion by 2023 from \$2.37 billion in 2018, at a CAGR of 7.1% from 2018 to 2023 according to a market study from Markets and Markets. High growth application areas such as electrical components and interior and exterior parts used in the automotive industry are the key factors driving the growth of the automotive silicone market.

The automotive silicone market is experiencing significant growth across the world due to increasing demand for better qualitative and improved performance automotive products, and increasing use of silicone in the automotive industry in



emerging markets such as Asia Pacific and Latin America. The growth is also due to an increasing demand for highly efficient and lightweight materials in the automotive industry that helps them in enhancing the durability and efficiency of vehicles.

Based on application, the automotive silicone market has been segmented into interior and exterior, engines, electrical and others. The interior and exterior segment includes exhaust hangers, airbags, exterior trim and shock absorbers. The engines segment includes gaskets, radiator seals and filtration. The electrical segment includes ignition cables, battery seals and connectors. Interior and exterior are estimated to be the largest application segments of automotive silicones and electrical is expected to be the fastest-growing segment during the forecast period. The increase in demand for automotive silicone in plastics and coatings is expected to drive the market in this application.

Asia Pacific is expected to be the fastest-growing market for automotive silicone during the forecast period. In it, India is projected to continue to be the fastest-growing market. This exponential growth can be attributed to the easy availability of raw materials used to manufacture these silicones, and the growing automotive industry.

Groupe PSA to take a 'frugal' drive into India with Citroen brand; not to chase volumes

● French car maker Groupe PSA formally announced a "carefully worked out" plan for the Indian market. Europe's second-largest passenger

vehicle group by volumes hopes to stay afloat with profitable growth, instead of chasing volumes and market share.

The company plans frugal investment initially. Local design and manufacturing, fresh products, higher localisation, sourcing of parts for exports and a stronger focus on service are some of the major features of its India plans.

Groupe PSA owns six vehicle brands. It has chosen to grow in India with vehicle launches under Citroen brand. More than a million vehicles were sold globally in 2018 under this brand.

The company is adopting a top-down approach for its product launches as its first product will be Citroen C5 Aircross SUV, a premium SUV that was launched in Europe a few months ago.

The new 4.5 mtr SUV will be built in India with an expected localisation level of 95%. It is likely to hit Indian roads in the later half of 2020.

The company will launch an all-new model, designed and made locally, every year in India after 2020.

These new products will hit India first before going to other markets. It is targeting all segments – SUVs – both small and big—sedans and hatchbacks as also a new segment product.

The company has already tied up with CK Birla Group for the manufacture of vehicles at Thiruvallur, near Chennai, and powertrains at a greenfield unit at Hosur, near Bengaluru. The facilities will have production capacities of one lakh vehicles, three lakh gear boxes and two lakh engines.

“We don’t choose the timing and there is no perfect moment. What we are saying today is a long-term commitment. This is the beginning of a great journey. We have been working on this plan for at least for three years,” said Carlos Tavares, Chairman of the Managing Board, Groupe PSA.

Stating that the company would aim for a conservative market share of about 2% in four to five years, the management said it would not chase market share but would focus to stay in the black with an asset-light model. The company is adopting a frugal investment plan in the initial term as it hopes to invest more on products than in manufacturing and other related areas.



Linda Jackson, CEO, Citroen Brand, Groupe PSA, and Carlos Tavares, Chairman of the Managing Board, showcasing the company’s flagship vehicle Citroen C5 Aircross SUV, in Chennai - Bijoy Ghosh

Volkswagen merges three passenger vehicle units

● Recently, German auto maker Volkswagen group said it will merge its three Indian passenger vehicle subsidiaries in a bid to corner larger market share in the highly-competitive car market.

Volkswagen Group brands such as Volkswagen, Skoda, Audi, Porsche and Lamborghini will maintain their individual identities, dealer networks and customer experience initiatives. However, the brands will work under the leadership of Gurpratap Boparai with a common strategy for the Indian market.

This restructuring of the Volkswagen group companies is a part of the Skoda-led ‘INDIA 2.0’ project of the Volkswagen group. Under the project, the Volkswagen Group had confirmed investments of ₹ 8,000 crore in India.

Three entities – Volkswagen India Private Ltd (VWIPL), Volkswagen Group Sales India Private Ltd (NSC) and Skoda Auto India Private Ltd (SAIPL) – will be merged as part of this plan.

“India is an important and an attractive growth market for the Volkswagen group. With the proposed merger, we intend to combine the technical and managerial expertise of the three companies to unlock the Volkswagen group’s true potential in India’s competitive automotive market. The integration will lead to faster decision making and increased efficiency using existing synergies,” said Gurpratap Boparai, Managing Director, Volkswagen India Private Ltd

and Skoda Auto India Private Ltd.

Car sales in Europe continue to fall

● European car sales declined for a seventh straight month in March as several countries struggled with slowing growth, adding to challenges for an industry shouldering record spending on electric and connected cars.

Automotive shares in Europe still rose after China beat expectations for first-quarter growth. Volkswagen AG, which sells about 40% of its vehicles there, gained as much as 1.6% rise with similar rise in the Stoxx Europe 600 Automobiles & Parts Index.

Prospects of an uptick in China, after 10 months of market contraction, would offer positive momentum in a global car market pullback where Europe is showing little sign of a turnaround. Italy, where the economy is already shrinking, may weaken further while falling car sales in Spain are in line with forecasts for a slowdown for an economy that’s been resilient so far. Germany, the continent’s biggest market, barely skirted a recession at the end of last year, and prospects for recovery remain dim.

Registrations in Europe dropped 3.6% in March to 1.77 million cars, the European Automobile Manufacturers Association said. Italy led the declines among major markets with a drop of almost 10%, followed by Spain.

Bleak environment

“An improvement in new car registrations isn’t on the horizon in

light of the bleaker economic environment, the endless Brexit debate and political risks," EY consultancy said in a report.

Volkswagen was up 1.2% at 158.54 euros at 10:33 a.m. in Frankfurt trading, trimming losses over the past year to 7.1%. For the quarter through March, sales fell 3.2% in the European Union and European Free Trade Association countries, the ACEA said.

A softer market adds to headwinds for carmakers battling sliding profits that prompted BMW AG to intensify measures designed to save 12 billion euros (\$14 billion) by 2022.

The future is electric at the Shanghai Auto Show

● The electric coupe from the Chinese upstart has a whopping 400 horsepower, which the manufacturer hopes will help to lure the US.

There was electricity in the air at the China Auto Show in Shanghai as the battery-car brigade rolled into town like never before.

Established global makers and dozens of local startups rushed to showcase electric-vehicle models in a push led by China, the world's largest car market. But there's a dark side: While companies have plowed billions of dollars into development, projected EV sales may not be enough to keep the assembly lines moving, suggesting only a few companies will survive when the dust settles.

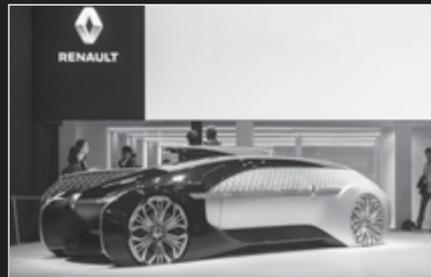
These were some of the sleekest, most technologically-advanced models on display at the Shanghai showcase.

Qiantu K5050

▶ The electric coupe from the Chinese upstart has a whopping 400 horsepower, which the manufacturer hopes will help lure US buyers.

Nissan IMO

▶ The electric concept that Nissan calls an "elevated sports sedan" has the battery under the body and a wider wheelbase, allowing for a more spacious cabin.



Renault EZ Ultimo

▶ Renault calls its concept an autonomous, connected and 100-percent electric "robo-vehicle." It has a two-tone bodywork, with the upper part made up of 600 diamond-shaped facets that work like a one-way mirror to keep the interior away from prying eyes.

Volkswagen I.D. Roomzzz

▶ The German auto giant unveiled the electric sport utility vehicle concept to challenge Tesla Inc.'s Model X. The full-sized SUV will be available from 2021 and feature rotating lounge-seats covered in so-called AppleSkin — an artificial leather made in part from apple-juice waste.

Mercedes-Benz Concept GLB

▶ Mercedes-Benz unveiled the concept sport utility vehicle with rugged design and space for as many as seven passengers to expand its in-demand lineup of mid-sized and compact cars. The GLB prototype, featuring 17-inch wheels, harks back to the unveiling of the Mercedes-Benz GLA crossover in Shanghai six years ago, which heralded the brand's successful shakeup of its compact-car offerings.

BAIC Arcfox-GT

▶ This is BAIC Group's top-of-the-line electric vehicle. The car can accelerate to 100 kilometers an hour in 2.59 seconds.

BMW Vision iNEXT

▶ The concept car comes with touch functionality and autonomous-driving features, while the vehicle's

personal assistant technology can offer the driver advice.

BMW iFE.18

▶ BMW's first electric race car is competing in the Formula E Championship, which car brands use as a test lab to develop technologies.

Audi AI:ME

▶ Right on the heels of its E-Tron electric crossover, Audi is going more futuristic with the AI:ME concept. The compact vehicle, with a sloped roofline at the front, comes with automated-driving features and a large screen behind the steering wheel.

Audi Q2L

▶ An electric car specifically for Chinese market, Audi's Q2L is a longer version of its standard Q2, offering increased legroom.

Icona Nucleus

▶ The sleek and fully autonomous Icona Nucleus concept has no traditional windows, but comes with semi-transparent bodycolour panels that allow passengers to look out while remaining shrouded from the outside.

Great Wall ORA R1

▶ Priced at less than \$10,000, the small and cute ORA R1 is the Great Wall Motors' answer to those looking for an electric car on a budget.

NIO ET Preview

▶ This is the first in NIO's ET sedan series. NIO, which is vying to be China's answer to Tesla, raised about \$1 billion in a New York listing last year, valuing the company at \$6.4 billion.

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Sanjiv Puri takes over as ITC chairman, inherits rich legacy



Sanjiv Puri CMD, ITC Ltd

● Cigarette-to-soap maker ITC Ltd announced elevating its managing director Sanjiv Puri as CMD of the conglomerate, two days after its long-serving chairman Y C Deveshwar passed away on May 12.

Puri was being mentored by Deveshwar as his successor for the role of CMD.

Deveshwar steered ITC from mainly being a cigarette maker to a major FMCG and hospitality conglomerate.

The company in a regulatory filing said that the Board of Directors in a meeting on May 5 appointed Puri as chairman and MD. Puri, 56, had taken over the role of MD from May 16, 2018, while he became CEO in February 2017, after the company split the role of the executive chairman between the chairman and the CEO as part of succession planning.

His eventual ascent to the top post became apparent in December 2015 when the IIT-Kanpur graduate was made the head of all of ITC's fast-

Forex kitty just a few billion shy of all-time \$426 billion

● The Reserve Bank of India's dollar swaps helped the forex kitty to surge a healthy \$4.37 billion during the week ended April 26 as it inches back to the highs of April 2018 when the reserve were at an all-time high of \$426 billion.

The forex kitty now stands at \$418.5 billion up from \$414.1 billion as the foreign currency asset which is the total of all foreign currencies in dollar, yen, pound and others held by the central bank, increased by \$4.38 billion even as special drawing right (SDR) and reserve position with IMF reduced by \$5.9 million and \$13.6 million, respectively.

The RBI on April 23, 2019 had conducted \$5 billion worth of swaps in its second such round this year, buying dollars held by high street banks at a rupee-dollar exchange rate fixed by the central bank. This was done to balance the economy's cash needs and ensure speedier transmission of policy rate action. The first round of swaps was done in March.

moving consumer goods businesses that include cigarettes, toiletries, personal care, snacks, paper and packaging.

Apart from demonstrating his ability to broker quick acquisition deals - BNatural brand in fruit juice space, Savlon in hygiene and Shower to Shower in personal care - Puri has also handled most of the verticals of ITC at different points of time.

He first became divisional chief executive of the tobacco division - ITC's single most important business unit till now - in 2009 and additionally handled the charge of the company's marketing and distribution function.

Foodgrain target set at 291mt

● The government has set an ambitious foodgrains target of 291.1 million tonnes (mt) for 2019-20, nearly 2.6% more than the previous year's 283.7 mt, as a favourable monsoon is anticipated in the current

season. While the target set for rice is 116 mt, 3 mt more than that in 2018-19, wheat production target is set at 100.5 mt, which is marginally higher than the previous year's (July-June) 100 mt,

RBI receives \$18.65-billion bid at second forex swap auction

● The second dollar-rupee swap auction by the Reserve Bank of India on April 23 received a total of 255 bids worth \$18.65 billion. It had put a total of \$5 billion on offer for a tenure of three years.

According to RBI data, the cut-off premium has been set at 1 8.38, which is the threshold for banks to receive any allotment. About 1 34,874 crore of rupee liquidity will be injected into the system in the first leg, it further said.

The RBI also announced on April 23 that it would purchase government securities under Open Market Operations for about 1 25,000 crore in May.

The RBI had, on March 26, conducted the first forex swap auction to meet the liquidity requirements ahead of the general elections and close of fiscal year 2018-19.

At the time, it had put on offer a similar \$5.02 billion, and had received a total of 240 offers worth \$16.31 billion. The response prompted the RBI to announce another forex swap auction for April 23.

The tool allows the RBI to inject liquidity into the system, while also enabling it to absorb large inflow of

THE CAREER GRAPH

- Puri served as chief executive officer of ITC since February 5, 2017
- He oversees FMCG, paperboards, paper & packaging and agri businesses of ITC
- Director for FMCG business at ITC since December 2015
- President, FMCG businesses since December 2014
- Divisional chief executive of India Tobacco Division at ITC since 2009
- MD at ITC Infotech India during May 2006 to August 2009
- MD of Surya Nepal from 2001 to 2006, a subsidiary of ITC

US dollars that could lead to a sharp rise in the rupee.

"In order to meet the durable liquidity needs of the system, the RBI has decided to inject rupee liquidity for longer duration through long-term foreign exchange buy/sell swap in terms of its extant liquidity management framework," the RBI had said at the time, adding that the US dollar amount mobilised through this auction would also reflect in the RBI's foreign exchange reserves for the tenor of the swap, while also reflecting in the central bank's forward liabilities.

Meanwhile, in a separate release, the RBI announced that it would purchase government securities under its OMO programme for about ₹ 25,000 crore in May.

This has been decided based on a review of the evolving liquidity conditions and assessment of durable liquidity needs going forward, it said.

The purchase would be through two auctions of ₹ 12,500 crore each, with the first auction scheduled to be conducted on May 2.

India agrees to review ban on import of China apples

●India has agreed to initiate steps for a possible resumption of imports of apples and pears from China which were suspended in June, 2017 after bugs and fungus were detected in the fruits shipped from the neighbouring country.

"New Delhi has agreed to send a team to China to inspect apples and pears to be sure that they are free of contaminants. Once the team has carried out its inspections, further decision on the matter can be taken," a government official told

With Rs 6.23-lakh cr revenue, Reliance Industries emerges top Indian firm on all counts

●Reliance industries Ltd (RIL), headed by India's richest man Mukesh Ambani, has emerged the biggest company by revenue, toppling state-owned Indian Oil Corporation (IOC).

RIL was already the leader in terms



Mukesh Ambani

of profits, assets and market capitalisation for some time now.

The oil-to-telecom conglomerate recorded a turnover of Rs 6.23-lakh crore for the financial year ended March 31, compared with Rs 6.17-lakh crore posted by IOC. For the reporting period, RIL was also the most profitable Indian company with a net profit of Rs.39,588 crore.

On the other hand, IOC posted a yearly net profit of Rs 16,894.1 crore.

The profitable business

"The consumer-facing verticals of RIL – telecom company Reliance Jio Infocomm (RJio) and Reliance Retail – have been bringing in more revenues than petrochemicals and polymer. This is an important development as these are new segments and they have become profitable as well.

RIL had expanded capacity in polymer and petrochemicals; the larger growth in revenue from retail and telecom suggests that the company is growing faster in the consumer-facing business, rather than in the core business.

RIL's revenue growth for FY19 was led by retail and digital services businesses, which grew by 51.6%, respectively, and higher petrochemical volumes. For the reporting period, RJio posted a net profit of Rs 2,964 crore, against Rs 723 crore in the previous year.

India on road to 'car registration portability'

●Owners of cars or other vehicles relocating from one state to another will be spared the tedium of re-registering their vehicles and changing the vehicle number plates, if a planned move of the Road Ministry takes off. The proposed policy is still in the idea stage and was discussed

at the Group of Transport Ministers meeting a few months ago, according to an official.

To get around this, the Road Transport Ministry had written to all the State governments with a suggestion to introduce a common tax regime across States based on the price of cars. Currently, car buyers tend to flock to States that offer lower tax rates, which make for cheaper cars. If implemented, this will enable number portability of vehicles across regions.

Another line of thought in the government is to allow seamless transfer of relatively older vehicles – those that have completed a few years. This means relatively older vehicles will not require a re-registration and related paperwork when used in a different State. This would, to some extent, separate the genuine buyers from those looking to "manage addresses" in their hunt for a cheaper vehicle.

Regulatory requirement

At present, if anyone shifts to another city with a personal vehicle, the owner is required to re-register the vehicle; this involves getting a no-objection certificate from the Regional Transport Office (RTO) where the vehicle was originally registered, repaying tax in the newer place, and getting a new vehicle number. Each State and region maintain their own vehicle numbers and related database. For instance, Delhi numbers start with DL, Haryana with HR, Tamil Nadu with TN, Maharashtra with MH and so on.

The hassle in transferring a vehicle across States prompts many to sell their vehicle in the second-hand market even if they are in reasonably good condition. Some users simply shift along with the vehicle without doing the requisite paperwork, and use the vehicle in the destination State, but they risk penalties imposed by the traffic police.

RATES OF INDIAN RUPEE

Currency	22.05.2019	04.04.2019	18.02.2019
1 US \$	69.716729	69.0639	71.3589
1 Euro	77.842806	77.5735	80.8268
1 Pound	88.094013	90.8680	92.2802

China names Chen Siqing to head World's largest bank

● China has named a new chief for Industrial & Commercial Bank of China Ltd. (ICBC), the world's largest lender by assets, people with knowledge of the matter said.

Chen Siqing, chairman of Bank of China Ltd., was recently appointed as party secretary of Beijing-based ICBC at an internal meeting. He is replacing Yi Huiman, who became chairman of the China Securities Regulatory Commission, the country's top securities regulator, in January.

Chen is expected to also be named ICBC's Chairman, a position that has traditionally been held by the same person who has served as party secretary, according to the people. The bank had \$4.1 trillion of total assets at the end of 2018.

ICBC currently operates 426 outlets in overseas markets with \$384 billion of assets, or close to 10% of the group's total.

Economy in better fettle than expected

China's GDP growth in the first quarter beat market expectations to achieve a 6.4 % year-on-year expansion, a hard-won result that reflects the country's strenuous efforts to keep the world's second-largest economy on track. Although it is 0.4 of a percentage point down from the growth in the same period a year ago, the reading was on par with that registered in the fourth quarter of last year, indicating that China's economic slowdown, which the market had feared could continue this year, has been effectively checked, at least for now.

China's economic rebound may strengthen its hand in Trump trade talks

● China's economy rebounded through the first quarter, a welcome sign of stabilisation for the world and handing the government room for maneuver as trade negotiations with the US enter a crucial stage.

The country's Gross Domestic Product (GDP) rose by 6.4% in the first three months from a year earlier —

US trade deficit hits eight-month low on weak Chinese imports

● The US trade deficit fell to an eight-month low in February as imports from China plunged, temporarily providing a boost to President Donald Trump's "America First" agenda and economic growth in the first quarter. The Commerce Department said on April 17 the trade deficit dropped 3.4% to \$49.4 billion, the lowest level since June 2018. January's trade gap was unrevised at \$51.1 billion. The goods trade deficit declined 1.7% to \$72.0 billion, also the lowest level since last June.

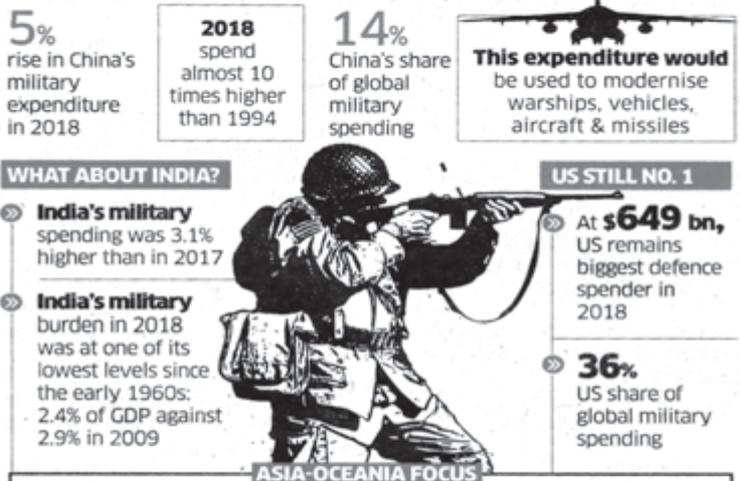
matching last quarter's pace and beating economists' estimates. Factory output in March jumped 8.5% from a year earlier, much higher than forecast. Retail sales expanded 8.7% while investment was up 6.3% in the year to date. For a slowing global economy with Germany's economic ministry cutting its economic growth estimate, China's stabilisation is a relief.

Global growth

"US President Trump and other US officials spent much of the last year saying that China's slowdown was making Beijing desperate for a deal," said Michael Hirson, Practice Head, China and Northeast Asia at Eurasia Group and a former US Treasury Department official. "Now that China's growth is recovering, Trump and team

China's Defence Spend at \$250 billion in 2018

China's — world's second largest spender on defence — expenditure was much higher than the collective spending of India (\$66.5 billion), Pakistan (\$11.4 billion), Japan (\$46.6 billion), South Korea (\$43.1 billion) and Australia (\$26.7 billion), according to Swedish think-tank Stockholm International Peace Research Institute (SIPRI).



Five Of Top 15 Global Spenders Are In This Region



China's annual growth rate of its military spending has slowed since it reached a post-2009 high of 9.3% in 2013

China follows a policy of linking military spending growth with economic growth



Amazon to pull plug on China retail ops



Amazon's founder Jeff Bezos

●Amazon.com Inc. said it will shut its China online store by July 18, as the US e-commerce giant focuses on the lucrative businesses of selling overseas goods and cloud services in the world's most populous nation.

The move underscores how entrenched, home-grown e-commerce rivals have made it difficult for Amazon's marketplace to gain traction in China. Consumer research firm iResearch Global said Alibaba Group Holding's Tmall marketplace and JD.com controlled 82% of the Chinese e-commerce market last year.

An Amazon spokeswoman told Reuters on April 18 that it is notifying sellers that it will no longer operate a marketplace, nor provide seller services on Amazon.cn. Sources familiar with its plans had told Reuters a day before that the company had planned to make such a move.

"We are working closely with our sellers to ensure a smooth transition and to continue to deliver the best customer experience possible," the spokeswoman said in a statement.

"Sellers interested in continuing to sell on Amazon outside of China are able to do so through Amazon Global Selling."

The sources said that Amazon shoppers in China will no longer be able to buy goods from third-party merchants in the country, but they still will be able to order from the United States, Britain, Germany and Japan via the firm's global store.

Amazon will wind down support for domestic-selling merchants in China in the next 90 days and review the impact on its fulfillment centers in the country, some of which it may close, one of the people said.

"They're pulling out because it's not profitable and not growing," said analyst Michael Pachter at Wedbush Securities.

will be getting more questions from pundits and the media about whether his leverage is slipping away."

White House economic advisor Larry Kudlow, who, in January, described China's economy as "very weak," said the negotiations are making "very good progress."

The exchange of tit for tat tariffs last year between the world's two-biggest economies on roughly \$360 billion worth of each others goods had dragged on global growth and hammered sentiment before both governments agreed a truce.

Car sales

Car production grew in March for the first time since September, showing manufacturers might be more optimistic after the sales slump last year. The nation's economic planner is drafting a series of stimulus measures to bolster sales of cars and electronics, according to sources. Aluminum and steel output reached records in the first quarter as producers ramped up operations amid prospects for better demand in the world's biggest commodities consumer. The robust data stoked skepticism as critics said authorities are again relying on cheap credit to stoke lending and demand. Investment by state-owned firms quickened to 6.7% and slowed for private firms to 6.4%, underscoring the government's role in supporting growth.

Not all good news

The surveyed jobless rate remained over 5% for a third month and the nominal growth rate, which is unadjusted for price trends, decelerated. That means slower corporate profits.

World economy, Brexit delay boost German investor morale

●German investor morale improved for the sixth month in a row due to a resilient global economy and a delay to Britain's departure from the EU, a survey showed on April 17, but the growth outlook for Europe's largest economy remains clouded by external risks.

The German government is expected to slash its 2019 growth forecast as exporters struggle with weaker demand from abroad, trade tensions triggered by US President Donald Trump's "America First"

policies and Brexit uncertainty.

ZEW President Achim Wambach said the slight improvement in economic sentiment was largely based on the hope that the global economy would develop less poorly than previously assumed.

"The postponement of the Brexit deadline may also have contributed to buoy the economic outlook," Wambach said.

The ZEW research institute said its monthly survey showed economic sentiment among investors improved to 3.1 from -3.6 in March.

Economists had expected a smaller increase to 0.8. A separate gauge measuring investors' assessment of the economy's current conditions fell to 5.5 from 11.0 in the previous month. Markets had predicted a dip to 8.0.

Recent German data has painted a mixed picture of the economy.

Industrial orders tumbled and manufacturing output stagnated in February while construction boomed and retail sales rose more than expected in the same month.

Chancellor Angela Merkel's government will update its growth forecasts for this year and next on April 17.

A government source told Reuters that Economy Minister Peter Altmaier will halve the estimate for 2019 to 0.5%, lower than a recent estimate of 0.8% by Germany's leading economic institutes. The government's last forecast in January was for 1% growth in 2019.

US DOLLAR RATES

	22.05.2019	04.04.2019	18.02.2019
1 INR	0.014343	0.01447	0.01400
1 Euro	0.01285	0.89056	0.01237
1 UK £	0.01134	1.31502	0.01084
1Yen	1.582550	0.00897	1.54950

NATURAL RUBBER (INDIA)

(Rs./Quintal, Ex-Kottayam)

Grade	May 2019	April 2019	February 2018	December 2018
RSS 4	14050	12850	12350	12400
RSS 5	13750	12600	11700	11900
ISNR 20	12800	12400	11657	11400
Latex (60% drc)	9510	8455	8773	8875

(Source: Rubber Board)

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Product	Price (Rs. /Kg)
Accelerators	
Pilcure MBT	320.00
Pilcure MBTS	330.00
Pilcure F	360.00
Pilcure CBS	400.00
Pilcure MOR	440.00
Pilcure ZDC	210.00
Pilcure ZMBT	325.00
Pilcure ZDBC	280.00
Pilcure ZBzDC	420.00
Pilcure TBzTD	500.00
Pilcure TMT	195.00

Antioxidants/Antidegradants

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Pilnox TDQ	270.00

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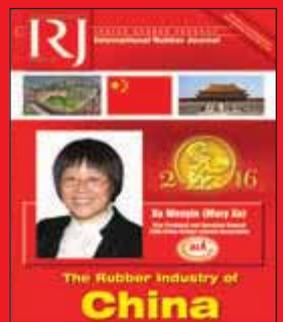
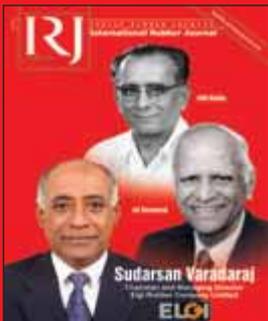
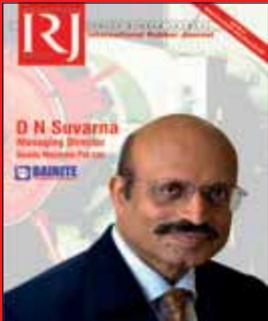
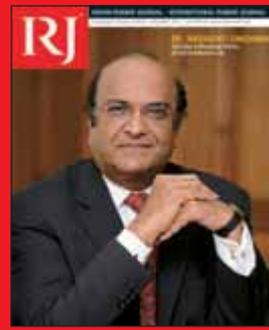
1) All prices are basic prices, exclusive of GST and any other levies as applicable

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(Price of Rubber Chemicals as on 15-03-2017)

ACCELERATOR TMTD	200.00
ACCELERATOR ZDC	224.00
ACCELERATOR CBS	360.00
ACCELERATOR MBT	250.00
ACCELERATOR MBTS	285.00
ACCELERATOR ZDBC	297.00
ACCELERATOR ZMBT	305.00
ANTIOXIDANT SP	219.00
ANTIOXIDANT TDQ	225.00
ALUMINIUM SILICATE	13.00
BITUMIN	41.00
BONDING AGENTS	ON REQUEST
CALCIUM SILICATE	13.50
CHINA CLAY	6.50
CALCIUM CARBONATE PRECIPITATED	15.00
CALCIUM CARBONATE ACTIVATED	17.00
CRUMB RUBBER-TRC 40	23.00
CARBON BLACK-ORDINARY	40.00
CARBON BLACK-(HAF/GPF/FEF/SRF/ISAF)	ON REQUEST
D.O.P./D.B.P.	ON REQUEST
EBONITE DUST-(BROWN)	55.00 95.00
EBONITE DUST-(BLACK)	32.00
FACTICE - BROWN	99.00
FACTICE - WHITE	90.00
GRAPHITE POWDER	50.00
LIGHT MAGNESIUM CARBONATE	ON REQUEST
LIGHT MAGNESIUM OXIDE	ON REQUEST
PINE TAR - Synthetic	68.00
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PROCESS OIL	ON REQUEST
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PETROLEUM RESIN	86.00
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SULPHUR	24.00
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ZINC STEARATE	65.00
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26th & 27th June 2019, London, UK

Addressing Future Challenges and Solutions for the Carbon Black Industry



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- Dr Abhilash Nair, Dunlop Aircraft Tyres Limited
- Wolfgang Loreth, Kraiburg
- Austin McCabe, CIRS
- Roberto Vaghini, Eurotecnica
- Jane Koury, ASTM
- Chris Norris, ARTIS
- Arqam Anjum, Uni of Twente

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- Assessing feedstock supply impact on the CB market

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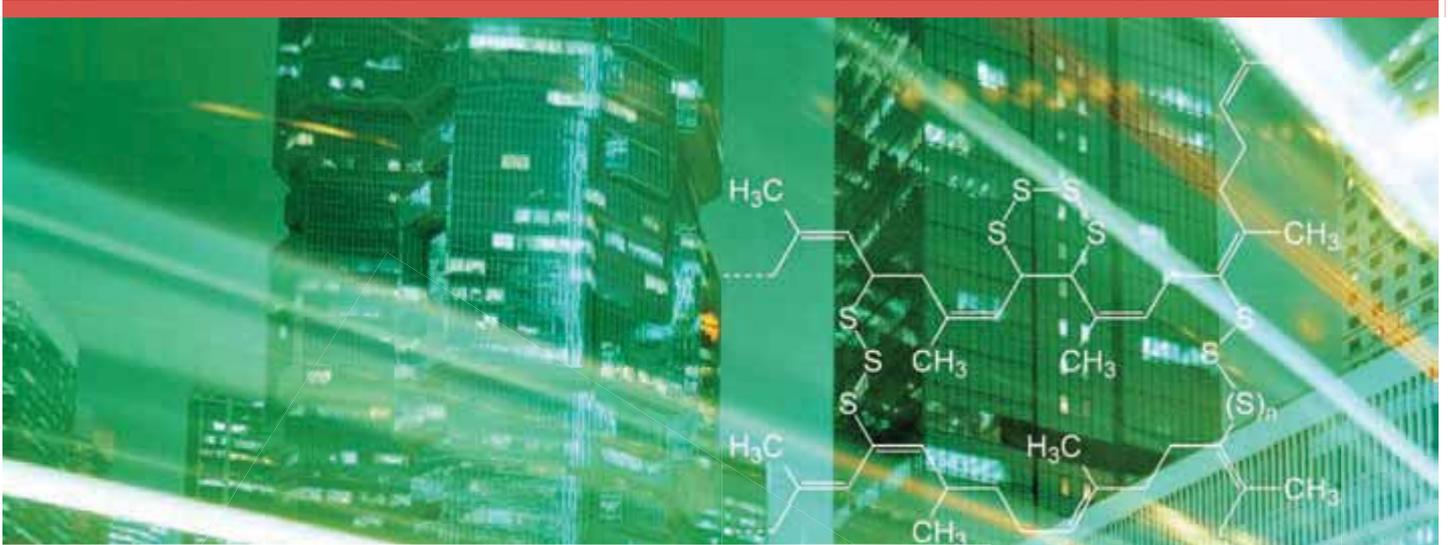
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Tire Technology International Awards for Innovation and Excellence winners announced

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