

## SALVATORE PINIZZOTTO

Secretary General  
International Rubber Study Group (IRSG)



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- ▶ 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
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INDIAN RUBBER JOURNAL  
INTERNATIONAL RUBBER JOURNAL



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

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**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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# BREXIT CASTS PALL AT GENEVA AUTO SHOW



Ratan N Tata, Chairman Emeritus of Tata Group, and N Chandrasekaran Group Chairman, unveiling the H2X concept SUV at the Geneva International Motor show

**W**ith the March 29 Brexit deadline looming during the Geneva Auto Show held recently, there were grave concerns in the European auto industry about the impact of Britain leaving the European Union (EU) without a withdrawal deal. With the prospect of a short delay to Brexit raised by British Prime Minister Theresa May, automakers found the plans, which they had painstakingly set in place to cope with a no-deal withdrawal, were in disarray.



Mercedes\_eqv



Ferrari

Aston Martin, for example, was to spend about 30 million pounds (\$40 million) on preparing for a potentially disorderly Brexit, including stocking more components and potentially flying in parts, in case of delays at major ports.

Britain is Europe's second-biggest buyer of cars and fourth-biggest manufacturer. Disruption to supplies and the possibility of

the industry is already recording drops in sales, investment and output, with Japan's Honda delivering the biggest blow so far by announcing plans to close its British factory.

Britain's biggest carmaker Jaguar Land Rover (JLR) stayed away from the Geneva Auto Show as it was implementing

cost-cutting measures. The automaker says its profits will fall by over 1.2 billion pounds if there is a "bad Brexit deal", which would involve tariffs on cars of up to 10% and between around 2 to 4% on components and engines. Meanwhile, the US auto giant Ford, which makes 1.3 million engines if not cars in Britain, says a no-deal Brexit could hit its bottom-line by up to \$1 billion. It fears delays and tariffs before the engines can be fitted into vehicles in the US, Germany, Turkey and elsewhere. Britain is Ford's third-largest market and is the destination for one in three cars manufactured at



Porsche



Renault

tariffs of up to 10% on vehicles moving between Britain and the EU will have a severe effect on the region's auto industry. There has already been a fall in sales, investment and output seen by Britain's auto industry, which was once thriving. Honda recently announced plans to close its British plant. Britain's once booming car

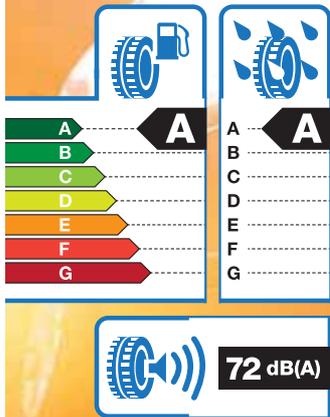


Lamborghini-huracan-evo-spyder

automaker's plant in Cologne, Germany. JLR, Honda and BMW's Mini and Rolls-Royce brands, which together account for about 55% of car output in the UK, had all planned to shut down in April from between a week to up to a month, to cope with any disruption from a no-deal Brexit.

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**B**rexit has increasingly occupied the world's attention during the first quarter of 2019. Even British politicians agree that the whole situation has devolved into an unholy mess and all are awaiting a conclusion and an end to the uncertainty. The impact of Brexit — whenever it does happen — on the auto industry in the region will be immediate and naturally, the UK economy will be feeling the effects for a long time.

As we go to press, the big news out of the US has been the completion of the Special Prosecutor Robert Mueller's report on the Trump-Russia report. As the world knows by now, it partly exonerated US President Donald Trump. However, the question of criminal intent needs to be further investigated and the full report should be published for the benefit of the American public. The Democratic leadership is wisely not pushing for Trump's impeachment, as they would prefer to beat him in the 2020 elections.

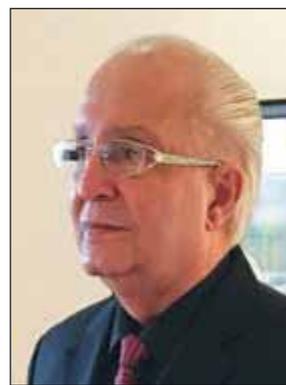
Fortunately for the world and Trump, the US economy continues to perform strongly. Nonetheless, the trade war with China has still not been settled and negotiations between the two countries are underway in Beijing as we go to press, while the honeymoon with North Korea seems to be over.

Back home in India, the war clouds with Pakistan have lifted for now, but with India's general elections due to take place in May, the situation is quite fluid.

For our cover story in this issue, we revisit the IRSG (International Rubber Study Group), the custodian of the world's rubber industry. We are always keen to highlight the stellar work this organisation does in its highly-informed support of the world's rubber-growing and consuming nations and companies, providing updated and relevant data and statistics. The Group's recent World Rubber Summit ("From Evolution to Revolution: New Paths for the Rubber Economy") was very timely and topical, and as usual, provided a meeting ground for some of the finest minds and most connected professionals in the industry.

K M Mammen, the Chairman & Managing Director of MRF, has again been elected Chairman of ATMA, (Automotive Tyre Manufacturers Association). As the leader of MRF, India's largest tyre company, he is the right person to guide the destinies of the nation's fast-growing tyre industry.

Heartiest Congratulations to Dr. K N Raghavan, who has been appointed the Executive Director of the Indian Rubber Board. His varied experience and his tenure as first Secretary (Commerce) at the Indian High Commission in Singapore will stand him in good stead as he leads the Indian NR



industry, which is battling falling prices and output. We recently heard the news that the International Tripartite Rubber Council (ITRC), which is made up of the world's three top NR-producing countries — Thailand, Indonesia and Malaysia — have agreed to cut exports by 240,000 tonnes over a four-month period starting in April, in an attempt to counter the present depressed NR price levels.

Industry events recently included The Tire Technology Expo held in Hannover, Germany from March 5 to 7, which was a resounding success. Among the leading exhibitors were HF (Harburg Freudenberg), LANXESS, ARLANXEO, Schill & Sielacher and Zeppelin Systems.

In other recent events, Turkey's Kordsa continues to expand its global footprint with a new \$180 million investment to further reinforce its strong international position and remains a company to watch.

We are pleased to publish two very interesting reports in this issue:

a) Prof. Dr. Ferdinand Dudenhöffer on the high investment costs for electric cars

b) Dr. Prachaya Jumpasut's quarterly report on the global rubber industry availability and demand, which is very insightful as usual

We wish you pleasant reading even as we start work on our next issue, which we hope to bring to you soon!

**Aida Malik**

**M Noorani**

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# Salvatore Pinizzotto

## Secretary-General International Rubber Study Group (IRSG) in an interview with M Noorani

### What have the first two years of your tenure as Secretary General been like?

These first two years as Secretary-General of IRSG have been extremely interesting and at the same time challenging. IRSG plays a very important role in the rubber industry, as the most authoritative source of statistical information and as the only forum where Governments, industry and other important stakeholders can meet to discuss the main challenges that the rubber economy faces. The IRSG Secretariat has constantly worked to improve the accuracy of its statistics as well as to enhance its capability in the analysis of short and long-term market trends. The World Rubber Summit has recorded, especially in the last two editions, a marked increase in terms of participants rewarding our efforts to improve the overall conference experience for the delegates.

High-profile speakers and more networking opportunities have really made the World Rubber Summit the place to be for those that would like to remain updated on the latest trends in the rubber sector. I would like to thank the IRSG's Member Governments and industry members for all the support they have provided to the IRSG Secretariat in these



two years.

**Have you been able to achieve most of the objectives that you had in mind when taking over?**

A lot has been achieved in these two years, but we need to constantly monitor and develop our activities to make sure that IRSG could continue to support the rubber sector in the most effective way as it has been the case since its foundation in 1944. We are very proud that this year we can celebrate the 75<sup>th</sup> anniversary of IRSG, a goal that has been possible to achieve, thanks to the commitment and passion of all the people that over the years have worked in IRSG and to those that have always believed in the strategic role that IRSG plays in rubber.

**Two years on, what are your aims/priorities for the IRSG?**

Our priorities have not changed. We have to continue to provide high-quality statistics and market analysis to Governments, industry and all other stakeholders in the rubber economy. The aim is to increase transparency in the rubber sector through the publication and dissemination of reliable and accurate information. It is as important today as it has been in the past. At the same time, IRSG needs to further enhance its role of link between Governments and industry. The rubber sector is fast changing and a proper dialogue among various stakeholders is very important to make sure that adequate solutions could be identified to sustain growth and development along the whole rubber value chain.

**Your theme of the World Rubber Summit this March (18-19) "From Evolution to Revolution: New Paths for the Rubber Economy" is a very interesting one and I am sure the conference must have been very successful. Can you tell us more about this WRS?**

The theme of this year's WRS "From Evolution to Revolution: New Paths for the Rubber Economy" focussed to underline the challenges the industry is called to face to make sure that future generations could look at the rubber economy as one that is profitable, environmentally sound and socially just. But it is a clear invitation to all stakeholders to think "out of the box" to make sure that new pathways to effective solutions could be identified. In this sense, the WRS 2019 has certainly given a great contribution. We have seen the participation of Governments' representatives (from both producing and consuming countries), industry leaders and innovators that have provided insights on current and future trends.

**Has there been a further increase in the Asia Pacific Regions' share of global NR production and consumption?**

Asia-Pacific's share of the total global NR production is around 91%. In fact, the relative share of this region has declined due to increase in NR area and subsequent production in West-Africa.

Asia-Pacific represents 74% of the global NR consumption, driven by China which uses more than one third of the global production. Relative share of this region has been consistently increasing driven by NR consumption in India and South-East Asia, despite deceleration in Chinese growth in the recent years.

**Your views on the NR production and potential of Cambodia, Vietnam, Myanmar and the Philippines would be very interesting.**

Due to area expansion in Cambodia, Vietnam, Myanmar and the Philippines during 2008-2012, mature area of these countries has been significantly increased. Tapped area is

certainly a factor that influences the actual production which can be primarily driven by market prices.

**Can you please share with us your forecast for global production of rubbers (natural and synthetic) in 2019, 2020 & 2025?**

IRSG forecasts natural rubber consumption to increase by 2.6% in 2019 and 2.3% in 2020, and synthetic rubber consumption is forecast to increase by 2.4% in 2019 and 2.1% in 2020.

NR production is forecast to increase by 2.6% in 2019 and 2.3% in 2020.

**Has there been a further evolution and increase in the roles of POAs in the IRSG?**

This question gives me the opportunity to explain 'what's the benefit to be an industry member of IRSG'. Currently, IRSG has more than 100 members that covers all the

whole rubber value chain: from natural and synthetic rubber producers, to processors, traders, important financial institutions, rubber associations and the major tire manufacturers. All IRSG's PoAs increase their market intelligence capabilities accessing the IRSG's data and publications on the world rubber market, enhance business opportunities as part of the unique IRSG's networking system and are able to significantly make a difference in the rubber sector working closely with the experts of the IRSG secretariat in promoting projects of regional/national interest. Furthermore, PoA members can participate as observer at the meetings of the Industry Advisory Panel (IAP) and benefit of special fees for the participation at the WRS. PoAs could also make use of the enhanced IRSG's communication tools and the recently-launched IRSG Blog to disseminate information about companies' activities and products among the IRSG's members and the general public.

**This year's WRS theme "From Evolution to Revolution: New Paths for the Rubber Economy" is a clear invitation to all stakeholders to think "out of the box" to make sure that new pathways to effective solutions can be identified**

# IRSG : FROM EVOLUTION TO REVOLUTION : NEW PATHS FOR THE RUBBER ECONOMY



**H**ow does the International Rubber Study Group (IRSG) continue to command attention and respect as the leading, intergovernmental voice of the global rubber-producing and consuming industries? The answers lie in the ability of the organisation to consistently deliver excellence. Whether the IRSG is providing data and statistics about natural rubber (NR), analysing trends, publishing estimates and studies or organising conferences that bring together growers and users

of this vital commodity, year after year this Singapore-based group sets the bar high.

This cover story follows on the heels of the 2019 edition of the IRSG's highly-awaited World Rubber Summit (WRS), which was held from March 18-19 at Park Royal in Singapore. The Summit featured substantive and thought-provoking sessions, with the theme, 'From Evolution to Revolution: New Paths for the Rubber Economy'. The session on 'Rubber Supply, Demand Opportunities and Risks for Future Growth' was chaired by Dr. Lekshmi Nair, Head of Economics and Statistics at the



IRSG, with presentations made by Juan Ramon Salinas, Managing Director of IISRP (International Institute of Synthetic Rubber Producers); Fan Yanwen, Vice General Manager, Trade Department, Shanghai Grandnet Supply Chain Co.Ltd.; Gerard Stapleton, Head of Natural Rubber Research, LMC International and Paul Speed, Director, Operations & Acquisitions, New Forest Asia Singapore Pte Ltd.

The IRJ revisits IRSG, the custodian of the global NR industry, two years after the current Secretary General Salvatore Pinizzotto took over in January 2017. Since then, he has done a commendable job in fine-tuning the IRSG even further into a well-knit and efficient team. This intergovernmental organisation for NR-producing and consuming countries has a far-reaching influence globally and is greatly respected.

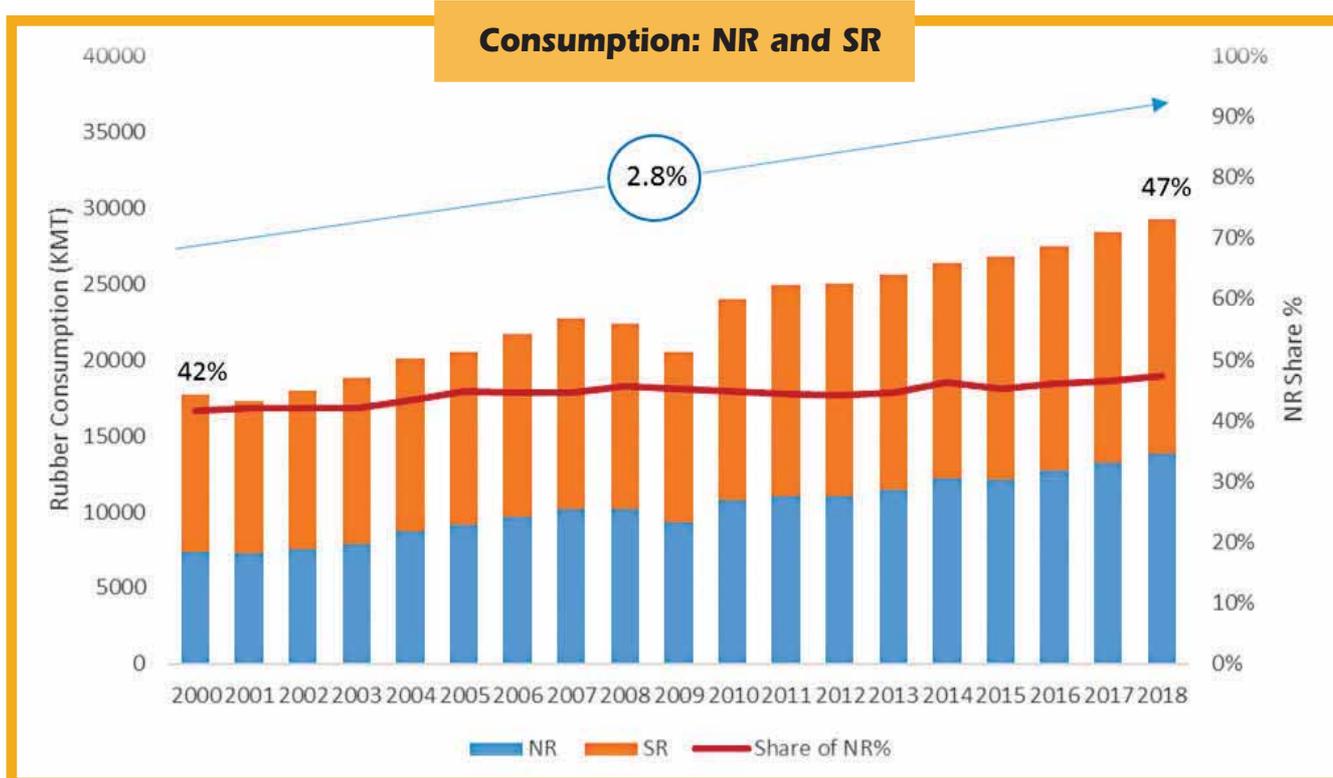
## History

The International Rubber Regulation Agreement was signed in 1934 by the UK, the Netherlands, France, Thailand and the colonial government of India. The agreement between the world's major rubber-producing nations of the time formed a cartel, in order to restrict global rubber production and maintain a stable, high price for the commodity. The agreement was originally planned to last until the end of 1938, at which point it was renewed until the end of 1943. At the time, only the UK and the Netherlands had free representative governments. NR supplies from south-east Asia were cut off as World War II raged. Meanwhile, a new, large-scale synthetic rubber industry was being developed by the US. Towards the end of 1943, the governments of the Netherlands and the UK announced that they did not intend to renew the agreement. They intended to

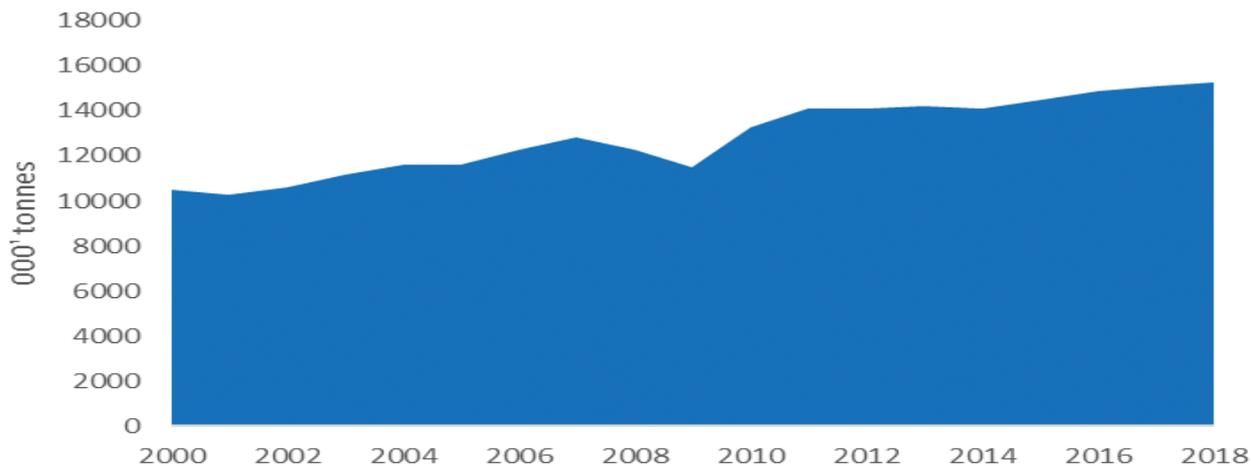
establish a new committee on a wider basis, but without any regulatory powers. The agreement was extended to the end of April 1944, to allow the activities of the Secretariat to be wound down. Negotiations were then conducted by US government representatives, as the country was by then supplying most of the rubber required for the joint war effort. At a meeting in London in August 1944 attended by industry representatives, the three governments jointly announced the formation of the IRSG. Its objective was to provide an initial forum for the discussion of problems of mutual interest concerning the current and future position of the rubber industry. The changes that were expected to take place on the conclusion of the war would be kept under constant review. One of the key features of the new Group is that it would not make binding recommendations. The terms of reference read, in part:



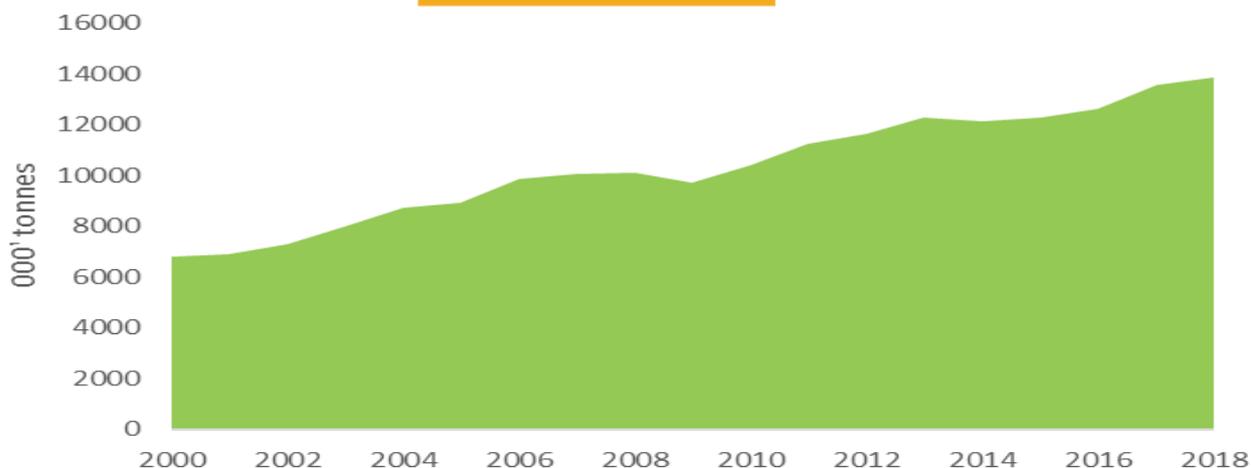
The IRSG meets from time to time to discuss common problems arising from the production, manufacture and use of rubber, crude, synthetic and reclaimed. Studies will be initiated and possible solutions to rubber problems will be considered. However, the IRSG will not formulate and transmit recommendations to the participating governments, although



**SR Production**



**NR Production**

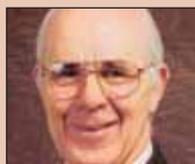


**Secretary-Generals of the IRSG**

A G Pawson 1944–1960  
 P F Adams 1961–1976  
 Tan Sri Dr. L Bateman 1976–1983  
 J D Carr 1983–1987



**Tan Sri Dr. B C Sekhar**  
1988-1993



**M E Cain**  
1994-1999



**Dr. A F S Budiman**  
2000-2004



**Dr. H P Smit**  
2005-2009



**Dr. S V Evans**  
2010-2016



**S Pinizzotto**  
2017-present

## Members of the International Rubber Study Group

Founder Members 1944/45		
	France	United Kingdom
	Netherlands	United States of America
Previous members		
	Joined	Withdrew
Australia	1947/48	1995/96
Austria	1957/58	1979/80
Brazil	1963/64	1991/92
Cambodia	1950/51	1974/75
	1994/95	1996/97
Canada	1947/48	1992/93
Cote d'Ivoire	1966/67	2001/02
Czechoslovakia	1948/49	1950/51
	1957/58	1992/93
Denmark	1947/48	1993/94
Finland	1988/89	1993/94
Hungary	1947/48	1979/80
India	1961/62	2000/01
Indonesia	1950/51	2006/07
Liberia	1947/48	1989/90
Mexico	1976/77	1987/88
Myanmar	1947/48	1997/98
Netherlands	1944/45	2004/05
Nigeria	1960/61	2002/03
Poland	1970/71	1980/81
Sweden	1965/66	1995/96
Vietnam	1950/51	1976/77

## Member governments

- ▶ **Republic of Cameroon**

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- ▶ **Cote d'Ivoire**

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- ▶ **European Union**

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- ▶ **India**

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- ▶ **Japan**

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- ▶ **Nigeria**

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- ▶ **Singapore**

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- ▶ **Sri Lanka**

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- ▶ **Russian Federation**

## The Assemblies of the International Rubber Study Group

The Group meets regularly in Assemblies, attended by delegates of Member Governments and their advisers, and observers from non-member governments, international organisations and other public and private bodies. Since its inception, the Group has held 52 Assemblies in the following countries:

Assembly	Year	Country	City	Chairman
1	1945	United States of America	Washington	B F Haley
2	1945	United Kingdom	London	G Archer
3	1946	The Netherlands	The Hague	P Honig
4	1947	France	Paris	G Peter
5	1948	United States of America	Washington	D D Kennedy
6	1949	United Kingdom	London	G Clauson
7	1950	Belgium	Brussels	A Moulaert
8	1951	Italy	Rome	A Pirelli
9	1952	Canada	Ottawa	A F W Plumtre
10	1953	Denmark	Copenhagen	H T Karsten
11	1954	Sri Lanka	Colombo	S F Amerasinghe
12	1955	Liberia	Monrovia	G Padmore
13	1957	Indonesia	Jogjakarta	J M Sadjarwo

14	1958	Germany	Hamburg	A Schafer
15	1960	Malaysia	Kuala Lumpur	M Khir Johari
16	1962	United States of America	Washington	W M Blumenthal
17	1964	Japan	Tokyo	Toshio Urabe
18	1966	Nigeria	Lagos	G A Ige
19	1967	Brazil	Sao Paulo	Cassio Fonseca
20	1969	United Kingdom	London	P W Carey
21	1970	Republic of Singapore	Singapore	F Lee Siew Kwong
22	1971	Canada	Ottawa	M Schwarzmann
23	1972	Thailand	Bangkok	Phit Panyalakshana
24	1975	Indonesia	Jakarta	A Muluk Lubis
25	1978	United States of America	Washington	Julius L Katz
26	1980	Malaysia	Kuala Lumpur	Wong Yoke Meng
27	1982	Mexico	Mexico City	C Licon Baca
28	1984	United Kingdom	London	M Hunt
29	1985	Côte d'Ivoire	Abidjan	J-B Amethier
30	1987	Germany	Hamburg	H Bopp
31	1989	Thailand	Bangkok	S Wasuwat
32	1990	Canada	Ottawa	W Turner
33	1991	Republic of Cameroon	Yaounde	P M Musonge
34	1992	Republic of Singapore	Singapore	D Chin
35	1994	Sri Lanka	Colombo	R S Jayaratne
36	1995	Japan	Tokyo	K Shimizu
37	1996	Thailand	Phuket	Vichitr Benjasil
38	1998	Indonesia	Bali	Rosediana Suharto
39	2000	Belgium	Antwerp	Mr Jacques Thinsy
40	2004	Cameroon	Limbe	Henry Njala Quan
41	2005	Sri Lanka	Colombo	J Abeywickrama
42	2006	Malaysia	Kuala Lumpur	Datu Dr M D Lunjew
43	2007	Thailand	Bangkok	Dr Adisak Sreesunpagit
44	2009	Republic of Singapore	Singapore	Jacelyn Teo
45	2012	Republic of Singapore	Singapore	Sheela Thomas
46	2013	Republic of Singapore	Singapore	Sheela Thomas
47	2014	Republic of Singapore	Singapore	Sheela Thomas
48	2015	Republic of Singapore	Singapore	Reinhard Buescher
49	2016	Republic of Singapore	Singapore	Dragos Negrescu
50	2017	Republic of Singapore	Singapore	Reinhard Buescher
51	2018	Sri Lanka	Colombo	Aly M Toure (HE)
52	2019	Republic of Singapore	Singapore	Aly M Toure (HE)

## Panel of Associates

Sr.No.	Company Name	Country
1.	Addivant UK Ltd	UK
2.	Agropecuaria Caucho S.A	Guatemala
3.	All India Rubber Industries Association (AIRIA)	India
4.	Analysis and Forecasts for the Rubber Economy	Netherlands
5.	Apollo Tyres Ltd	India
6.	Asahi Kasei Corporation	Japan
7.	Automotive Tyre Manufacturers' Association (ATMA)	India
8.	Bank of Thailand	Thailand
9.	Barena Group Sdn Bhd	Malaysia
10.	Bridgestone Singapore Pte Ltd	Singapore
11.	BST Elastomers Co Ltd	Thailand
12.	C2H Agricola S.A	Brazil
13.	Cabot Corporation	USA
14.	Camso Loadstar (Pvt) Ltd	Sri Lanka
15.	CEAT Limited	India
16.	CIRAD-CP	France
17.	Codelco Chile	Chile
18.	Continental Tires Holding Singapore Pte Ltd	Singapore
19.	Cooper Tire International Trading Co.	Singapore
20.	DBS Bank Ltd	Singapore
21.	Dynasol-INSA	Spain
22.	European Tyre & Rubber Manufacturers' Association (ETRMA)	Belgium
23.	Evonik Industries AG	Germany
24.	Felda Rubber Industries Sdn Bhd	Malaysia
25.	FIL Investments Management (S) Ltd	Singapore
26.	GAPKINDO (Rubber Association of Indonesia)	Indonesia
27.	Giti Tire Global Trading Pte Ltd	Singapore
28.	Goodpack Ltd	Singapore
29.	Goodyear Orient Company (Pte) Ltd	Singapore
30.	Green Forest Consulting Pte Ltd	Singapore
31.	Hainan Rubber Industry Group	China
32.	Hankook Tire Worldwide	Korea
33.	Hevea Global Pte Ltd	Singapore
34.	Indofood Agri Resources Ltd	Singapore
35.	International Rubber Consortium Limited (IRCo)	Thailand
36.	JK Tyre & Industries Ltd	India
37.	Korea Tire Manufacturers Association (KOTMA)	Korea
38.	Lee Rubber (Selangor) Sdn Bhd	Malaysia
39.	LG Chem	Korea
40.	LMC International	UK
41.	Malaysian Rubber Board (MRB)	Malaysia
42.	Malaysian Rubber Export Promotion Council (MREPC)	Malaysia
43.	Mardec Berhad	Malaysia
44.	Mavalle S.A.	Colombia
45.	MRF Limited	India
46.	Nissan Motor Co Ltd	Japan

47.	Nokian Tyres Plc	Finland
48.	Notch Consulting Inc	USA
49.	NV Bekaert SA	Belgium
50.	Okachi and Co Ltd	Japan
51.	Olam International Ltd	Singapore
52.	ORGKHM Biochemical Holding	Russia
53.	Performance Additives Italy SpA	Italy
54.	Pirelli Tyres SpA	Italy
55.	PT. Kharisma Pemasaran Bersama Nusantara	Indonesia
56.	R1 International Pte Ltd	Singapore
57.	Ravago - Resinex	Belgium
58.	RCMA Asia Pte Ltd	Singapore
59.	RCP Technologies Sdn Bhd	Malaysia
60.	Regional Rubber Trading Co. Pte Ltd.	Singapore
61.	Reliance Industries Limited	India
62.	Rubber Manufacturers Association (RMA)	USA
63.	Rubbertnet (Asia) Pte Ltd	Singapore
64.	Schill & Seilacher "Struktol" AG	Germany
65.	Semperit Investments Asia Pte Ltd (SIA)	Singapore
66.	Shanghai Tower Commodities Co. Ltd	China
67.	Siam Commercial Bank	Thailand
68.	SIAT SA	Belgium
69.	Sibur LLC	Russia
70.	Sime Darby Plantation Sdn Bhd	Malaysia
71.	Singapore Exchange (SGX)	Singapore
72.	SIPEF NV/SA	Belgium
73.	Societe des Matieres Premieres Tropicales (Michelin) [SMPT]	Singapore
74.	Société Internationale de Plantations d'hévéas (SIPH)	France
75.	Sogescol FR S.A.	Switzerland
76.	Sri Trang Agro-Industry PLC	Singapore
77.	Sumitomo Rubber Industries Ltd	Japan
78.	The Japan Automobile Tyre Manufacturers Association Inc (JATMA)	Japan
79.	The Japan Rubber Manufacturers Association (JRMA)	Japan
80.	The Rubber Economist	UK
81.	The Rubber Trade Association of Europe (RTAE)	UK
82.	The Rubber Trade Association of Japan (RTAJ)	Japan
83.	Timberfarm GmbH	Germany
84.	Tire Industry Research	UK
85.	Tokyo Commodity Exchange, Inc (TOCOM)	Japan
86.	Tong Thai Technical Rubber Co., Ltd	Thailand
87.	Toyo Tire & Rubber Co., Ltd	Japan
88.	Toyotsu Chemiplas Corporation	Japan
89.	Trigon Gulf FZCO	UAE
90.	TSRC Corporation	Taiwan R.O.C.
91.	Versalis SpA	Italy
92.	Vietnam Rubber Association	Vietnam
93.	wdk Wirtschaftsverband der deutschen Kautschukindustrie e.V.	Germany
94.	Weber & Schaer GmbH & Co	Germany
95.	Yokohama Rubber Singapore Pte Ltd	Singapore



## WORLD RUBBER SUMMIT 2019

### IRSG – World Rubber Summit 2019 took place from March 18-19 at Parkroyal On Beach Road, Singapore

#### From Evolution to Revolution

New Paths for the Rubber Economy was the theme of the World Rubber Summit (WRS) 2019. Rubber is omnipresent in our everyday life, moving our lives and our world and it is a very important source of living for many people around the globe. Innovation and technology transfer have always played a crucial role in developing a sector that has constantly evolved adapting to fast-changing economic, social and environmental conditions worldwide. Today, new challenges are ahead. Industrialisation and urbanisation in emerging economies, changing demographics and consumer preferences, rise of new technologies and climate changes have the potential to trigger trends that require new approaches through the whole rubber value chain.

The two-day WRS was a unique and exclusive opportunity for global leaders to meet, share best practices and lay the foundations for future collaborations.

Apart from providing insights into the industry, the WRS:

- Is developed by experts in the industry for the industry
- Provides the opportunity to interact and engage with business leaders, Governments, NGOs and academic experts
- Provides world-class networking opportunities
- Creates opportunities for you to widen your contacts, showcase your products and services

#### Summit Topics' Highlights

During the conference, presentations and panel sessions provided key insights and valuable solutions on how the rubber economy could realise a global transition towards a sustainability approach that can open doors to further development and enhance opportunities for all. The WRS is a unique and exclusive opportunity for the global rubber industry to not only discuss the current challenges that the industry is facing but also the future opportunities that might arise from the disruptive trends, which are transforming the automotive industry and the extensive use of innovative solutions to improve rubber quality and productivity.



**SPEAKERS AT WRC :**



**H.E. Mr. Aly Toure**  
Chairperson  
International Rubber  
Study Group (IRSG)



**Salvatore Pinizzotto**  
Secretary- General  
International Rubber  
Study Group (IRSG)

**Host:**



**Mr Satvinder Singh**  
Assistant CEO  
Enterprise Singapore

**Keynote Speaker:**



**Mr Stefan Rittmann**  
Managing Director of ARLANXEO  
Deutschland GmbH, Executive  
Vice President of Corporate  
Business Development, Member  
of the Executive Leadership team  
of the ARLANXEO group



**Fatimah Mohamed Arshad**  
Senior Research Fellow  
Institute of Agricultural and  
Food Policy Analysis  
Universiti Putra Malaysia



**Joseph-Olivier Biley**  
Chief Executive Officer  
WeFly Agri



**Manu Bhaskaran**  
Chief Executive Officer  
Centennial Asia  
Advisors Pte Ltd



**Vincent Gitz**  
Director of the  
CGIAR Research Program  
on Forests, Trees and  
Agroforestry  
Center for International  
Forestry Research (CIFOR)



**Gunther Lottmann**  
Chief Executive Officer  
Grupo Fortaleza  
Guatemala



**Ellen Tan-Go**  
Chief Operating Officer/  
Vice President  
Farma Rubber Industries Inc.



**Maiprae Loyen**  
Chief Executive Officer  
MTI Solution Co., Ltd



**Robert Meyer**  
Chief Executive Officer  
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**Juan Ramon Salinas**  
Managing Director  
International Institute of  
Synthetic Rubber  
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**Beh Kok Fong**  
General Manager  
Bridgestone  
Singapore Pte. Ltd.



**Stefano Savi**  
Director  
Global Platform for  
Sustainable Natural Rubber



**David Shaw**  
Chief Executive  
Tire Industry Research



**Georgette Tan**  
President  
Singapore Committee  
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**Dar Wong**  
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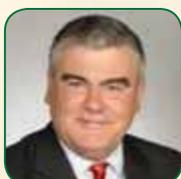
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**Erik Christianto**  
Account Manager  
Trucost, ESG analytics  
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**Michael Coleman**  
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Secretary-General  
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**Nicolas Petit**  
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**Enrico Lucchese**  
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**Paul Speed**  
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Operations & Acquisitions  
New Forest Asia  
Singapore



**Andreas Topp**  
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Industrialization Tires



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**Gerard Stapleton**  
Head of Natural  
Rubber Research  
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**Jean-Noel Quillet**  
Managing Director  
Société des Matières  
Premières Tropicales  
Pte Ltd





IAP\_S\_E Meeting 2018



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2018

the latter will be kept fully informed of the proceedings of the IRSG through their representatives.'

This change of stance, towards a non-regulatory body, was a response to the practicalities of the post-war situation. The production capacity of the NR-producing areas was a matter of conjecture, and the US, the world's largest rubber user, had secured its own supply of synthetic rubber (SR). While the pre-war domination of NR had come to an end, the future, despite the technical inadequacies of the new synthetic rubbers, was uncertain. The governments were concerned that the combined production capacity for NR and SR might soon be twice the projected demand, which would have grave consequences for all the producers. It was understood that only by exchanging information on production and demand, would the member governments have the necessary information to make future policy decisions.

The first meeting was held in Washington DC in 1945. The IRSG was to be headquartered in London, where it remained till 2008, when it was moved to Singapore, in order to be closer to the core of the world's rubber industry. From the very start, the Group has met every year for an Assembly or Group Meeting.

Membership has grown and changed over the years and the current Member Governments are: The Republic of Cameroon, Cote d'Ivoire, The European Union (28 Member States), India, Japan, Nigeria, Russian Federation, Singapore and Sri Lanka.

The global NR scenario is causing great concern, between the prevailing low prices and worries about future availability. With its excellent track record of addressing the burning issues of the day, the 2019 World Rubber Summit was very useful in highlighting and discussing these problems and suggesting the course for the future. The global rubber industry will continue to count on Salvatore Pinizzotto and the IRSG to help chart the course through the troubled waters ahead and ensure that all the stakeholders have the support and information they need to meet these challenges.

## Pakistan's tire consumption to reach 28.5 mn units by 2024

●The Pakistan tire market reached a consumption volume of 20.9 million units, growing at a CAGR of almost 6.4% during 2011-2018 and is projected to hit 28.5 million units by 2024.

Tire demand in the country has seen strong growth in recent years, with the increase in the vehicle motorisation rate and enhancements in road infrastructure. The government has been focusing on infrastructural and macroeconomic reforms and the growth seen in the industrial, construction and agriculture sectors is sure to spur the growth of the country's automotive industry. Pakistan's government has also raised taxes on imports of tires in order to promote and strengthen the country's domestic tire manufacturers, which has further driven market growth.

The consistent rise in tire demand in the country has led to local as well as foreign investors showing interest in the tire industry of Pakistan. Two wheelers and three wheelers currently represent the largest segment of the country's tire market. Replacement tires account for the majority of the total tire market in Pakistan and domestic production currently accounts for a higher share of the total tire market.

Pakistan's tire market has been segregated on the basis of the legitimate market and the grey market, with the legitimate market currently accounting for a higher share. Radial

tires currently dominate the country's tire market and tubeless tires currently represent the biggest segment in the market.

Regarding a geographical breakdown, the state of Punjab currently dominates the Pakistan tire market, accounting for the majority of the share, with Sindh, Khyber Pakhtunkhwa and Balochistan making up other important segments.

## Koetz to lead Conti's tire division in management reshuffle

●Christian Koetz will take over the leadership of Continental Corp.'s tire division following a management restructuring to take effect in April. Current tire division head and member of the executive board Nikolai Setzer will become the spokesman for the newly-created "automotive board", Continental announced 14 March. Koetz, who currently leads the commercial vehicle tires business unit, will assume the three-year tenure for head of tire division and corporate purchasing as of April 1. He will also become a member of the Continental's executive board. Koetz studied engineering management and joined Continental's tire division as a trainee in 1996. He was later responsible for key account management for the original equipment in North America, and then for research and development. From 2011 to 2018, he headed the passenger and light truck tires replacement business for Europe, the Middle East and Africa, before taking the top position at the commercial vehicle tires business unit

in July last year. From 2015 to the end of 2017, he was also president of the European Tyre & Rubber Manufacturers' Association (ETRMA).

Nikolai Setzer's position on the executive board has been extended by five years 'ahead of time' to the end of March 2024. In his role as the spokesman for the automotive board, Setzer will be in charge of "maintaining a unified business strategy" in this area.

Additionally, his team will be complemented with a chief technology officer (CTO) as of 2020, to advance automotive development activities.

Continental's supervisory board also extended the terms of executive board members Frank Jourdan and Helmut Matschi 'ahead of time' until the end of March 2024. CFO Wolfgang Schaefer's term, which was due to expire this year, has been extended by five years to the end of 2024. The reshuffle is in support of Continental's current process of reorganisation to become a "leading technology company in our industries," said CEO Dr. Elmar Degenhart.

The newly-established automotive board will start operation as of April, to "lighten the load" on the corporate executive board and pursue the transformation process in the automotive area. In addition to Setzer, members of this board include Frank Jourdan, president chassis & safety division; and Helmut Matschi, president interior division. The board will be completed with Dr. Dirk Abendroth, CTO of automotive; as well as the heads of finance & controlling and HR for automotive, who are yet to be appointed.



Nikolai Setzer : Spokesman Automotive Board



Christian Koetz: Head of Tire Division and Purchasing



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- Scrap tire and rubber recycling plant

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## JK Tyre & Industries appoints Sanjeev Aggarwal as CFO

● On February 19, JK Tyre and Industries Ltd said it has appointed Sanjeev Aggarwal as its chief financial officer (CFO). Aggarwal took over with effect from February 25 in place of Ashok Kumar Kinra, who has “ceased to be the CFO in the normal course after a long tenure”, the company said in a regulatory filing. Kinra will, however, continue to be with the company as a financial advisor, it added.

## Linglong’s new graphene tire development

● The Chinese tire giant, Linglong Tire, announced that in January, the research on “large-scale application of graphene rubber composites”, which was jointly conducted by Beijing Tiancheng Linglong Tire Co., Ltd., a wholly-owned subsidiary of Linglong Tire, and Beijing University of Chemical Technology, passed the audit and acceptance held by Beijing Municipal Science & Technology Commission (BMSTC).

China’s leading experts from Tsinghua University, Peking University, National Center for Nanoscience and Technology (NCNT), Beijing Normal University and Beijing Research Institute of Sinopec (BRIS) all participated in the audit.

The research represents a milestone for Linglong Tire. Guo Baochun, professor at South China University of Technology, provided the key technical support with his team, and the trial production of graphene-enhanced tire was completed in the semi-steel radial tire production line in Linglong Tire’s manufacturing facility in Zhaoyuan.

The team jointly developed the graphene pretreatment technology, which lowered the production cost for the graphene pretreatment. After the pretreatment body was applied in the tread formula, the graphene-enhanced tire can be produced without changing the existing tire production process and equipment, in addition to some appropriate process adjustment, to ensure the

## Kumho Tire names Jeon Dae-jin as CEO

● Kumho Tire Co. Inc. has appointed Jeon Dae-jin, currently senior executive vice president, as its new CEO and president.

Jeon had been serving as the company’s acting CEO and most recently was overseeing overall production and the China Production Technology Division for Kumho Tire.

During his 35-year tenure with Kumho, Jeon has held various leadership roles in compound research and technology development. He has also bolstered manufacturing processes, increasing productivity, efficiency and effectiveness.

“To drive business transformation, we need to align people, process and technology initiatives of our company more efficiently with a clear vision and objective,” Jeon said. Top priority, he added, will be to increase investment in resources and enhance customer support along with organising internal systematic functions.



feasibility of industrial production process with a controlled cost. The trial-produced tires achieved breakthroughs in key performance, such as fuel efficiency, safety and anti-static, and successfully demonstrated the application value of graphene in the energy-saving tire space.

Specifically, Linglong says the fuel-efficient grade of its graphene tire is close to the grade A of the EU Tire Labeling Regulation. Its wet grip performance is estimated to achieve the level A of EU Labeling, and its comprehensive performance has reached the international advanced level. In addition, the abrasion resistance and thermal conductivity of the tires show varying degrees of improvement, compared with the high-performance green tires on the market.

As a material, graphene has the advantages of ultra-high conductivity and thermal conductivity. A small amount of graphene in polymer composites can significantly improve the conductivity and thermal conductivity of the materials. Also, the characteristics of ultra-high strength and super-large specific surface area of graphene enable it to effectively improve

the abrasion resistance of rubber composites. Through micro interface technology originally developed by the research team, the fuel consumption of the graphene tire can be effectively reduced.

## Evonik’s new truck tire Silica

● Evonik reports that it has developed a new silica that it says is particularly suitable for use in truck and bus (TBR) tires. In contrast to passenger car tires, TBR tires use mainly natural rubber, which, in combination with silane, places special requirements on the silica. With Evonik’s latest silica/silane development, fuel savings could be as high 8 per cent, the company said, which cuts costs and is better for the environment.

Evonik reports that the material helps reduce braking distance, leading



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to greater driving safety on wet or snow-covered roads. According to the company, the new silica/silane is easily incorporated into and dispersed in the natural rubber compound, and contributes to improved abrasion resistance for better mileage performance.

Jens Kiesewetter, Evonik's head of technical service for rubber silica, explained: "Silica/silane technology, especially when used in green tires for buses and trucks with high fuel consumption levels, is making an important contribution to climate protection, and that is in anticipation of the recently concluded EU agreement on targets for CO2 reduction for trucks." Meanwhile, Evonik also reports that it is expanding the tire silica production capacity at its plant in Adapazari, Turkey. The expansion project, which is in response to growing industry demand, will primarily serve customers in south-eastern Europe and the Middle East with an additional 40 kilotons of capacity per year. The project is expected to be complete in late 2019.

### Bauma debut for BKT's 'giant'

● BKT has big plans for next month's Bauma show – the off-highway tire specialist is getting ready for the global debut of its largest tire ever at the construction machinery trade fair.

This tire is of course the Earthmax SR 46. It has already been seen in its 49-inch incarnation, but BKT is now introducing a 33.00 R51 version. Standing more than three metres tall, the new Earthmax SR 46 size weighs



**BKT's Earthmax SR 46 is now available in size 33.00 R51**

over 2.4 tonnes and was developed for use on rigid dumpers operating under adverse conditions in rocky environments such as mines, dams, and major construction sites.

### Algerian tire plant starts production

● Algeria's first tire plant reached the "industrialisation phase," just ahead of commercial production, according to project support firm Black Donuts Engineering. Based in in Sétif, 300km east of Algiers, the plant has a production capacity of 2 million passenger car tires a year and came on-stream 21 Feb, said Kai Hauvala, founder of Finland-based Black Donuts.

Algerian consumer electronics and household appliances group Saterex is the owner of the plant, and tires from the facility will go to market under its Iris brand. Finnish automation specialist Cimcorp Oy supplied its Dream Factory concept to the plant, covering both materials handling and software supply for the plant. The new facility was originally expected to be operational by spring 2018. It will be the first tire plant to operate in Algeria since Michelin Group closed its production site in the capital in 2013.

### Modernisation at plants cause Goodyear to cut 1,100 jobs in Germany

● Goodyear announced in March that is going forwards with plans to modernize the Goodyear Dunlop Tires Germany GmbH's tire manufacturing plants in Hanau and Fulda, Germany. The rationalization plan is part of the U.S. tire giant's strategy to strengthen its competitiveness and increase its production of premium, large-rim-diameter consumer tires. The modernization will involve changes to the layout of the plants, efficiency gains from new equipment and a cut in the production of tires for declining, less profitable segments of the tire market. This production cut would lead to approximately 1,100 job reductions. This plan is subject to consultation with relevant employee representative bodies.

Goodyear says this rationalization plan will be completed during 2022 and estimates the total pre-tax charges associated with it to be at least \$135 million, of which about \$125 million is expected to be cash charges primarily for associate-related costs and approximately \$10 million expected to be non-cash charges, primarily related to asset write-offs and accelerated depreciation.

The modernization plan is expected to increase the productivity of both plants and the resulting conversion savings are expected to improve the operating income of the Europe, Middle East and Africa's segment by \$60 to \$70 million on an annualized basis, over a three-year period beginning in 2020.

### Rubber farmers in Philippines launch motorcycle tire brand

● A group of rubber farmers in the Philippines have developed a motorcycle tire using locally-harvested rubber cup lumps. The country's Department of Agriculture (DA) Secretary, Manny Piñol, said the group will help produce Pilipinas Agila Tires—the first farmer-owned motorcycle tire brand in the nation. The Pilipinas Agila Tires are designed for working motorcycles, commonly known as 'habal-habal,' and tricycles.

Piñol stated that this development marks a step forward in the program of the Department of Agriculture (DA) to elevate the farmer from the status of a raw material producer to the processor and merchandiser of finished products with added-value.

The Philippine Rubber Farmers' Cooperative (PRFC), composed of farmers from Mindanao and Palawan, leads the effort to develop finished products from raw rubber cup lumps. PRFC head Amando Pedregosa, head of PRFC, said that the farmers, along with their children, would be the marketing agents of the Pilipinas Agila tires. He was confident the farmers could easily sell these even to their members, since almost everyone of them owns a working motorcycle.

The Pilipinas Agila Tires will soon

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be launched in the market and will cost less than imported tires. PRFC will buy the cup lumps produced by its members and process these into rubber blocks called SPR-20 which will be sold to Leo Tires Manufacturing. The Leo Tires-manufactured Pilipinas Agila will be bought back by the PRFC to be sold in the market.

The DA, through the Agricultural Credit Policy Council (ACPC), has approved a PHP10-M initial working capital of the PRFC with a two percent interest payable in eight years.

In the computation made by PRFC officials, the cooperative will make a little profit from buying cup lumps from its members and selling these as SPR-20 to Leo Tires Manufacturing. The greater profit margin, however, will be realized in the sale of the Pilipinas Agila motorcycle tires where the cooperative is expected to gain at least PHP100 (\$1.9) per tire sold.

Initially, only the 300 x17 motorcycle tire will be produced, mainly because this is widely used and

easily marketable in the provinces, but in the future the PRFC plans to manufacture other tire sizes, including tires for small tractors. The DA aims that before the Duterte administration ends in 2022, the country's rubber farmers will have their own tire manufacturing plant in Mindanao.

### Guizhou Tyre to set up Vietnam subsidiary Advance Tyre Vietnam

●China's Guizhou Tyre plans to set up a fully-owned subsidiary in Vietnam to advance its truck and bus tire project with 1.2 million unit per year capacity. The subsidiary, Advance Tyre (Vietnam), has Euro38 million (\$43 million) registered capital and its business scope covers the manufacturing of rubber tires and rubber products, said Guizhou Tyre's announcement on 5 March. The Euro214-million tire plant is located at the Long Giang Industrial Park in Tien Giang province, adjacent to Ho Chi Minh City. First announced in



April 2017, the project was originally scheduled to finish construction in 2018 and come on-stream in 2019, according to Guizhou provincial government's website.

Phase 2 will include the investment of Euro 125 million for an additional 2 million units per year of capacity. In a 30 Jan statement Guizhou Tyre said its year-on-year net profit rose to Euro 14.6 million in 2018, compared with Euro 29 million net loss the year before.

In phase 3, the company is planning to set up an Euro 18-million rubber processing facility. "The company has effectively adjusted its product portfolio and regional sales proportion, significantly raised tire sales volume and value and upped profit margin," said the announcement.

## Matos to lead Apollo Vredestein's OE strategy in Europe

●In addition to his existing role as chief quality & business excellence officer, Pedro Matos has now taken on the added responsibility of leading Apollo Tyres' original equipment strategy and sales for passenger car tires in Europe.

Matos has over 25 years' experience in the tire industry in a range of different roles, and has worked directly with several major European OEMs in quality, R&D and sales positions. Prior to joining



Neeraj Kanwar



Benoit Rivallant



Pedro Matos

Apollo Tyres in February 2015, he worked for Continental for more than 15 years.

"Pedro's appointment demonstrates Apollo Tyres' full commitment to its OE journey in Europe," comments Neeraj

Kanwar, vice-chairman and managing director of Apollo Tyres. "We are doing the ground work to become a strategic long-term partner for all the OEMs in Europe, as we have been doing in India for over 10 years. Choosing a member of the management board of Pedro's experience and calibre, to lead Apollo Vredestein's OE

strategy and sales in Europe, is a clear signal that we are taking our OE journey in Europe very seriously at the top of our organisation."

Benoit Rivallant, president of Apollo Vredestein, adds: "Being seen as a key player by

European OEMs is one of Apollo Vredestein's strategic goals. With Pedro taking the lead in terms of OE in Europe, we are laying the right foundations for the long-term success of our OE endeavours in this part of the world."

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## Kordsa and Continental have join forces to offer Cokoon, a new eco-friendly adhesion system for textile reinforcing materials

● Continental and Kordsa have together developed a new sustainable adhesive technology standard for bonding textile reinforcing materials with rubber compounds. Reinforcing materials of this kind are used in the tire industry, as well as in the production of mechanical rubber goods like hoses and conveyor belts. The new technology enables the bonding activation of textile reinforcing materials without the use of resorcinol and formaldehyde. Continental intends to manufacture the first series-produced tires using this technology in 2019.

The two development partners are offering the new bonding system technology to all other tire manufacturers and the supplier industry as an open source solution under the brand name 'Cokoon'. Free



Dr. Andreas Topp, Vice President Material and Process Development and Industrialization at Continental Tires & Kordsa CEO Ali Çaliskan

licensing will be handled by the independent law firm Advinno. Continental and Kordsa have chosen to waive development or licensing fees. In return, they expect licensees to make their patents concerning the further enhancement of this technology available to the other partners free of charge via a

licensing pool. Interested companies can request first lab samples now.

"We need to break new ground to master the upcoming challenges the future will hold," says Dr. Andreas Topp, Vice President Material and Process Development and Industrialization at Continental Tires. "The tire industry can send out a clear signal of its responsibility and innovative power by joining to this environmentally friendly open source technology." Devrim Özyaydin, Global Technology Director at Kordsa, adds: "We are working continuously to introduce more environmentally friendly products in the interests of our employees, society and the environment."

Until now, the chemicals resorcinol and formaldehyde have been irreplaceable in the bonding activation of textile reinforcing materials to ensure robust adhesion to the surrounding rubber matrix. As these substances are chemically altered by the vulcanization process, they do not escape from the finished products into the environment. With Cokoon dip technology, however, the bonding of textiles to rubber is now possible without these two substances and can be applied without changing process equipment. Further information is available on the internet at [www.cokoon.com](http://www.cokoon.com).

## Doublestar to acquire financially troubled Hengyu for Euro 120 million

● Doublestar plans to acquire tire maker Hengyu Technology, currently undergoing bankruptcy restructuring, for Euro 118 million (899 million yuan). The investment will go through Jixing Tire, a subsidiary of Doublestar.

Hengyu currently has 650,000 unit annual truck and bus tire capacity and 6 million unit annual passenger car tire capacity on stream since 2015. The capacity at Dongying could be respectively raised to 800,000 and 10 million when a facility upgrade is completed, according to Doublestar. The financially troubled company is located in Dongying, Shandong, a city close to Doublestar's headquarters city Qingdao. Hengyu's product portfolio also includes engineering tires and military tires, said the announcement.

As of mid 2018, Hengyu's unaudited stockholders' equity was pegged at - Euro91 million and its market value at Euro 162 million. Such merger & acquisition deals, "will help the company's expansion and capacity optimisation and gain advantages in competition."

The company's Qingdao site currently has 4 million unit annual truck and bus tire capacity and 6 million unit annual passenger car tire capacity. Doublestar said its second site in Shiyan, Hubei – a relocation project that started in June 2018 – will have capacity for 1.5 million units/year of truck and bus tires and 5 million units/year passenger car tires.



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## LANXESS at 2019 Tire Technology Expo, Deutsche Messe, Hanover Stand 4014



Dr. Dietmar Hoff, head of Tire Marketing Rhein Chemie



### Smart solutions for the tire industry

German chemical major LANXESS showcased its extensive range of products and versatile solutions for manufacturing tires at the Tire Technology Expo in Hanover from March 5 to 7, 2019. These included environmentally-friendly Rhenodiv release agents, Rhenomark tire marking paints, Rhenoshape tire vulcanization bladders, Rhenogran aramid-fiber masterbatches, additives, accelerators and antidegradants. The company was represented at the event by its Rhein Chemie and Advanced Industrial Intermediates business units.

“With our wide range of rubber additives, we offer high-quality, clean and, above all, environmentally-friendly solutions for meeting the ever-more challenging requirements of the tire industry,” commented Dr. Dietmar Hoff, head of Tire Marketing for the Rhein Chemie business unit. “Our products make a

major contribution to the complex processes involved in tire manufacturing, from the provision of high-performance additives for compounding to additives for tire testing,” he added.

### Innovative solutions for smart tires

In the production of “smart” tires and with low-noise and self-sealing tires, it is essential that the release agents applied or transferred to the blank be removed entirely after vulcanisation. This ensures that the polymers, foams or sensors applied subsequently will adhere properly. Such sensors can transmit important data such as tire pressure, temperature or tread depth, and can also pass on relevant alerts to drivers or fleet operators. This improves safety considerably and helps to prevent damage to the tires.

In addition to products containing silicone, such as Rhenodiv BP-286 and Rhenodiv BP-2864, which are removed by means



of laser technology after the tires have been vulcanised, LANXESS has developed completely silicone-free products such as Rhenodiv BP-166 and Rhenodiv BP-9500. A special type of release agent makes these even easier to wash off.

Permanently coated Rhenoshape bladders enable tire manufacturers to vulcanise tires with no additional release agents, eliminating the need to clean the vulcanised tires. Since the spraying process for tire blanks is no longer necessary, no contamination can occur – neither in critical tire areas nor at the workplace.

### RFID technology now for bladders as well

Rhein Chemie is introducing RFID technology for bladders to improve traceability at its production sites. This involves fitting bladders with RFID tags containing information such as model name, production batch and date of manufacture. This helps to avert errors in allocating the bladders later in the process and makes them easier for customers to identify.

It is also possible to make the information stored on the RFID chip available to the tire manufacturer. If a bladder is replaced in the tire press, the relevant information for the new bladder can be read using an RFID reader and linked to the curing press. This prevents mistakes such as failure to reset the cycle counter. It also makes it possible to track which tire has been cured with which bladder – information that is still not always available at present.



### Nitrogen-free accelerators and reinforcement options for tires

Dithiophosphates – including Rhenogran TP-50 and Rhenogran SDT-50 – are nitrogen-free accelerators that can replace conventional sulfenamide, thiuram and carbamate accelerators. Their advantage is that they mainly form monosulfide and disulfide cross-links, which are more thermally stable and less susceptible to reversion. In addition, their excellent solubility enables them to be used in all common types of rubber. Rhein Chemie offers dithiophosphates not only as masterbatches under the Rhenogran brand, but also as liquid and dry liquid under the Rhenocure brand.

Rhein Chemie offers an outstanding solution for tires exposed to high mechanical and thermal loads in the form of the Rhenogran P91-40 series. This involves highly reinforced aramid-fiber masterbatches that can be incorporated evenly into the rubber compound. Rhenogran P91-40 is suitable for use not only in typical tire polymers such as NR, IR, BR and SBR, but also for many other types of rubber such as EPDM, CR and NBR.

The Rhein Chemie business unit supplies the rubber industry with a broad portfolio of pre-dispersed polymer-bound additives, processing promoters, vulcanisation and filler activators, light protection waxes, release agents, tire marking paints and high-performance curing bladders.

### Antioxidants and antiozonants from LANXESS for extended lifespans

Among the key products that LANXESS presented at the Tire Technology Expo were antioxidants, as rubber, a truly versatile material, must be individually protected against aging based on its respective use. The Advanced Industrial Intermediates business unit also offers the rubber industry an extensive range of antioxidants and antiozonants that can be metered and processed easily, safely and with very little dust. These can be combined with one another to further improve the distinct effective range of each particular additive.

Every antioxidant and antiozonant features a typical effective range in terms of the various types of aging. Depending on chemical structure, they counteract one or more of the degradation processes. With its Vulkanox, Vulkacit, Vulkazon and Renacit brands, LANXESS is one of the few manufacturers to offer the right additives for all stages of rubber production from a single source.

### Preventing material deterioration

Aging processes, most of which are triggered by the effects of oxygen, ozone and heat, alter the properties of vulcanised rubber and can result in its partial or complete deterioration over time. The Vulkanox antioxidants and Vulkazon antiozonants from LANXESS extend the lifespans of elastomers by significant margins. This helps tires to maintain their characteristics and remain in service for longer.

In addition to antidegradants, the company offers vulcanisation accelerators from the Vulkacit series. The sulfenamides and thiazoles are among the most significant accelerators in the rubber industry by far. They affect both the speed of the cross-linking reaction and the physical properties of the vulcanised products.

## Kordsa to expand its global footprint in aerospace industry with new US\$181 million investment

● Kordsa expanded its reinforcement areas and competencies with the acquisition of Fabric Development, Textile Products and Advanced Honeycomb Technologies that supply advanced composite materials for the aerospace industry. In its continuous effort to support its organic growth with inorganic growth opportunities, the reinforcement leader has signed a definitive agreement to acquire approximately 96% share of US-based Axiom Materials that has total enterprise value of USD 181 million. Axiom Materials provides advanced composites for aerospace and industrial applications, while reshaping the composite industry with its R&D activities.

Kordsa Chairman, Cenk Alper said in relation to the investment: "We continue our growth moves in the composite technologies that we entered with our first investment in 2013. We realized Composite



Kordsa Chairman,  
Cenk Alper



Kordsa CEO, Ali Çalışkan

Technologies Center of Excellence investment in 2016. As part of our inorganic growth targets, following the acquisition of three composite firms in 2018, we have taken the necessary steps to acquire yet another composite company based in the US. In order to leave behind long approval processes in aircraft parts and space vehicles, we set out to acquire Axiom Materials, an approved supplier for aerospace industry. With this acquisition, we will lead the advanced composite technologies for the next generation industrial and transportation applications, as well as the aerospace industry.

Kordsa CEO Ali Çalışkan stated the

three aircraft tires and one out of every three automobile tires with our tire reinforcement technologies, thanks to our recent investments in composites, now we also reinforce the interiors, fuselages, wings and engines of these aircraft. As another solid step to build a second Kordsa, we have signed a definitive agreement to acquire the US-based Axiom Materials, which will give us an opportunity to lead the advanced composites industry for aerospace. Thus, we will keep and fulfill our promise "Inspired from life, we reinforce life," with broader and deeper competencies in a wider geography."

following about the investment: "As Kordsa, we touch and reinforce every corner of life. We take firm steps toward our goal to build a second Kordsa, and with each passing day, we expand our competencies. While reinforcing two out of every

## Evonik on track with tire silica expansion in Turkey

● Evonik Industries AG is "fully on track" to expand its tire silica production capacity in Adapazari, Turkey, by 40 kilotonnes (ktpa) per year by late 2019. Launched in response to "growing demand for innovative silica", the expansion project will primarily serve customers in south Eastern Europe and the Middle East.

"Our strategic capacity expansion... improves the supply security and local availability of tire silica and speciality products," said Andreas Fischer, head of the silica business line at Evonik. The company is adapting its product range on site to shorten transport routes and to increase availability and supply security, explained Hark-Oluf Asbahr, head of marketing for tire and rubber materials. Among other products, Evonik will produce Ultrasil 9100 GR precipitated silica reinforcing filler



Andreas Fischer, head of the silica business line at Evonik



Hark-Oluf Asbahr: Marketing head

and Ultrasil 5000 GR, for optimising wet and winter properties of tires, at the Turkish site. Evonik's new plant in Sao Paulo, Brazil has already reached full capacity due to high regional demand. In Charleston, South Carolina, where the company started up a new tire silica production plant last October, production has reached a commercial level. "The new silica production in the American 'tire belt' was received very well by regional customers," Fischer added. Evonik produces Ultrasil 7800 GR for energy-saving SUV tires at the Sao Paulo and Charleston sites as well as in Chester, Pennsylvania. There is "large demand" for this product since its launch last year, the company stated.

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## LANXESS achieves strong sales in 2018 up 10.2% to Euro 7.197 billion and makes a solid start to the new fiscal year

● Global Chemicals LANXESS closed its fiscal year with a strong result. In 2018, EBITDA pre exceptionals increased by 9.8 percent to EUR 1.016 billion. As forecast, earnings are at the upper end of the range of 5 to 10 percent above the previous year's figure of EUR 925 million (without ARLANXEO).

Despite rising economic headwind, we delivered on our promises. We made very good progress strategically and operationally: LANXESS now has a very clear focus on specialty chemicals. Today, we are more profitable, more stable and more competitive than ever – and that is paying off," said Matthias Zachert, Chairman of the Board of Management of LANXESS AG.

The good operating result was driven in particular by the operating strength of the Advanced Intermediates, Specialty Additives and Engineering Materials segments as well as the integration of Chemtura and the phosphorus additives business acquired from Solvay. The EBITDA margin pre exceptionals came in at 14.1 percent.

LANXESS group sales rose by 10.2 percent from EUR 6.53 billion in the previous year to EUR 7.197 billion. At EUR 431 million, net income was considerably higher than the previous year's figure of EUR 87 million. This was due to the year-on-year improvement in the operating result as well as effects from the sale of the 50 percent stake in ARLANXEO. Moreover, the previous year's net income was reduced by one-off expenses.

### Dividend to increase again

The successful fiscal year 2018 is also expected to pay off for LANXESS shareholders. The Board of Management and Supervisory Board will propose a dividend of EUR 0.90 per share to the Annual Stockholders' Meeting on May 23, 2019. This would be 12.5% more than in the previous year.

## Strategic milestone in 2018: sale of the rubber business completed

When fiscal year 2018 came to a close, LANXESS achieved another milestone in its realignment. On December 31, the specialty chemicals company completed the sale of its remaining 50% interest in the rubber company ARLANXEO to its former joint venture partner Saudi Aramco. The two companies had founded the joint venture on April 1, 2016. LANXESS received proceeds of around Euro 1.4 billion for its share, of which it has already used Euro 200 million to further finance its pension liabilities. Another up to Euro 200 million is designated for a share buy-back, which is to be completed by the end of the current fiscal year.

"We have used the proceeds from the sale of our interest in ARLANXEO to further strengthen our balance sheet. In addition, we have gained additional scope for driving our growth forward both organically and through acquisitions," said Michael Pontzen, Chief Financial Officer of LANXESS AG.

### Strong performance in almost every segment

The Advanced Intermediates segment performed strongly in fiscal year 2018 with sales up 11.7% to EUR 2.207 billion, slightly below the 17.0 percent recorded in the previous year.

The Specialty Additives segment, sales and the operating result both increased significantly as a result of the successful integration of the Chemtura and Solvay businesses. Sales amounted to EUR 1.98 billion, up 22.9 percent on the previous year's figure of Euro 1.611 billion.

In the Performance Chemicals segment, sales and the operating result fell short of the strong previous year due in particular to weak development in the leather and construction industries. Sales fell by 6.3% from EUR 1.439 billion to EUR 1.349 billion.

The Engineering Materials segment considerably increased both sales and the operating result on the basis of the profitable business with plastics for lightweight construction. The urethanes business that was taken over as part of the Chemtura



Matthias Zachert, Chairman, Board of Management of LANXESS AG

acquisition also made a positive contribution to the result. Sales rose by 15.4 percent from EUR 1.366 billion to EUR 1.576 billion.

Compared with the previous year, the results of all segments were affected by negative exchange rate effects, particularly from a weaker U.S. dollar.

### Outlook for 2019: on track despite weakening economy

LANXESS has made a solid start to the new year despite the weakening economy. LANXESS expects EBITDA pre exceptionals for the full year 2019 to be around prior-year level.

LANXESS will specify the earnings forecast for the full year 2019 when it presents its quarterly results on May 14, 2019.

## Cancarb investing Euro 35 million to expand capacity

● Cancarb Ltd is investing \$40.1 million (Euro35 million) to expand thermal carbon black production capacity at its Medicine Hat production plant. The Canadian subsidiary of Tokai Carbon Co. Ltd is planning to add a sixth production unit at the site, to raise capacity by 9 kilotonnes per annum (ktpa). The company is currently completing the final engineering and tendering process, said VP for quality and development Ross Buchholz. Construction work is tentatively set to start in April with completion planned for the summer 2020.

The company purchased the warehouse adjacent to the plant earlier in 2018 with the intent to refurbish it for this project, Buchholz said. The \$40.1 million cost includes the warehouse and



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## Kraton studying sale of medical elastomers business

● Kraton Corp. has initiated a strategic review into its Cariflex business which might result in the sale of the unit, the company announced 19 Feb. The Cariflex business produces polyisoprenes for healthcare applications, including surgical gloves and various medical devices. Products are claimed to be "superior" alternatives to natural rubber as they are free of naturally-occurring proteins.

"We believe that the high-margin Cariflex business and its attractive growth prospects are not appropriately valued as part of Kraton," said Kevin Fogarty, Kraton's president and CEO.

Selling off the business would enable Kraton to focus more on its core business segments. "Cariflex for the most part is a standalone business at Kraton, with minimal revenue or cost overlap with our polymer and chemical segments," Fogarty added. The company would use most of the proceeds from any full or partial 'monetisation' of Cariflex to reduce debt. Kraton, however, underscored that the strategic review might not result



Kevin Fogarty, Kraton's President and CEO

land purchase.

Cancarb produces and markets thermal carbon black in more than 40 countries. The company's facility currently has five thermal carbon black units with a total capacity of 45ktpa. The sixth unit will produce Cancarb's signature grades of its Thermax-brand medium thermal carbon black.

### Carbon black maker Longxing reports 166% 2018 profit jump

● Chinese carbon black maker Longxing Chemical has seen its net profit increase 166% year on year to Euro17 million (133 million yuan) in 2018. Revenue last year rose 14% to Euro 403 million, 93% of which was from carbon black and 4% from white carbon black., the company announced 15 Feb. The average carbon black price in 2018 climbed 22% compared with a year ago, according to Longxing's annual report. The company's net profit excluding non-recurring items during the period increased by 116% to Euro14 million.

Last year Longxing produced 450

kilotonnes of carbon black and sold 440 kilotonnes, said the annual report. It claims to be among the top 3 carbon black maker in the China, which has an overall production of around 7.5 million tonnes. Over the past two years China's annual carbon black capacity expanded by 1.2 million tonnes, outgrowing total demand, said the annual report. Carbon black prices continued to rise, as a number of plants in Hebei, Shandong and Shanxi provinces suspended production due to tightened environmental regulations last year, the company's board secretary Liu Feizhou stated

"Longxing is among the sector's best in waste treatment facilities and our production hasn't been impacted," said Liu. According to Liu, some of the competitors have resumed production and carbon black price has been falling back so far this year.

### Mesnac and Hainan Rubber form strategic partnership

● Chinese machinery maker Mesnac and natural rubber supplier Hainan

Rubber have entered a three-year strategic partnership. They will join forces in R&D of rubber materials and products as well as smart manufacturing, according to a Mesnac statement. The Companies also plan to set up an industrial fund to invest in "related areas," Mesnac added.

Under the partnership, Mesnac and Hainan Rubber will establish a national laboratory for natural and synthetic rubber and cooperate on the development of air springs. Target applications include shock-absorbing mounts for high-speed rail, tire tread materials and products for 'new-energy' sectors. They further aim to help "formulate new industry standards on EVEC rubber," the statement added. Developed by Mesnac company Eve Rubber, EVEC is manufactured through liquid mixing and is claimed to improve tire performance in terms of wet grip, wear and rolling resistance. They will also jointly develop smart technologies for rubber-harvesting and processing as well as safer, more automated rubber machinery and IoT-based plants. The partners will leverage "preferential policies" in the Hainan Free Trade Zone, and help upgrade Chinese industry.

### Lehmann&Voss&Co. now distributes Wollastonite for Wolkem India Ltd

● With the Acquisition of the business operations of the Osthoff Omega Group, Norderstedt, Germany with effect from 1 January 2019, Lehmann&Voss&Co. has also acquired the distribution rights for wollastonite for Wolkem India Ltd. (India). The exclusive distribution partnership comprises the product groups KEMOLIT and FILLEX in Germany, Austria, Switzerland, the Czech Republic and Turkey.

Wolkem India Ltd. is one of the world's largest manufacturers of fiber-reinforcing wollastonite.

Wollastonite manufactured by Wolkem India Ltd. has been well established in many technical applications. Whether in the plastics sector (e.g. thermosets, engineering thermoplastics), for friction sector

(e.g. brake pads) or in surface technology for powder- or anti-corrosion coatings, wollastonite has been used as a functional reinforcing filler for many years.

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### Top Glove positive on rubber glove's demand for 2019 fiscal year

● The world's largest manufacturer of rubber gloves, Top Glove Corp Bhd., recently discussed outlook for the 2019 financial year.

For the first quarter of the year, the Malaysian company expects a "muted" quarter on given seasonality in the second quarter and timing differences between average selling price (ASP) revision and costs. Top Glove cited the strengthening ringgit, higher minimum wage starting in January 2019, as well as the 4 to 6% hike in NR prices as compared to the last quarter of 2018 as factors causing the more tepid results.

Regarding Ebitda margins, the company expects a fall from 16% from the previous quarter to 15% in the first quarter of 2019. Nevertheless, earnings growth is still seen on a year-on-year (y-o-y) basis, due to the company being positive on the global demand growth for rubber gloves in the financial year 2019.

In terms of volume growth, Top Glove expects a rise of 15% year-on-year- in line with the global demand growth.

Regarding Aspion Sdn Bhd., which Top Glove acquired last year, that company is expected to turn profitable in the second quarter of 2019, following a loss of RM4 million (\$985,000). The management expects the second half of the financial year 2019 to see improvements. Aspion's plant in Kulim is said to be running well, but much work needs to be done at the Kota Baru and Kluang plants. In terms of capacity utilisation, Aspion is at about 50 to 60% and product mix is 70:30, in terms of examination to surgical gloves.

According to Top Glove, prospects for the surgical glove segment remain positive and Aspion will benefit from the recent unrest at, WRP Asia Pacific Sdn Bhd., which faced foreign worker and shareholder issues. WRP is Aspion's competitor for the poly isoprene surgical glove segment. Poly isoprene surgical gloves are premium



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products, priced at about 60 to 70 US cents per piece, as compared to natural rubber surgical gloves at about 12-20 US cents per piece. Aspion also manufactures X-ray gloves in small volumes and posted about RM1 million profit after tax per year.

Of the RM400 million (\$98.6 million) the company has designated for capital expenditure in 2019, about RM160 million is assigned for new capacity, with the remainder earmarked for existing facilities. Top Glove is in the process of testing vision inspection machines at some of their newer factories, in order to expedite the quality control process. Plans are underway to set up a vision inspection machine at each of the company's 600-plus production lines, which should reduce about 600 foreign workers per shift. Top Glove has a total workforce of about 17,000 employees, of which 13,000 are foreign workers.

Top Glove's condom manufacturing facility with a capacity of 100 million pieces per year has commenced production and is awaiting ISO certification. The company says it will not participate in the tender market as they do not yet meet the three-year pre-qualification by tender market players. The initial batches will be sold only under the original equipment manufacturer (OEM) market segment.

The company downwardly revised its forecast for FY19-21 by -6.3%, -5.3% and -4.6% respectively for the three years to 2021.

### Nynas develops bio-based oil for tire industry

● Swedish petroleum products company Nynas launched its first bio-based tire and rubber process oil during the Tire Technology Expo (TEE), in Hanover, early March. NyteX Bio 6200 has been to help companies reach their sustainability goals and meets the performance standards of all Nynas tire and rubber oils, the company said in a 6 March release.

According to Kamyar Alavi, senior technical advisor, the new oil not only matches the requirements for tire tread formulations, but also "surpasses them" in some cases. Nynas has

### Smithers expands testing site in China

● Smithers Rapra is building on its presence in China with a new product testing facility, opened in the same site as its tire and wheel testing lab in Suzhou.

The new 4,000-sq.-ft. facility is part of the company's effort to grow and evolve with its clients in the changing local automotive market, said Derek Read, vice president, global development, Asia region.

The laboratory provides for air leak and burst, cleanliness, material properties, salt spray, and pressure, vibration and temperature testing, Smithers said. It will work alongside the company's existing product testing labs in Akron; Lansing, Mich.; and Shawbury, England, for validation testing for original equipment manufacturer fluid transfer systems.

It can test products such as brake lines and coolant hoses to international and OEM standards as well as custom benchmarking programs to support research and development. The lab, which employs 23 split about 70-30 across tire testing and product testing, is ISO 17025-certified.

The product testing laboratory will share resources with the wheel and tire testing laboratory, including several senior engineers and some equipment, Read said.



**Kamyar Alavi** : Senior Technical advisor, Nynas

developed the product in response to growing demand for non-mineral oil-based products.

### Trinseo presents new Synthetic Rubber Solution at Tire Technology Expo

● Trinseo, a global materials solutions provider and manufacturer of plastics, latex binders, and synthetic rubber, presented a new grade of multifunctionalised S-SBR, SPRINTANTM 918S, at the Tire Technology Expo from March 5-7 in Hanover, Germany.

In recent years, Trinseo has frequently added new grades to its range of Solution Styrene Butadiene Rubber (S-SBR) products. The company's new multifunctionalised S-SBR achieves an optimum balance of low rolling resistance, high grip, and a good mechanical property profile.

The new oil extended grade, SPRINTANTM 918S, was developed by Trinseo to address the increasing challenges, such as physical stability, safety, high fuel efficiency at the same time with easy processability



**Samer Al Jabi**, Trinseo's global business director, Synthetic Rubber



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## Cure Pro next innovation in Eastman Crystex line

● Eastman's Cure Pro product builds on prior Crystex products, including Crystex HS and Crystex HD, yielding an even more dispersible, thermally stable product than has been offered in the past, Fred Ignatz-Hoover, an Eastman technology fellow, said during a recent interview.

"For this customer, this means improved handling, ease of material transfer, ease of weighing and less headaches in manufacturing products," he said.

### Decades of history

This year marks the 75th anniversary of the Crystex line of insoluble sulfur. The importance of insoluble sulfur in the rubber industry was first recognized in 1932 by a Goodyear chemist named Herbert Endres, according to Ignatz-Hoover.

Endres patented a blend of soluble sulfur with insoluble sulfur to prevent bloom during mixing. In that time period Stauffer Chemical Co. bought National Sulfur, he said, and the use of insoluble sulfur started to take off because of its beneficial features.

"The insoluble sulfur allows tire companies and rubber manufacturers to compound materials to higher loadings of sulfur and have an opportunity to manufacture without the interference of bloom," Ignatz-Hoover said. "The goals of the



Ajit Joshi (left) and Fred Ignatz-Hoover were on hand at the recent International Elastomer Conference to discuss Eastman Chemical's Crystex Cure Pro insoluble sulfur additive

product for 80-plus years now have been to improve the thermal stability and the dispersibility of insoluble sulfur."

The Crystex brand itself has been through a number of ownership changes over the years. Ignatz-Hoover—who has been with Eastman and predecessor companies Monsanto, Flexsys and Solutia since 1986—said he believes it was Stauffer Chemical that first trademarked the brand.

And as tire manufacturing has evolved over the years, so have the Crystex offerings. In 1975, the high stability Crystex HS was introduced, followed by Crystex HD, a high dispersion version, in 1998.

for the tread of Ultra High Performance tires. These type of tires see an increasing demand triggered by the growth of SUVs and light trucks market. SPRINTANTM 918S is an easy-to-process, multifunctionalized S-SBR grade which substantially improves fuel efficiency and has excellent mechanical properties while sustaining good wet grip.

"Standing at the forefront of innovation for the tire industry, our newly launched product is making an important contribution to the current challenge in the industry to balance processability and increased performance," said Samer Al Jabi, Trinseo's global business director, Synthetic Rubber."

In addition to the launch of Trinseo's latest innovative material solutions, the Company demonstrated its expertise in this field with two presentations:

Thomas Stratton, Trinseo's compound and tire application leader, Synthetic Rubber, provided insights into "Cross-currents in tire industry trends: how must polymers evolve?" He spoke about how and why polymer manufacturers must

develop a strategy in a world where sustainability sits side by side with changing transport demand. He also shared how Trinseo is tackling these trends and challenges.

Trinseo's Dr. Sven Thiele, R&D leader, Process and Product Development Anionic, presented "Easy-to-process multifunctionalized S-SBR." This presentation highlighted how Trinseo's newly-developed polymer enables low compound viscosities, smooth synthetic rubber sheet surface appearance and good extrusion characteristics at excellent rolling resistance and wet grip balance.

## Trelleborg assumes full ownership of Mexican joint venture

● Trelleborg A.B.'s announced in February that its Industrial Solutions business has acquired the remaining 49% of shares of its joint venture in Tijuana, Baja California, Mexico, from its JV partner Max Seal. The financial terms of the deal were not made public.

The joint venture is a manufacturing facility which makes

watertight seals for a variety of plastic and double corrugated wall pipe systems for water and wastewater. The Swedish industrial group purchased 51% of the Max Seal business in 2014, and since then the two companies have been developing and manufacturing polymer-based sealing systems together.

Magnus Andersson, Industrial Solutions business unit president at Trelleborg, said the take-over will help the Swedish company serve its regional customers better and drive greater efficiencies. The JV had been fully consolidated financially prior to Trelleborg's purchase of the business and its 130 employees will become a part of Trelleborg Seals and Profiles Americas also operates manufacturing facilities in New Hampshire and Missouri in the U.S. and in Queretaro, Mexico.

In addition to the sealing systems produced by the Seals and Profiles Americas business, Trelleborg Industrial Solutions produces industrial hose, oil and marine components, industrial anti-vibration systems and polymer boots.



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# ARLANXEO

## At Tire Technology Expo 2019: Enabler of high-performance tire solutions



**A**RLANXEO, a global leader in performance elastomers, highlighted its latest achievements and developments in new eMobility oriented technologies from March 5 - 7 at the Tire Technology Expo 2019 in Hannover, Germany.

ARLANXEO's products are marketed under two brands in the Business Unit Tire & Specialty Rubbers: X-Butyl®, which stands for premium butyl rubber products, and Buna®, which stands for a multilateral range of modern butadiene rubber products.

In the tire sector, ARLANXEO's high-tech rubber offers exceptional dynamic properties, strong impermeability, excellent resilience and grip, reduced rolling resistance, and high durability to ensure tire performance while decreasing fuel consumption and CO2 emissions.

Frank Lueckgen, Global Marketing Tires Director, BU Tire & Specialty Rubbers: "The stricter regulations of CO2 emissions implemented worldwide, the increasing number of electric cars and the scope of autonomous driving represent a significant challenge for all car manufacturers, undeniably. Tires have a major impact on all of those new developments and needs. We, at ARLANXEO, as a leading rubber manufacturer support the tire manufacturers to master these challenges successfully."

ARLANXEO Tire & Specialty Rubbers (TSR) Business Unit offers solutions for the markets of today and tomorrow. As

consumers' needs increase, ARLANXEO supports the development of performance tires that encompass comfort, safety concurrently with economic and environmental sustainability. eMobility, sustainability, urbanisation and digitisation are key drivers of ARLANXEO R&D and product application."

"In our TSR Business Unit, we work intensively to develop new synthetic rubber types, especially BRs and SSBRs, and functionalisation technologies to deliver state-of-the-art materials to our customers," explains Frank Lueckgen.

Furthermore, the evolution and increasing needs of eMobility, require cooperation between the customer and the raw material manufacturers; therefore, ARLANXEO BU TSR has established interfaces with its customers to design, test and produce synthetic rubber grades that meet their needs within the context of Industry 4.0.



**Frank Lueckgen: Global Marketing Tires Director**

During the Tire Technology Expo 2019, ARLANXEO TSR Business Unit showcased a Speedway tire (powered by an ARLANXEO solution SBR) and Buna Nd 24 EZ (modified and long chain branched, neodymium butadiene rubber).

ARLANXEO experts also gave two presentations at the conference, highlighting advancements in the tire material science sector.

David Hardy, Technical service and development manager at ARLANXEO gave a presentation titled: "NdBR tailored for maximum performance and easy processing".

As he noted: "Our R&D efforts are focused on improving the dynamic performance of our customer's compounds in order to reduce rolling resistance without sacrificing the safety aspects of the tire. However, as the compounds become more elastic for improved rolling resistance performance, processing during tire production can become more challenging. Hence we also continue our efforts to develop new rubbers that can improve processing whilst maintaining the gains made in dynamic performance".

Dr. Saeid Kheirandish, Project manager, polymer testing at ARLANXEO, gave a presentation titled: "The physics of tire



David Hardy (L) Dr. Saeid Kheirandish,(R)

compound processing: considerations for the 21st century".

As he remarked: "At ARLANXEO, we focus more deeply on topics related to the rheology of new materials and the way these new systems (rubber + filler + additives) can be processed for tire applications. We are developing relevant testing methods and physical models that more accurately describe the viscoelastic behaviour of rubber compounds and consequently, predict compound behaviour in real-life applications such as extrusion and mixing; thus, we will be optimising processing operations both for ARLANXEO and our customers and decreasing considerably their costs".

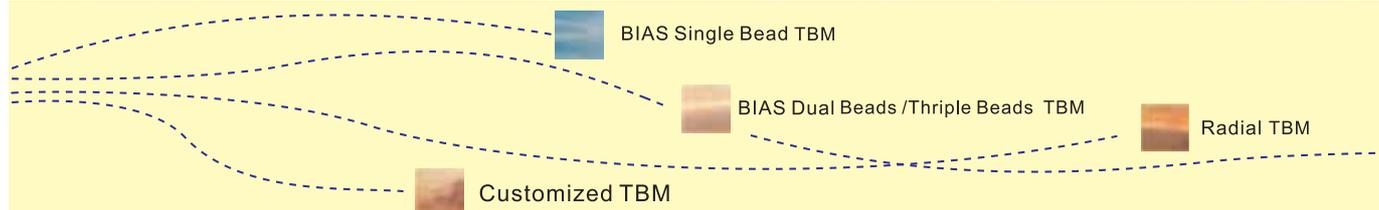
### About ARLANXEO

ARLANXEO is a world-leading synthetic rubber company with sales of around EUR 3.2 billion in 2017, about 3,900 employees and a presence at 20 production sites in nine countries. The company's core business is the development, manufacturing and marketing of high-performance rubber for use in, for example, the automotive and tire industries, the construction industry, and the oil and gas industries. ARLANXEO was established in April 2016 as a joint venture of LANXESS and Saudi Aramco. On January 1st, 2019, Saudi Aramco, a leading producer of energy and chemicals, became the sole owner of ARLANXEO.



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# Tire Technology Expo 2019

**Tire Technology Expo beats all expectations!**

**T**ire Technology Expo and Conference continues to set records with each passing year, with the 2019 event welcoming more exhibitors, delegates, speakers and attendees than ever before. Leading experts in tire design, development and manufacturing headed at this expo to discuss the topics and themes dominating the industry. With 319 exhibitors spread across three halls, and some 550 conference and workshop delegates enjoying presentations from 180 speakers across 12 separate streams, the 2019 Expo and Conference welcomed more than 5,600 visitors during the three days, cementing the expo's place as the must-attend event for those working in the tire industry.

The world's largest gathering of tire design, development and manufacturing experts was officially opened by Expo founder Tony Robinson, the chairman and CEO of UKI Media & Events, which organises the event. A packed conference schedule welcomed speakers from across the tire industry, and covered an expansive range of topics pertinent to those working in the business. Across the three days, leading experts discussed everything from the role of the tire in future transport solutions, tire testing, material advances and improving manufacturing, to rubber compounding, modelling techniques, sustainability developments, tire recycling, polymer science, business models and advances in pneumatic tire performance.

On the exhibition floor, product announcements included HF's HF ONE, the latest tire building machine and new machine design concept and HF also launched a new truck tire press HF Curemaster at this year's event. Cassioli's new automated handling systems, Albeniz's AST 4.0 labelling technology, and Zeppelin's cloud-based mixing platform. For these companies, Tire Expo's expert visitor base made the event the perfect place to introduce new technologies and innovations to an audience able to see the full potential of the latest advances. Tire Technology Expo also showcased its ability to connect leading players across the industry, with Uzer Makina revealing details of collaborative projects with partners such as Fineline and Romill – more on these advances in the March 2019 issue of Tire Technology International magazine.

At the end of Day 2, attendees enjoyed the presentation of the 2019 Tire Technology International Awards for Innovation and Excellence at a spectacular gala dinner. Winners included Michelin (Tire Manufacturer of the Year) and Bridgestone, which took home the Environmental Achievement award for its development of High-Strength Rubber. SRI claimed the Tire Technology of the Year trophy for Sensing Core, HF Group picked up the Tire Manufacturing Innovation of the Year for One TBM, and Test World was awarded Supplier of the Year. Furthermore, the gala dinner saw Chidambaram Subramanian presented with the Young Scientist Award, and Rudi Hein honoured with the Lifetime Achievement Award.

"We had high hopes that this would be a really excellent show and I think my team can be proud that they delivered a really strong and successful exhibition at every level," concluded Tony Robinson. "The number of attendees actually nudged into 5,600, just beating last year's record and feedback from exhibitors was universally enthusiastic. With more than 90% of the space for next year already taken, we look forward to delivering a really special 20th Anniversary Show in 2020."

## HF Tiretech Group

The Tire Technology Expo was again "place to be" for the tire industry and decision makers. The industry took the opportunity to exchange knowledge, experiences and information.

At Tire Technology Expo 2018 HF launched the HF ONE, the latest tire building machine and new machine design concept. The launch was a big success,

high interest in the market was achieved and found this year the recognition of the jury in winning the innovation award. This recognition provides the HF team to continue with the R&D ambitions in the future and reassures that the HF ONE machine concept is facing the future demands of the market.

This year at Tire Technology Expo, HF launched a new truck tire press. The HF Curemaster is the new benchmark for truck tire manufacturing.

HF introduced the HF Curemaster impressively with a new video and a 3D print of the machine to customers and the trade press. This was the first official presentation of this new machine concept and the first machines are already sold in the market.

For more information on the HF Curemaster please visit: <https://www.hf-tiretechgroup.com/hf-curemaster/index.html>

For more information on the HF ONE, please visit: <https://www.hf-tiretechgroup.com/hf-one/index.html>



## Schill+Seilacher



Schill+Seilacher has been participating at Tire Technology Expo & Conference Show every year since the early 2000's.

In the beginning, priority was clearly on machinery, but over the years the share of raw material related exhibitors got bigger and bigger. Nowadays the TTE is – after the DKT/IRC – the most important rubber expo and conference in Europe according to the Schill+Seilacher Group.



All 3 days of the expo, the company had countless good discussions with visitors. The major tire manufacturers have shown up but more and more also engineering companies visited which needs our support to run their process equipment as smoothly and efficiently as possible. A clear focus is on new additives in combination with latest generation functionalized polymers to achieve the much desired combination of excellent processing and superior properties said Guid Robbe, Head of Sales of Schill+Seilacher.

## Zeppelin

Zeppelin Systems GmbH had a successful show at the Tire Technology Expo 2019. They presented a new Zeppelin PreMix Technology for a revolutionary concept of additive feeding in the mixing room, reducing complexity in chemical handling for a more consistent and reliable inline feeding process.

They were glad to show their customers the benefit of the new technology at the TTE 2019 at their very well displayed stand.



Steve Renegar(Pyrolyx), Guido Veit (Zeppelin Systems GmbH), Pieter ter Haar (Pyrolyx)



Impression of the Zeppelin Systems GmbH – Booth 9000



Middle: Frank Speck (Zeppelin Systems) together with a customer and on the right hand side Steve Renegar (Pyrolyx)

## IRJ Stand at Tire Technology Expo 2019



### EVENTS & EXHIBITIONS

## Latin Tyre Expo Announces Speakers for the 2019 Conference



**O**rganizers of the Latin Tyre Expo have announced the speakers for the educational conferences June 27, 2019, in the Atlapa Convention Center in Panama, Rep. of Panama.

The Latin Tyre Expo is the leading annual tire exhibition in Latin America and the Caribbean, connecting hundreds of tire manufacturers each year with thousands of tire distributors.

► Heriberto Romero, Director Hules Banda SA de CV How to Activate the Retreading Market

► Jean Barros, Commercial Manager Mexico & Central America Vival SA de CV Retreading in Latin America

► Kevin Rohlwing, Senior Vice President of Training Tire Industry Association (TIA) Tire Repair Safety

► David Shaw, CEO Tire Industry Research China's tire industry and the State of the global tire industry and outlook

► David E Zielasko, Publisher and Editorial Director Rubber & Plastics News, Tire Business, European Rubber Journal Disruption in the Tire Industry

► Milton Alberto Lopez Tang, VP of Sales, Maxam Tire Latam, LLC.

► Tim Good, Radial OTR Sales Manager, Maxam Tire NAOTR Tires

► Jan Svoboda, Director of RFID Business Development FineLine Technologies The Use of RFID within the Tire Industry

To register for the Latin Tyre Expo June 26-28, 2019 and for more information on becoming an exhibitor or visitor, please visit: [www.latintyreexpo.com](http://www.latintyreexpo.com) or contact [linda@latintyreexpo.com](mailto:linda@latintyreexpo.com) +1-786-293-5186.





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# Tire Technology International Awards for Innovation and Excellence Winners 2019

**tire**  
TECHNOLOGY  
INTERNATIONAL 2019  
**AWARDS**  
FOR INNOVATION AND EXCELLENCE

**T**he winners of this year's **Tire Technology International Awards for Innovation and Excellence** were announced at a ceremony during Tire Technology Expo 2019 at the Deutsche Messe, Hannover, Germany.

The 2019 **Tire Manufacturing Innovation of the Year**

**Tire Manufacturing Innovation of the Year – HF Group – TBM One**  
**Environmental Achievement of the Year – Bridgestone – HSR**  
**Tire Technology of the Year – SRI – Sensing Core**  
**Tire Industry Supplier of the Year – Test World (Millbrook)**  
**Tire Manufacturer of the Year – Michelin**  
**Young Scientist Prize – Chidambaram Subramanian**  
**Lifetime Achievement Award – Rudi Hein**

award went to HF Group for the TBM One, the company's multiple-types tire building machine (TBM). It is the only TBM in the market that provides the flexibility to produce tires with inflated or flat turn-up, as well as standard tire designs such as SOT/TOS, wide BP turn-up and ply up/down constructions. In

addition, changing between the carcass drums takes only 20 minutes, which is comparable to a normal code change.

"HF Group has systematically improved the quality and flexibility of their TBMs," says judge Romain Hansen, director of global tire performance science, Goodyear. "The newest generation responds very well to a trend in the tire industry of lower batch sizes and increasing numbers of stock-keeping units. It helps to manage the increasing complexity in the industry."

The recipient of the **Environmental Achievement of the Year** award was Bridgestone for its newly developed HSR (High-Strength Rubber) polymer, the world's first polymer to bond rubber and resins at a molecular level. It has a crack resistance five times higher than natural

rubber, as well as higher tensile strength and abrasion resistance. It could potentially lead to a 50% reduction in the amount of material used in a tire (less tread depth, less polymer needed in production) and could reduce rolling resistance without affecting durability. Applications include future EV tire



Sebastian Rabold – Executive Vice President, Tire Building Machine, HF Group, Tire Manufacturing Innovation



Pierre Robert, Vice President Research and Development (Michelin Group), Tire Manufacturer Award Winners



development and a number of potential uses outside of the tire industry.

The **Tire Technology of the Year** was awarded to SRI for its Sensing Core development. This cutting-edge technology can detect road conditions, tire load and other information without the use of direct sensors. Unlike camera or radar sensors, Sensing Core can calculate and detect friction, which is useful when confronted with hazards such as black ice and hydroplaning risk. A number of vehicle OEMs are showing interest in widespread application of the technology, and it could be integral to future autonomous vehicle functionality.

This year's **Tire Manufacturer of the Year** was awarded to Michelin for, among many things, the company's environmental initiatives over the past 12 months. Michelin is one of the few tire OEs to commit to 2048 sustainability targets, and its many product innovations include RF-free resin, for which the company spent nine years and 35 patents researching and developing replacement chemicals. "Michelin has been driving the market with innovations and sustainability concepts for years," says judge Klaus Baltruschat, tire expert for TÜV Süd. "Their environmental initiatives such as micronised rubber powder and clever tread pattern design, which still delivers good performance even when close to being worn out, are just a few examples that can be cited here."

This year's **Young Scientist Prize** was awarded to Chidambaram Subramanian, a graduate research assistant at the Centre for Tire Research, Virginia Tech, USA for his research paper on road surface classification using intelligent tires.

Mark Fenner, conference director for Tire Technology Expo said, 'Chidambaram's work on intelligent tires, vehicle dynamics and race vehicle simulations could potentially increase the safety of autonomous vehicles and promote the future growth of AV technology.'

The final award of the evening was the **Lifetime Achievement Award**, which was presented to Rudi Hein. This prestigious honour was awarded in recognition of his incredible 32-year career in special project teams at BMW, in particular his work on runflat tire systems, and the decade spent with Bridgestone as executive advisor standards and regulations. Recently retired, he has worked on wheel and tire concepts and design for his whole career, and was made an honorary chairman of the German Association of the Automotive Industry in 2014.

The **Tire Technology International Awards for Innovation and Excellence** are recognised as the industry's top accolades, and aim to celebrate the very best new technologies and innovations from all over the world. The awards are judged by a fully independent, international panel of 31 judges and take place during **Tire Technology Expo**.



Olivier Tardif, Fellow Polymer Synthesis and Catalyst Research Unit, Bridgestone Corporation, Environmental Achievement Award\_Winners



Rudi Hein, lifetime achievement Award Winners



Chidambaram Subramanian, Young Scientist Prize

# DIARY OF WORLD EVENTS

## 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@tbggroup.eu  
 web: www.tbggroup.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.rubbertechnology-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

## 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

## 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.rubbertechnology-expo.com

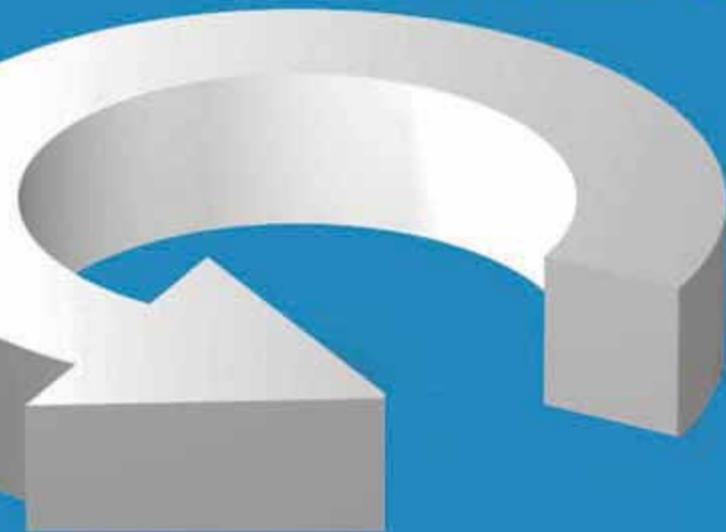
## APRIL 2020

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



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



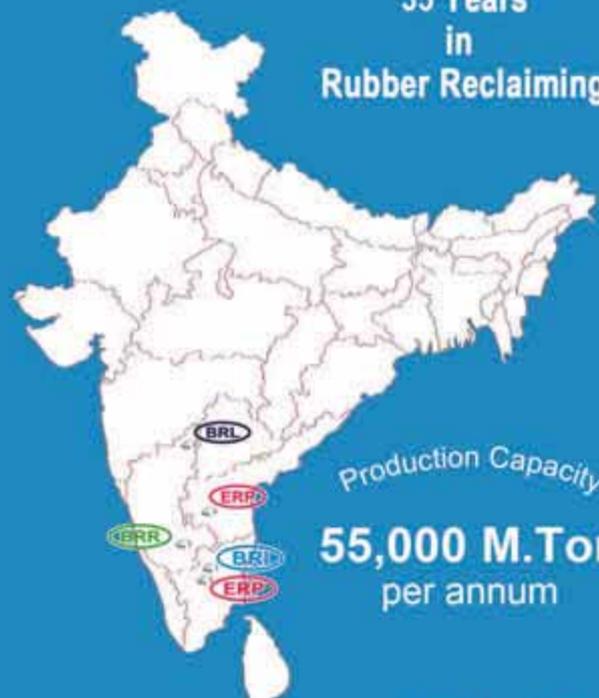
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**Eswar Rubber Products (P) Ltd.,**  
Namakal, Tamilnadu, India

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**Indian : Cumulative Production, Domestic Sales & Exports data for the period of April-January 2019 and Growth**

Category	Production			Domestic Sales			Exports			Report I (Number of Vehicles)
	April-January			April-January			April-January			
	2017-18	2018-19	% Change	2017-18	2018-19	% Change	2017-18	2018-19	% Change	
<b>I Passenger Vehicles ( PVs )</b>										
Passenger Cars	2,262,200	2,274,590	0.55	1,803,820	1,869,228	3.63	477,883	425,062	-11.05	
Utility Vehicles(UVs)	888,419	905,143	1.88	750,568	764,995	1.92	134,717	129,077	-4.19	
Vans	148,270	175,582	18.42	158,125	179,123	13.28	1,541	3,051	97.99	
<b>Total Passenger Vehicles ( PVs )</b>	<b>3,298,889</b>	<b>3,355,315</b>	<b>1.71</b>	<b>2,712,513</b>	<b>2,813,346</b>	<b>3.72</b>	<b>614,141</b>	<b>557,190</b>	<b>-9.27</b>	
<b>II Commercial Vehicles (CVs)</b>										
<b>M&amp;HCVs</b>										
Passenger Carriers	31,686	34,709	9.54	27,812	30,663	10.25	10,331	6,574	-36.37	
Goods Carriers	230,440	331,208	43.73	229,570	282,064	22.87	25,670	34,459	34.24	
<b>Total M&amp;HCVs</b>	<b>262,126</b>	<b>365,917</b>	<b>39.60</b>	<b>257,382</b>	<b>312,727</b>	<b>21.50</b>	<b>36,001</b>	<b>41,033</b>	<b>13.98</b>	
<b>LCVs</b>										
Passenger Carriers	39,888	42,709	7.07	36,046	39,483	9.54	2,917	3,045	4.39	
Goods Carriers	393,695	506,208	28.58	366,944	458,643	24.99	38,434	38,672	0.62	
<b>Total LCVs</b>	<b>433,583</b>	<b>548,917</b>	<b>26.60</b>	<b>402,990</b>	<b>498,126</b>	<b>23.61</b>	<b>41,351</b>	<b>41,717</b>	<b>0.89</b>	
<b>Total Commercial Vehicles</b>	<b>695,709</b>	<b>914,834</b>	<b>31.50</b>	<b>660,372</b>	<b>810,853</b>	<b>22.79</b>	<b>77,352</b>	<b>82,750</b>	<b>6.98</b>	
<b>III Three Wheelers</b>										
Passenger Carrier	718,248	930,301	29.52	406,378	470,947	15.89	313,200	467,318	49.21	
Goods Carrier	99,783	109,399	9.64	94,392	103,909	10.08	3,799	5,201	36.90	
<b>Total Three Wheelers</b>	<b>818,031</b>	<b>1,039,700</b>	<b>27.10</b>	<b>500,770</b>	<b>574,856</b>	<b>14.79</b>	<b>316,999</b>	<b>472,519</b>	<b>49.06</b>	
<b>IV Two wheelers</b>										
Scooter/Scooterette	5,874,447	6,171,804	5.06	5,641,241	5,821,333	3.19	262,253	332,197	26.67	
Motorcycles/Step- Throughs	12,504,999	14,023,044	12.14	10,421,215	11,569,807	11.02	2,034,250	2,412,800	18.61	
Mopeds	714,065	751,368	5.22	709,174	734,516	3.57	13,302	14,938	12.30	
<b>Total Two wheelers</b>	<b>19,093,511</b>	<b>20,946,216</b>	<b>9.70</b>	<b>16,771,630</b>	<b>18,125,656</b>	<b>8.07</b>	<b>2,309,805</b>	<b>2,759,935</b>	<b>19.49</b>	
Quadricycle	1,362	4,056	197.80	0	178	-	1,305	3,744	186.90	
<b>Grand Total of All Categories</b>	<b>23,907,502</b>	<b>26,260,121</b>	<b>9.84</b>	<b>20,645,285</b>	<b>22,324,889</b>	<b>8.14</b>	<b>3,319,602</b>	<b>3,876,138</b>	<b>16.77</b>	

**Society of Indian Automobile Manufacturers (08/02/2019)**

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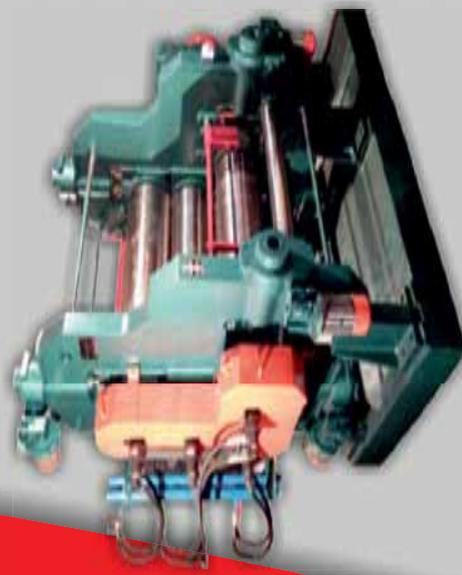
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3 LTRS TO 250 LTRS



**TWO ROLL RUBBER MIXING MILL -**  
6"X15" TO 26" X 84"



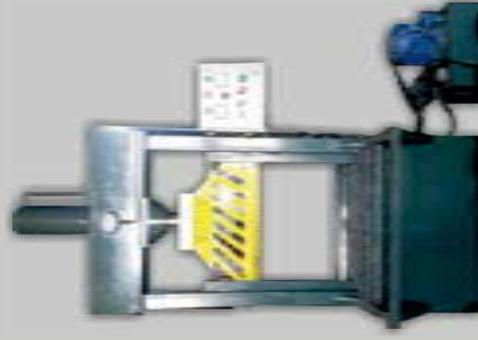
**TWO ROLL CRACKER/REFINER/GRINDER MILL**  
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## Nuova CIBA successfully integrated into the Zeppelin network

● The Italian Nuova CIBA S.p.A. Regio Emilia has been integrated into the Zeppelin Group for a full year now and the time has come to take stock. The good cooperation resulted in a win-win situation: both customers and companies benefit from the synergies. Founded in 1960 under the name CIBA, Nuova CIBA has become a renowned company in the tire and rubber industry thanks to its range of high quality and proven products for handling all types of materials as well as dosing and conveying them into any internal mixer. Nuova CIBA provides highly competitive, efficient and flexible solutions, especially for applications in the technical rubber goods and custom compounding industries. The company structure with its lean organisation provides tailor-made solutions for any customer type and size, particularly those in the technical rubber and compounding sectors.

### Access to the international Zeppelin network

The Zeppelin Group international network proved particularly beneficial to Nuova CIBA in this first year of collaboration. Zeppelin subsidiaries in all major industrial regions of the world ensure local presence and allow direct contact with the customers. In-depth knowledge of the specific conditions – which could vary considerably from country to country – also contributes to a speedy project development. Another advantage: engineering capacities can be shifted within the network if necessary to prevent bottlenecks and ensure high planning reliability. All orders are naturally processed within the



Zeppelin and Nuova CIBA work successfully together

Group using state-of-the-art 3D programmes.

### Our leading edge Technology Center

Having direct access to one of the world's largest testing facilities for rubber and carbon black, located on the Zeppelin Systems GmbH premises in Friedrichshafen, Germany, is yet another competitive advantage for Nuova CIBA. There, newly developed products and

systems can be optimised on a 1:1 scale and tested for practicability. Plant designs are also validated by the technology center specialists.

### Successful teamwork

The Zeppelin Group has added its technical and financial power to more than 50 years of experience of Nuova CIBA, consolidating its role as reference in the technical rubber goods and custom compounding industries.



The Zeppelin Technology Center is at the heart of the international network and is also available to Nuova CIBA specialists

## Zeppelin chemical weighing system – Highest accuracy and long-term reliability with no compromise regarding emissions

● A few years ago, Zeppelin Systems GmbH introduced its newly-developed chemical weighing system for the offline preparation of chemical and additive mixtures in bags. The system has generated a very positive resonance in the market and many customers are opting for the system because of its outstanding features and extremely high reliability and stable accuracy. In general the system is of a rigid design – appropriately adapted to the rough conditions of an industrial environment. Experienced customers/ operators of small chemical weighing systems know well that this is the crucial precondition assuring highest accuracies also over the long term operation of a plant and not only during the acceptance test.

For an optimum suitability to customers' needs, the system is available in two versions, now: for semi- and for full-automatic operation. In the solution for semi-automatic operation, the operator takes the filled



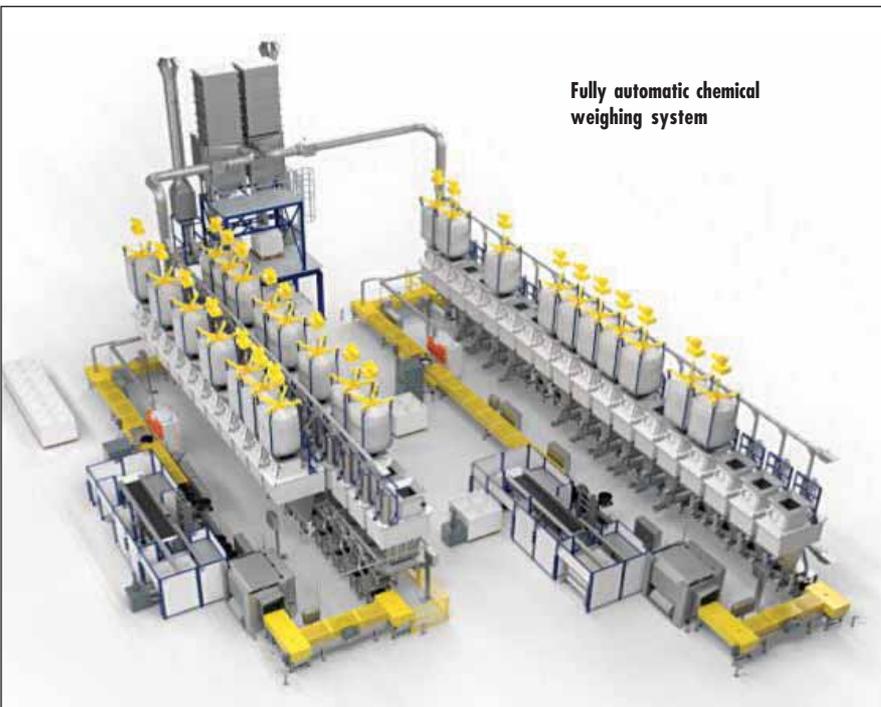
[https://www.youtube.com/watch?v=Z6ttUM\\_ka-M](https://www.youtube.com/watch?v=Z6ttUM_ka-M)

bag out of the transport bucket and puts it in a machine for air evacuation and sealing of the bag before putting it back into the transport bucket. In the fully automatic version of the system, an additional machine stretches and evacuates the bag before sealing it automatically. As you can see in Figure 2, Zeppelin has chosen a design and solution of outstandingly high quality so that this fully automatic solution also features highest reliability for long-term operation.

Like the semi-automatic weighing system, the full-automatic version can also provide two bags per minute and in ideal cases, it is even faster, supplying a maximum of 140 bags per minute or 3,200 bags a day with an uptime of 95%. This makes it possible to feed 4 to 5 mixing lines with small



Fully automatic chemical weighing system



chemical bags. Both systems are identical regarding the solutions for dosing and weighing and, for that reason, both are disposing highest accuracies.

The highly repeatable accurate batches produced by the Zeppelin small chemical weighing system lead to minimum level of rework and scrap and, consequently, to an outstanding increase in efficiencies regarding power and quality as well as sustainability and safety for the environment.

One can get a first impression of the design and mode of operation of the system by using the link below. The video shows the fully automatic process in detail and you can follow a complete weighing cycle of a small chemicals batch.

In addition to the Zeppelin small chemical weighing system, Zeppelin provides further specialist solutions for the mixing room. The small chemical weighing system is perfectly complemented by the Zeppelin Liquid Dosing System and the Zeppelin PreMix process for producing your own chemical premixes for inline dosing. Thus, Zeppelin provides the whole range of filler and chemical dosing solutions and can combine optimal processes for each raw material to fulfill special needs.

## A silo conquers the tire world – Bolt-Tec Silos from Zeppelin for carbon black and silica storage

● Zeppelin Systems provides a successful bolted silo design for low-cost shipment and easy assembly. The transport costs for silos have always been a major consideration in purchasing and plant building decisions of tire producers. Modular welded silos can be shipped more easily, yet they require skilled assembly staff and climatic conditions favorable for welding. Zeppelin's Bolt-Tec silos are a perfect solution for both, transport and assembly problems. As Bolt-Tec silos are shipped in segments and do not require welding, customers can profit from new opportunities in terms of freight and assembly cost savings as well as flexibility. And Bolt-Tec silos

can be delivered to every corner of the world in any size.

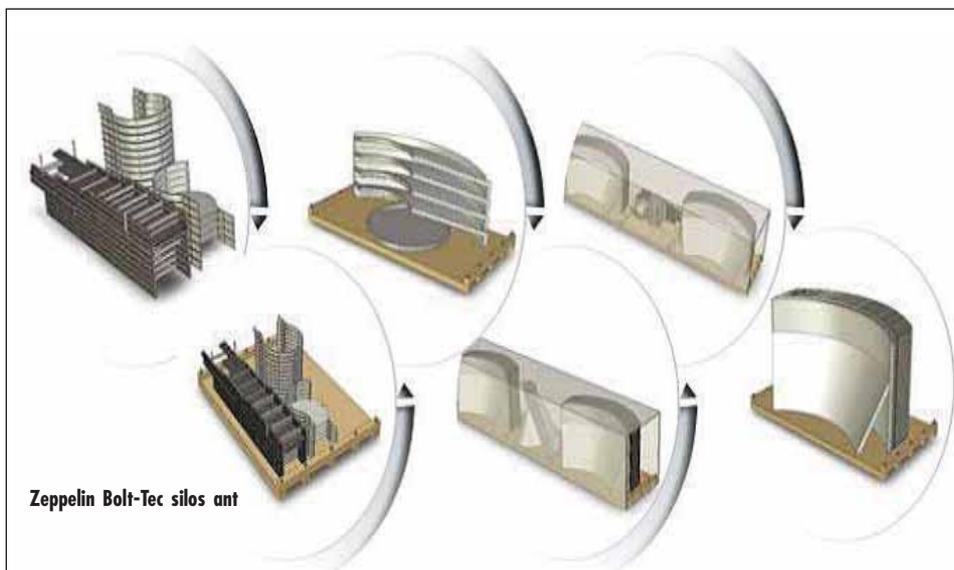
#### **Economical shipment in containers**

Thanks to the modular design, costly and risky heavy transports are now a thing of the past. Today, modern silos are quickly and economically transported throughout the world using a standard 40 ft. container for maritime freight and land transport. A conventionally welded 500m<sup>3</sup> storage silo, for example, would incur freight costs of approx. EUR 100,000 for a transport to Southeast Asia whereas the freight costs for a 500m<sup>3</sup> silo in Bolt-Tec Design would only be around EUR 10,000.

#### **Other advantages:**

##### **a) Safe and fast assembly independent of climatic conditions**

Thanks to the developed manufacturing concept, the on-site assembly can now be performed simply, predictably and economically. An on-site welding of the silo segments is no longer necessary, thanks to the high degree of preassembly. With a cordless screwdriver – no special tools required - the silo can be easily and quickly bolted together and mounted by skilled workers or the customer's own employees. The assembly can thus be performed at any time regardless of the local climate or weather conditions. Through a smart assembly planning with a higher number of storage silos, additional savings can be achieved and realised. Crane costs, for example, can be significantly reduced through a parallel performance of certain



assembly steps for several silos, such as stacking. However, in addition to installation there are other important

aspects that are positively impacted by this concept. For example, the customs clearance is greatly simplified since the costly and time-consuming import of welding and special tools is no longer required. Welding certificates and special qualifications are not required for the assembly staff of a bolted silo. Also, the requirements of the HSE regulations are reduced to a minimum through the purely mechanical work, thus enabling a quick and smooth installation. This does not only reliably guarantee the high quality of the silos, but also the planning security in terms of costs, resources and time required.

##### **b) Highest flexibility: Increase of storage capacity and relocation**

Moreover, this approach opens up a broad range of further possibilities. Thus, the silo can be disassembled at any time and re-installed at a different location. Furthermore, a rapid increase of storage capacity that is required is not a problem anymore. Now, there is the option of subsequently adding the storage volume easily and inexpensively.

##### **c) Carbon black and silica storage**



### debottlenecking in a tire production plant

Silos in Bolt-tech Design offer a vast variety of benefits. Tire producers will gain flexibility advantages thanks to the short delivery and installation times, through which they are able to meet the growing market demands and further expand their competitive advantage. Tire production plants are constantly expanded by additional mixing lines, thus steadily increasing the need for storage capacities. Bolt-Tec design silos can be a solution for this.

#### d) Proven in practice

The Bolt-Tec silo has been launched in 2009. Since then a vast variety of sizes and concepts has been implemented. Since 2014, more than 270 Bolt-Tec silos have been installed mainly in the chemical industry for various types of bulk materials. In the tire manufacturing industry, more than 50 Bolt-Tec silos have been installed throughout the world with capacities of 200 m<sup>3</sup> and more for carbon black and silica storage.

### PreMix of Rubber Compound Chemicals – reducing the complexity in the mixing room

●Zeppelin Systems GmbH presents a new Zeppelin PreMix Technology for a revolutionary concept of additive feeding in the mixing room, reducing complexity in chemical handling for a more consistent and reliable inline feeding process. The latest Zeppelin PreMix Technology based on the Zeppelin CMQ Mixer provides many valuable benefits in processing, handling and cleaning, resulting in significant cost savings in your production process. With the Zeppelin CMQ Mixer, small amounts of chemicals can be mixed into a chemical masterbatch (premix) before they are added into the mixing process for rubber production. The result is a stabilized premix which is no longer dusty and does not need any plastic bags. The premix has perfect consistence for being fed inline into a rubber mixing process.

In a typical mixing room, more



Zeppelin CMQ Mixer with flat polished panel head.  
YouTube Link <https://www.youtube.com/watch?v=ieGz1vgZ-VA>

than a 100 different possible raw materials need to be handled to prepare over 400 different rubber compounds. These large amounts of materials and recipes lead to an enormous complexity to be handled in the mixing room, requiring the highest level of flexibility. At the same time, high precision, track and trace and reproducibility are key factors for reliable production systems. But all the chemicals entering the aspiration system are missing in the product, so accurate dosing is quite a difficult task. These current challenges in the mixing room require new solutions for the dosing of chemicals and liquids. The Zeppelin PreMix Technology has been developed especially for this.

The new technology is characterised by the following features:

**Activation by de-glomeration:**  
**Precise dosing:**

**Less dust in the mixture:**  
**Faster and more omogenous incorporation:**  
**Less investment:**  
**No built-ups and caking:**  
**Sophisticated process solution:**

### R&D Centre Germany:

In its in-house testing center, Zeppelin is able to run specific tests with individual formulations and chemicals and develop a suitable process to activate, stabilise and homogenise chemicals for successful processes.

With the Zeppelin PreMix Technology, one can reduce complexity in the mixing room, reducing costs, while improving the precision of your process. Zeppelin showcased the benefits of the new technology at the Tire Technology Expo, which was held from March 5-7.

## High investment costs for electric cars and weak demand for new cars put pressure on industry



Prof. Dr. Ferdinand Dudenhöffer

The outlook for the global car markets in the coming years is rather bad. On the one hand, production plants will have to be converted to electro mobility using large investments, and on the other hand, the demand for new cars is falling. Major austerity programmes to switch to electric cars have been worked out. Porsche, for example, wants to save EUR 6 billion over the next eight years by rationalising its operating processes, while spending more on the development and production of electric cars. The regulatory burden is enormous. In China, there will be an electric car quota of 10 % for new cars in 2019. In the EU, rising CO2 emissions from gasoline engines following the decline in diesel-powered vehicles will have to meet the new CO2-EU targets from 2021, according to which only 95 g of CO2/km per new car are permitted.

Then again, demand for new cars is collapsing. The world market for light vehicles is falling. According to calculations by the Center Automotive Research (CAR), 1.9 million fewer new cars (light vehicles) will be sold in China in 2019 compared to 2017 (fig. 1). Taking into account the fact that the Chinese market is expected to continue growing at an annual rate of 5, this results in an overcapacity of almost 5 million new cars in 2020. Almost 19% of the production capacity in China would then be "un-used" in 2019.

High investment costs in electric mobility and overcapacity in China must be shouldered at the same time. The "double" pressure on margins is observable in profit warnings and the decline in share prices. This applies not only to car manufacturers, but also to suppliers. The second largest automotive supplier in the world,

Continental AG in Hanover, Germany, has already been through a series of profit warnings. Continental's share price has been declining by 45 since the beginning of 2018 from EUR 250 per share to EUR 140 at the beginning of December 2018. But the end of the bad news is not in sight.

## Trump's tariff wars upset balance of biggest car market

The main reason for the slowdown in global demand for new cars is China. Triggered by Trump's tariff wars, the Chinese car market is going into recession and, according to the forecast by CAR, will not return to the 2017 sales level of 24.3 million new cars until 2021 (fig. 1). Car manufacturers will have to "digest" overcapacities in China for the time being. At the same time, the decline in China is sending the global automotive market into the red figures, as 28 of all new cars are now sold in China.

Figure 1 shows the development. While 84.8 million new cars (light vehicles) were sold worldwide in 2017 and 24.2 million in China,

### Overcapacities in China

Overcapacities will rise to 5 million new cars in China in 2019.

Nearly 19 of China's existing production facilities will be unused in 2019.

No easing before 2023.

Fig. 1: Global and Chinese passenger car market 2010 – 2021 (car sales in million vehicles)

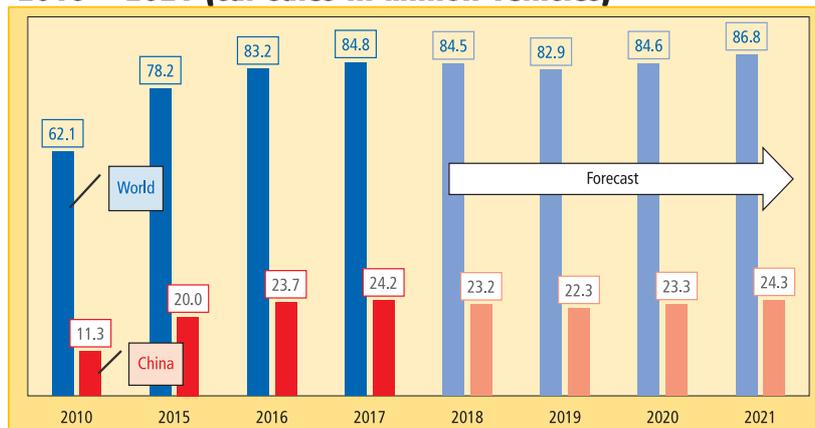
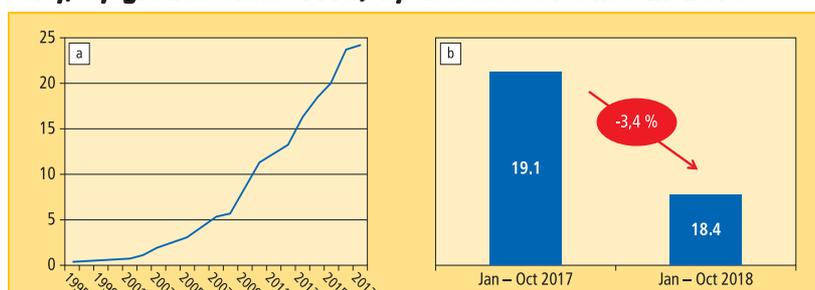


Fig. 2: Passenger car market in China 1995 – 2017 (sales in million cars), a) growth since 1995, b) decrease of sales in 2018



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 www.uni-due.de/car/  
 All figures and tables, unless otherwise stated, have been kindly provided by the author.

demand in 2018 is slipping slightly into the red figures. **Figure 2** illustrates the trend in China. China has been the locomotive for the automobile world for a good 20 years.

Even in the years of the global financial crisis, triggered by the Lehman bankruptcy in 2009, China recorded growth and bridged the car market slump in the USA after the Lehman shock. The main reason for today's problems is US President Donald Trump's tariff war. High import duties on Chinese products in the USA are slowing China's exports and slowing economic growth. High import duties for new cars produced in the USA, such as the SUVs from BMW or Mercedes, trigger price imbalances in the Chinese car market. The consequences have been the decline in car sales for several months now.

In the first 10 months of 2018, new car sales in China fell by 3.4 year-on-year (**fig. 2**). This also applies to the entire year 2018. This is the first time since 1990 that fewer new cars have been sold in China than in the previous year. This is a tough cut, as all carmakers have expanded their production capacities.

It is highly likely that the decline will continue in 2019. Poorer economic growth, high tariffs, expensive production in the USA due to steel tariffs: the "steady state balance" in the Chinese car market is disturbed. Even if peace returns in the next

three or four months in Trump's tariff war, the market needs time to level off. And this will not only be felt in the volume business, but also in the premium market. There is a difficult time ahead of carmakers and suppliers.

### China is not the only problem

In 2019, China will not remain the only problem in the world car business. A whole bundle of problems will have a slowing effect. Growth markets like Turkey have collapsed in the last six months. In October 2018 alone, the Turkish car market recorded a decline of 76 compared to the same month of 2017. In the first 10 months of 2018, the Turkish passenger car market collapsed by 32. The effects of the still uncertain Brexit will be felt in 2019 and even more so in 2020. The Iran sanctions imposed by the US President, the Syria conflict, and politics in Turkey have thwarted growth plans in the Middle East. Large-scale driving bans in Germany in 2019, financial market uncertainties due to rising deficits in the Italian state budget, and Russia sanctions: even if some of the risks are averted, the remaining ones will still paralyse economic growth.

The car market is in sync with the over-all economy. If the gross domestic product (GDP) rises, car sales also rise. Of course, this also applies vice versa. The most stable variable in forecasting

**Tab. 1: Real GDP growth, revised downwards (in %, compared with the previous year; arrows for 2018 and 2019 indicate the direction of revisions since September 2018)**

	2018	2019	2020*
<b>World</b>	<b>3.7</b>	<b>3.5</b> ▼	<b>3.5</b>
G-20	3.8▼	3.7▼	3.7
Australia	3.1▲	2.9▼	2.6
Canada	2.1	2.2▲	1.9
Euro area	1.9▼	1.8▼	1.6
Germany	1.6▼	1.6▼	1.4
France	1.6	1.6▼	1.5
Italy	1.0▼	0.9▼	0.9
Japan	0.9▼	1.0▼	0.7
Korea	2.7	2.8	2.9
United Kingdom	1.3	1.4▲	1.1
USA	2.9	2.7	2.1
Argentina	-2.8▼	-1.9▼	2.3
Brasil	1.2	2.1▼	2.4
China	6.6▼	6.3▼	6.0
India	7.5▼	7.3▼	7.4
Indonesia	5.2	5.2▼	5.1
Mexico	2.2	2.5	2.8
Russia	1.6▼	1.5	1.8
Saudi Arabia	1.7	2.6	2.5
South Africa	0.7▼	1.7▼	1.8
Turkey	3.3▲	-0.4▼	2.7
*Forecast			
Source: OECD, November 2018			

**Tab. 2: Top 15 passenger car markets (sales in 1,000 vehicles)**

Rank	Country	2015	2016	2017	2018*	2019*	2020*	2021*
1	China	20,047	23,693	24,171	23,204	22,276	23,278	24,326
2	USA	17,483	17,553	17,246	17,246	16,556	16,639	16,722
3	Japan	4,216	4,147	4,386	4,342	4,255	4,170	4,191
4	Germany	3,206	3,352	3,441	3,424	3,321	3,288	3,262
5	India	2,773	2,967	3,229	3,455	3,593	3,737	3,924
6	UK	2,634	2,693	2,541	2,337	2,174	2,065	2,067
7	Brasil	2,481	1,989	2,176	2,394	2,441	2,490	2,560
8	France	1,917	2,015	2,111	2,174	2,174	2,131	2,133
9	Canada	1,895	1,948	2,034	2,034	1,993	2,013	2,033
10	Italy	1,575	1,825	1,971	1,892	1,873	1,873	1,891
11	Mexico	1,350	1,602	1,529	1,514	1,483	1,543	1,574
12	Russia	1,601	1,426	1,596	1,803	1,984	2,281	2,510
13	South Korea	1,571	1,534	1,530	1,530	1,499	1,469	1,521
14	Spain	1,034	1,147	1,235	1,358	1,399	1,399	1,469
15	Australia	1,123	1,145	1,152	1,140	1,152	1,175	1,198
	<b>World</b>	<b>78,151</b>	<b>83,174</b>	<b>84,818</b>	<b>84,476</b>	<b>82,889</b>	<b>84,559</b>	<b>86,758</b>
*Forecast								

**Tab. 3: New passenger car models in 2019 (without facelifts)**

New models	Q1	Q2	Q3	Q4
Audi				Q4, A3
BMW		3 series, X7	e-Mini	1 series
Citroën	C5 Aircross			
Ford	Focus Active			
Jaguar				
Land Rover		Evoque		
KIA	Proceed	e-Niro		Soul EV
Mazda		3	CX3	
Mercedes	GLE, B-class		EQC, CLA	GLA, GLS
Opel		Vivaro	Corsa	
Peugeot		505 SW	208, e-208	
Porsche Coupe, Taycan	718 Boxster	911		Cayenne
Renault				Clio
Seat	Tarraco			
Škoda		Scala	Vision X	Citago E
Tesla		Model 3		
Toyota	RAV4, UX	Corolla, Camry		
Volvo		S 60	Polestar 1	
VW		T-Cross	T-Roc convertible	Golf

Note: red = fully electric cars

the car markets is the GDP or the change in GDP.

### In sync with the overall economy

**Table 1** indicates how GDP forecasts, such as those of the OECD, have changed in recent months. China's GDP is expected to grow by 6.3 in 2019. This is a clear slowdown compared to the previous years. In addition, the large wave of electric cars will not pour into the markets until after 2019. On the product side, this means that 2019 will not see any major new impetus to accelerate innovation-driven sales.

The results for the world's 15 largest car markets are summarised in **table 2**. According to the forecast, China will not return to growth and set new sales records until 2021. The USA remains as a saturated market roughly at its current level, which is also just "moderate" due to reduced economic growth. A further decline of the US GDP in 2019 is not unlikely. The US President's tariff wars also impact the US economy.

The outlook for Germany is also far from rosy. Lower economic growth, high customer uncertainty due to diesel driving bans, as well as manageable product innovations will cause the German car market to decline slightly over the next few years.

The most important model innovations in the European car markets are summarised in **table 3**. Here, deliberately only model changes and no facelifts were included. Facelifts are daily business that are used to stabilise the declining sales of older models, but do not trigger any additional direct sales.

The new BMW 3 series, the B-Class from Mercedes, and the VW T-Cross can provide global automotive market 2018 impetus. However, the large volume drivers such as Opel Corsa, VW Golf, Peugeot 208 and Renault Clio will not be on sale until Q4 2019.

A bundle of problems:  
 US tariff wars  
 Brexit  
 Sanctions on Iran  
 Devaluation of Turkish lira  
 Uncertainties in the Italian financial market  
 Sanctions on Russia  
 "Dieselgate" in Germany

### E-cars picking up – Tesla becomes market leader in Europe

After all, eight new electric car models will celebrate their premiere in 2019. These include the E-Mini, e-Niro from Kia, EQC from Mercedes, the electric version of Peugeot 208, Porsche Taycan and of course Model 3 from Tesla. Taking the Tesla Model 3 deliveries in the USA as a reference, the best-selling electric car in Europe in 2019 will also be the Tesla Model 3.

For the first time, Tesla apparently managed to build 1,000 Model 3 in one day in early December 2018. Company boss Elon Musk contacted his employees directly by e-mail and set the goal of continuously building 1,000 vehicles of Model 3 per day.

Model 3 with a base price of USD 35,000 before taxes and a tax incentive for electric cars should open up a broader market.

Musk's future goal is to run 50 vehicles an hour of his first mass-market Model 3 or at least 7,000 a week off the assembly lines.

In addition, Musk is focusing on reducing production costs. "It's important to bear in mind that the cost of the car is made up of about 10,000 unique parts and processes," said Musk. "Depending on how you count it, the current cost of a standard range Model 3 would be around USD 38,000, so each part or process step only costs around USD 3.80. That means finding cost efficiencies is a

game of pennies, even though it might not seem so," he explained.

Tesla wants to generate profits with its Model 3 with prices starting at USD 35,000. Model 3 will be delivered in Europe from February 2019. Similar to the launch in the USA, a better equipped version with a larger battery and all-wheel drive will initially be available starting at EUR 57,900, Tesla announced.

So far, however, the cheapest available version costs USD 45,000 in America. At the pace that Musk has set, a production of around 350,000 Model 3 vehicles can be expected in 2019. This means that more than 100,000 Model 3 cars will be sold in Europe in 2019.

### Conclusion

The global car business is becoming more difficult. In the next two years, the profits of car manufacturers and suppliers are expected to fall sharply. Recession in China and high investment costs in electric cars are pushing the industry into a sandwich position. The good news is that the breakthrough to the electric car is underway, and 2019 will be an important step into the future with Tesla and the new models of the classic car manufacturers. The significance of this step can also be seen in VW's announcement to launch its last classic combustion car in 2026. The change of times has begun.



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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.

#### **Account Details:**

Bank : ICICI Bank  
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Your contributions will be acknowledged.

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# RFID BARCODE BEAD LABELS

RFID barcode bead labels\* enable full production transparency within the tire industry: The beauty is in the simplicity

On June 26, 1974 at 08:01 a.m. the first product with a barcode was scanned at a US Marsh supermarket checkout counter in Troy, Ohio. The product, a 10-pack of Wrigley's Juicy Fruit chewing gum, the cost, \$0.67. Norman Joseph Woodland invented the first barcode, to help retailers identify products, and their cost, at checkout. Inspired by his knowledge of Morse code, Woodland used lines instead of dots to communicate product information. The patent on the barcode was issued in 1952. That it took more than 20 years until the code was used was due to the lack of the right equipment to read the barcode. Even today we can see in every supermarket cashiers are having trouble with reading the code.

Fast forward through 30 years of extensive investments in technology, resources and infrastructure the use of barcodes to control production logistics (and thus the quality), is widely used across the tire industry. Companies such as FineLine Technologies deliver barcode labels that are vulcanized in the bead area of a tire. What differentiates FineLine is our integrated standard barcode label with an RFID chip, which gets applied on the bead of the tire.

Theoretically, using a barcode bead label, a link can be made between a tire building machine, press, and all other process steps within the production of an individual tire. In a

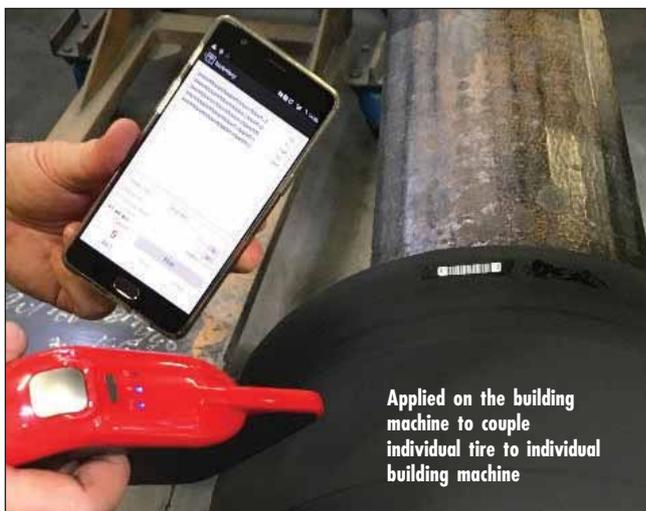


Jos Uijlenbroek, Co-Founder of RFID Solutions



Norman Joseph Woodland

manufacturing environment, there could be challenges. Although, each tire is round and black, it is impossible for a barcode scanner to always read the printed code no matter which position it is around the tire. An array of advanced barcode readers are needed per process step, to minimize any failed barcode scans, which - are likely. During the production of tires, the barcodes are regularly dirty making them difficult to read or un-scannable altogether, which slows down production and potentially creates tire identification and traceability issues, thus increasing costs.



Applied on the building machine to couple individual tire to individual building machine



After curing, the RFID barcode label can be read by using RFID reader and/ barcode reader. This enables easy integration

Manufacturers shifting toward the digital factory design are finding that reading the barcode automatically within every process, for example when loading the tires in the press, is challenging. Or that association between the press, mold, and tire cannot be done automatically. Transparency of production logistics, and the linking of production data to individual tires, as is integral to the concept of Industry 4.0, is difficult with the barcodes, only.

I wonder if Woodland foresaw the use his barcodes within

industrial processes? After all, his objective was to look for an easy way to identify products (at the checkout).

RFID Technology is not new

RFID technology traces its roots back to The Second World War. At that time, it was a big box, today it is a small chip which is hardly visible. The RFID tag itself doesn't have its own energy source, it is energized when it is in the field of an RFID antenna connected to an RFID reader. When applied within the tire industry, inventory management teams are able to scan and read 100s of tires at a time, in a matter of seconds.

In recent years FineLine Technologies and its subsidiaries Data2 & Ferm RFID Solutions have invested a lot of time and money into the development of a Radio Frequency Identification (RFID) solutions to identify individual tires that meet the following requirements:

- The solution must be able to be applied to a green tire to establish a link between the building machine, the press and all other related process steps extending to the vehicle and back (recycling)
- The solution should be usable on any type of tire, even within the retreading processes
- The solution must support applicable standards, for example in aviation industry IATA standards for aircraft tires. As well as global EPC and ISO standards relevant to tires (EPC Gen2, ISO18000-6C) and future tire standards (e.g. expected for retreading)
- The solution must be applicable for each type of tire, and be able to be applied manually or automatically without additional handling
- The solution must have a backup in which the readability is guaranteed with the use of current infrastructure
- The capturing of new process steps should be easily executed using standardized readers
- Easy integration with current infrastructure and IT hardware

A combination of current barcode bead labels and RFID technology was the most logical outcome of this development which meets all of the above-mentioned requirements and has no impact on the quality or performance of an individual tire.

The FineLine patent-pending RFID bead labels are visually the same as traditional barcode bead labels and can be handled in the same manner during the tire manufacturing process. When the bead labels are applied automatically, or by hand, to a green tire at the building machine, the data associated to the bead label gives the tire manufacturer the opportunity to track, trace and associate, all process steps to an individual tire. The main difference is that the tires can be read in bulk, without a line of sight, regardless of orientation of the tire, an RFID tag can be read even if the label is smudged with dirt or rubber, all using

relatively inexpensive infrastructure.

Therefore association between machinery, press and mold and all other processes such as quality inspection, rework, testing, warehousing, outbound logistics, association to a vehicle, return and warranty, are all made simple. Return logistics is also simplified even when, due to use, the barcode is not no longer readable, tires can be identified by the RFID chip within the label. Most of today's IT infrastructure can handle RFID data



**Even on bladders, a special RFID barcode bead label is working. Mistakes with bladders are not possible anymore**

input easily. Instead of "reading a barcode number" or a manual data input, the system receives data from RFID compatible infrastructure, which offers much higher quality and quantity of business relevant data.

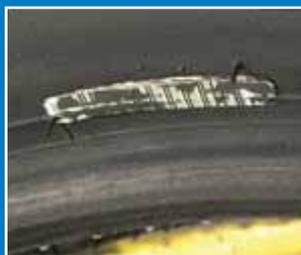
RFID bead labels are the next generation solution to OEMs enhanced capabilities to identify, track and trace a tire throughout its lifecycle. For the factories, implementing RFID barcode bead labels into the manufacturing processes, are the first steps within the transition to Industry 4.0.

This brings us back to Joseph Woodland the inventor of the barcode. My personal opinion is that he would be thrilled if he could experience the use of RFID as a next technology to identify unique objects, the setup of digital factories in this case, tires.

Jos Uijlenbroek [j.ujilenbroek@fermrfid.nl](mailto:j.ujilenbroek@fermrfid.nl) is one of the co-founders of Ferm RFID Solutions acquired in 2018 by FineLine Technologies. Together with a team of technicians, in close cooperation with the tire industry itself, he developed and patented several RFID products and solutions which enable tire producers to create full transparency from raw materials, including new business concepts such as "pay per mile" and "Tire as a service". In his spare time, he often is a guest lecture at some Dutch Universities about the use of RFID technology within challenging environments.



**Even when the barcode label is dirty and un-scannable, the RFID tag still works fine**



**When the RFID barcode bead label is applied and cured on the inner liner of the tire, the RFID can be read through the sidewall even in most tires with steel in the sidewall**

## Dr. K N Raghavan is the new Rubber Board Executive Director

●Dr. K N Raghavan IRS has been appointed Executive Director of the Rubber Board. He joined Indian Revenue Service in the year 1990. Presently, he is working as Commissioner of GST and Central Excise, Mumbai Central.



Dr. K N Raghavan, Executive Director, IRS

Dr. Raghavan, a native of Kochi, completed his MBBS from Calicut Medical College in 1988.

He served the Government in various capacities which include Deputy Director, Directorate of Revenue Intelligence, Calicut and as Managing Director of Kerala Co-operative Rubber Marketing Federation and CEO, Co-operative Medical College, Kochi. He was first Secretary (Commerce) in High Commission of India, Singapore. He has authored several books in the field of cricket, history etc.

### India's draft rubber policy seeks to push exports, protect livelihoods

●The Centre has floated a draft national rubber policy proposing livelihood protection for marginal growers through insurance and price support, introduction of auctions for rubber trading and provision of special allocation for new plantations and replanting of rubber.

The policy also suggests setting up an independent rubber products export promotion council for tires and general rubber goods, exploring the possibility of treating rubber as an agricultural product and focussing on research and skilling in the sector.

"The price volatility in rubber crop directly impacts the livelihood of small and marginal growers involved in the sector. Efforts will be made to ensure the livelihood protection of rubber growers by way of insurance and price support in consonance with the prevailing norms and policies," the draft circulated by the Commerce & Industry Ministry proposed.

The draft recognised the need to balance the interests of rubber growers who suffer due to falling prices in the



domestic market because of indiscriminate imports and that of the user industry, which wants adequate supply of rubber at reasonable prices, but could not arrive at a definite solution.

### No unwarranted imports

"Recognising the sensitiveness of natural rubber import in terms of its impact on domestic prices and raw material supply for end-user industries, the import policy on natural rubber should accord protection to rubber growers against unwarranted imports adversely influencing domestic prices and at the same time ensure availability of the raw material for consumers at affordable prices," the draft policy suggested.

The possibility of treating NR as an agricultural product for all practical and legal purposes could be explored, the draft noted. "The policy will also explore the possibility of treating income from rubber production as agricultural income, in consultation with the Ministry of Agriculture and Farmers' Welfare," it said.

To help the small-scale producers of rubber items, the rubber products export promotion council proposed in the draft would also handhold manufacturers belonging to the MSME sector. Export-oriented clusters would be identified and specific strategies would be framed for a focussed export boost, it said.

Budgetary support from the Central government in the rubber sector would focus of special allocations for new plantations and replanting of rubber, the draft said.

Appropriate convergence and dovetailing of funds with other programmes of departments/ministries of the Central and State Governments such as Mahatma Gandhi National Rural Employment (MGNREGA), Tribal Affairs and Department of North Eastern Region, would be attempted, it said. The draft observed that future trading was a competitive tool of marketing and regulated futures trading could contribute to price discovery and facilitate hedging to reduce risk. "Introducing auction for rubber trading in the country would be attempted for fair price discovery," it said.

### As rubber output dips, Indian tiremakers ask govt to ease supplies

●The tire industry has voiced its concern over the decline in production of NR in the country, as it led to a widening gap between domestic demand and supply.

The Automotive Tyre Manufacturers Association (ATMA) said that NR consumption has grown by 12%, while production declined by 7% in the April '18-January '19 period. The production-consumption gap for April-January period in the previous year stood at 3.16 lakh tonnes (lt), which has increased to 4.63 lt in the current financial year.

### Rising consumption

Quoting Rubber Board figures, ATMA said rubber consumption in India has touched a figure of 10.2 lt for the period under review, while production stood at 5.6 lt, leading to a gap of 45%.

"For the first time, the NR consumption in India has crossed the 10-lt mark in the first 10 months of the fiscal, recording an average monthly consumption of 1 lakh tonnes. The commitment of the tire industry to increase production footprint needs to be supported by increasing

the supply of raw materials. Otherwise, it will leave domestic manufacturing uncompetitive," said Rajiv Budhraj, Director-General, ATMA.

The consumption is likely to surpass the Rubber Board's projection of 12 lt for 2018-19. With domestic production catering to only 55% of the total NR consumption, the dependence on imports for consuming industry has increased by 30%. The imports for the April '18-January '19 period was 4,89,085 tonnes (3,75,339 tonnes).

#### Industry demands

The industry, in a communication to the Commerce Ministry, has asked for easing the availability of natural rubber, saying that imports are imperative for tyre plants to run. However, the policy environment is highly restrictive. The Custom Duty (on NR imports) is at 25% much higher than the rate of duty levied by any other rubber importing country.

The port restrictions on rubber imports is also adding to the costs and delays. Moreover, the tyre industry needs to adhere to pre-import condition for NR import against (tyre) export obligation. Further the export obligation period (for tyres) has been reduced from 18 months to only 6 months, making it tough for the industry.

The tyre industry has, therefore, urged the government for increasing domestic production of rubber and reducing the import duty on NR (raw material) to less than 10% since the basic import duty on tyres (finished products) is 10%.

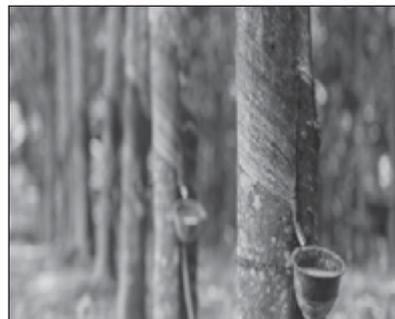
#### Rubber balance sheet

	Apr'17 - Jan'18	Apr'18 - Jan'19	Change	YoY (%)
Production	5,97,000	5,56,000	41,000	-7
Consumption	9,13,410	10,18,600	1,05,190	12
Gap	-3,16,410	-4,62,600		

## Top NR producers to cut exports by 240,000 tonnes

● In March, the ITRC (International Tripartite Rubber Council) held a meeting following which they said Thailand, Indonesia and Malaysia- the three countries which make up the Council- will curtail exports by 240,000 tonnes for four months from April. This move is in line with their urgent plans to prop up global prices for the commodity and was first announced in late February, but at the time the exact volume, start date and timeframe were not announced.

Officially called the Agreed Export Tonnage Scheme (AETS), the export cuts will commence in April 2019, and



last for four months. The three countries of the ITRC are the world's top NR producers and account for around 70% of the world's NR production. This new measure

they are undertaking follows an agreement in late 2017 to cut NR exports by 350,000 tonnes for three months.

Prices of the commodity have been worryingly low, with benchmark rubber futures on the Tokyo Commodity Exchange hitting a 27-month low in November on concerns over global oversupply, while Thai RSS3 rubber RUB-RSS3C-BKK also fell to its lowest in nearly three years around that time.

In addition to limiting exports, the ITRC has also agreed to try to significantly boost the domestic use of rubber in each of the three producing countries, through implementation including rubberised roads.

## Inaugural General Assembly of GPSNR held in Singapore

● On March 26, NR stakeholders convened in Singapore for the inaugural General Assembly of the Global Platform for Sustainable Natural Rubber (GPSNR) – a platform to help the NR industry across the world address environmental damage. The GPSNR is to function as an independent forum that will lead improvements in the socio-economic and environmental performance of the natural rubber (NR) value chain.

The development of the Singapore-based GPSNR was initiated by the CEOs of the World Business Council for Sustainable Development (WBCSD) Tire Industry Project (TIP) in November 2017. Members of the platform include tyre manufacturers, rubber suppliers and processors, vehicle makers and NGOs. Representatives from each of these stakeholder groups have contributed to the development of the platform and the wide-reaching set of priorities that will define GPSNR strategy and objectives.

A ceremonial launch of the GPSNR was held last October, following which membership grew to 39 Founding Members, including recruitment of the platform's first civil society members. The GPSNR remains open to membership applications from all NR stakeholders.

The General Assembly saw the approval of organizational Statutes and Code of Conduct, and the formation of an Executive Committee that has the mandate of overseeing the strategic and operational activities of the GPSNR. As required by the Statutes, the Executive Committee is made up of representatives from each of the four GPSNR membership categories, namely: Rubber producers, processors and traders; auto manufacturers and other downstream NR users and financial institutions; tyre makers and other NR makers/buyers and civil society organisations.

Stefano Savi, Director of the GPSNR called the appointment of the Executive Committee a critical piece to a landmark achievement and said it had taken considerable effort from all stakeholders to get to this stage.

The platform is working to finalise its operational strategy, guided by the stakeholder-agreed GPSNR priorities of harmonising standards to improve respect for human rights, preventing land-grabbing and deforestation, protecting biodiversity and water resources, improving yields, and increasing supply chain transparency and traceability.

Peter Bakker, president and CEO of WBCSD (World Business Council for Sustainable Development) said, "We are enormously proud to see the GPSNR take this important step. The commitment of TIP members to achieve

sustainable NR has been a crucial driving force in taking the GPSNR from concept to reality. Today, our members are joined by a growing and increasingly well-balanced GPSNR membership of rubber value chain and civil society members – the actors are in place, and the foundations for transformative action along the NR value chain have been laid. Now, the real work can begin.”

### **Global NR platform establishes governance structure**

●Stakeholders have agreed to a governance structure for the global platform for sustainable NR and are ready to approve it, according to the organisation.

More than 50 attendees, including founding members of the GPSNR approved the structure and a plan for priority actions at a workshop in Singapore, a GPSNR news release said.

GPSNR Director Stefano Savi said the move is a significant development in the establishment of the organisation.

“We have seen compromises from all parties. There’s a spirit of co-operation and inclusivity that shows work,” Savi said.

The GPSNR had its first General Assembly scheduled for March 21 in Singapore, in conjunction with the World Rubber Summit. At that time, the governance structure was proposed for adoption, the firm said.

“Some details remain that will need to be worked out in the drafting of the statutes and Code of Conduct documents. I am confident we are in a good position to see these documents approved,” Savi said.

Established in November 2017 by the Tire Industry Project of the World Business Council for Sustainable Development, the GPSNR is a multi-stakeholder initiative designed to improve the socio-economic and environmental performance of the NR value chain, according to the GPSNR.

“The GPSNR will work to harmonise standards to improve respect for human rights, prevent land-grabbing and deforestation, protect biodiversity and water resources, improve yields, and increase supply chain management and traceability,” it said.

As presented in the press release, the GPSNR board of directors comprise 30% rubber producers, processors and traders; 30% tire makers, rubber product makers and rubber buyers; 30% “civil society;” and 10% auto makers, other downstream users and financial institutions.

The board will have 10 members, and the term of office for board members will probably be two years, according to Savi.

The enrollment of smallholders in the GPSNR will be the organisation’s priority, the release said.

While direct participation by smallholders in the GPSNR is possible, the sheer number of smallholders makes that infeasible, according to Savi.

“For this reason, the platform has set itself the target of defining criteria for smallholders’ representation,” he said.

A smallholders’ working group will work out the criteria for smallholders’ participation, and they will be represented within the Producers category, Savi said.

The GPSNR will also work on recruiting rubber processors, non-tire rubber product makers and non-government organisations specialising in social issues relevant to rubber production, according to the press release.

Details of the GPSNR’s outreach activities will be released soon, according to Savi.

The GPSNR will be based in Singapore. The TIP will support the GPSNR financially during its start-up and the first two years while the organisation works out a long-term revenue model, it said.

### **Malaysia, Indonesia and Thailand agree to trim NR exports by up to 300,000 tonnes**

●Malaysia, Indonesia and Thailand – the three largest NR producing countries in the world – agreed in February to implement the Agreed Export Tonnage Scheme (AETS) to reduce NR exports from their countries by 200,000 to 300,000 tonnes, in the face of depressed NR prices.

The decision was announced in a joint media release by Malaysia’s Primary Industries Ministry and its counterparts

### **Itochu launches NR block-chain traceability system**

●Japanese trading company Itochu Corp. has launched a proof of concept (PoC) with the aim of developing a block-chain traceability system for NR. The move will ensure stable procurement and supply of raw material for Itochu’s partners and improve traceability of distribution. The PoC will be rolled out for the NR supply chain of Indonesia headquartered Pt. Aneka Bumi Pratama (ABP), an Itochu-owned NR processing company. The scheme aims to use a smartphone app that allows buyers and sellers to conduct mutual authentication and to record transaction details in the blockchain. Such data include date, time and location, according to the Japanese trading firm.

In addition, Itochu is planning to provide an “incentive system” to encourage suppliers to provide accurate data-recording. It expects the process to improve the transparency of the NR supply chain – from production to processing. The blockchain development will also target sustainability issues surrounding the production of natural rubber.

“It is critical to assure that our business activities demonstrate a strong respect for the environment and human rights,” the company stressed. Issues such as deforestation and local residents’ rights have been cited by the Japanese company as points of concern. Itochu is a founding member of the recently-formed Global Platform for Sustainable Natural Rubber (GPSNR). GPSNR has been set up by NR stakeholders, including many major tire makers, to achieve higher sustainability through supply-chain collaboration.



**From left: Primary Industries Minister Teresa Kok, Thailand's Agriculture and Cooperatives Minister Grisada Boonrach and Indonesia's Coordinating Minister for Economic Affairs Darmin Nasution**

in the two other main natural rubber producing countries after attending the Special Ministerial Committee Meeting of the International Tripartite Rubber Council (ITRC) — of which the three countries are members.

They believe the AETS is an effective tool to address transient shock imbalances in the global NR market and have tasked senior officials of ITRC to discuss the details of the AETS implementation within two weeks in Thailand.

Meanwhile, to raise domestic consumption “significantly”, the three countries will also continue to implement projects under the Demand Promotion Scheme (DPS).

“On top of the forecast of 700,000 MT of its regular annual consumption, Thailand is implementing DPS project which would consume additional 270,000 MT of rubber. In addition to that, Thailand has been implementing its Strategic Market Operation through six physical rubber markets which has resulted in improved NR price in domestic market. With this operation, the trading volume of physical rubber in 2018 increased by 105,600 MT with the total value of US\$225 million,” the statement read.

Malaysia too would continue its rubberised road project. “The government has approved a RM 100 million allocation for the maintenance and construction of roads using cup-lump modified bitumen in ports and industrial areas,” the statement said.

In Indonesia, it said NR has been used in various infrastructure projects, like provincial and district roads throughout the country, railroad track dampers, road separators, bridge bearings and tyre retreading.

While the ministers acknowledged that NR price has been hovering at a low level throughout 2018 until early 2019 amid negative market sentiment and uncertainty in the global economy, they said they have been encouraged with the improved NR price globally since the middle of December 2018.

“The ministers expressed their hope that NR price would improve towards a remunerative level. With improved NR price, it would remain attractive for smallholders to plant and harvest,” the statement read.

On that note, the three countries have been encouraged

to accelerate replanting of NR as well as the planting of alternative crops.

“Thailand continues replanting rubber trees by 65,000 hectares per year. While Indonesia will initiate replanting rubber trees by 50,000 hectares per year and Malaysia is implementing its replanting programme of 25,000 hectares per year,” the statement read.

The meeting was held in Bangkok, Thailand — the world's largest NR producer — and hosted by Thailand's Minister of Agriculture and Cooperatives Grisada Boonrach. It was attended by Indonesia's Coordinating Minister for Economic Affairs Darmin Nasution, and Malaysia's Primary Industries Minister Teresa Kok, with senior government officials and board members of the International Rubber Consortium, a company established by the three members of the ITRC.

At the meeting, the ministers also proposed the formation of an Asean Rubber Council, a platform for discussions on the development of the natural rubber industry and cooperation between ASEAN member countries and dialogue partners.

They also deliberated on the future direction of the Regional Rubber Market (RRM) as a futures market and the establishment of an arbitration centre to support the RRM.

## **Brazilian NR imports turning to Latin America for opportunities – how this opportunity may start a movement for a local market**

●Diogo Esperante is Executive Director of APABOR (the NR Farmers and Processors Association of São Paulo/Brazil). He is responsible for the Statistical Monitoring Program of the National Association of Natural Rubber Producers in Brazil (ABRABOR). He post graduated in Project Management and have been active in the Brazilian NR industry for the past 10 years.

In 2018, Brazil improved its domestic production of NR. The country has about 257 thousand hectares of planted area with 152 thousand hectares under production.



**Diogo Esperante, Executive Director, APABOR**

Natural Rubber Brazil

IBGE - Produção Agrícola Municipal 2018



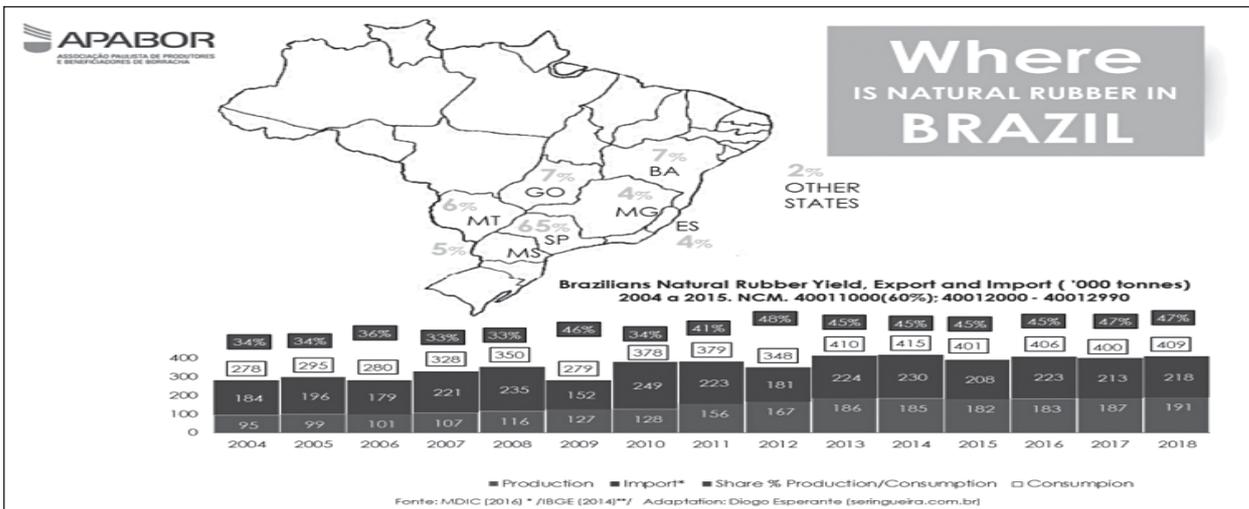
Brazilian Natural Rubber Tapping Area per States									
Year= 2010/2017*									
	2010	2011	2012	2013	2014	2015	2016	2017	Planted Area (ha) Source: ABRABOR Estimation 2017
<b>BRAZIL</b>	<b>124.946</b>	<b>134.947</b>	<b>137.813</b>	<b>139.998</b>	<b>146.552</b>	<b>144.176</b>	<b>156.278</b>	<b>152.130</b>	<b>251.000</b>
São Paulo (SP)	47.191	51.278	52.438	55.456	61.522	60.358	60.781	68.567	132.000
Bahia (BA)	31.456	33.040	32.800	33.263	33.521	33.595	33.122	24.962	25.000
Mato Grosso (MT)	22.625	22.995	23.350	22.201	21.186	18.615	28.105	22.117	23.000
Espírito Santo (ES)	7.526	7.979	8.240	8.507	8.920	9.015	9.030	9.152	16.000
Minas Gerais (MG)	4.154	7.442	7.714	9.211	9.375	9.726	10.931	9.076	15.000
Goiás (GO)	3.295	3.540	4.394	3.950	5.905	6.240	6.899	7.320	18.000
Mato Grosso do Sul (MS)	829	820	821	855	854	852	1.413	5.799	16.000
Other States	7.678	7.853	8.056	6.423	5.269	4.873	5.997	5.137	6.000

<http://www.sidra.ibge.gov.br/bda/tabela/listabl.asp?c=1613&z=p&o=28>

Even though, there are states (with low productivity rates) that are reducing its areas, like Mato Grosso (MT) and Bahia (BA), traditional regions like São Paulo, and upcoming ones like Goiás-GO (with higher productivity rates), have shown good area expansion. For that, production of Natural Rubber in the country is increasing and has reached, according to the national statistics institute IBGE, about 187 thousand tonnes of dry rubber in 2017.



Although the country's production is rising (and expected to achieve 255 thousand hectares planted with 160 tapping and 95 thousand hectares to enter tapping in the next 7 years) it's still no match for its booming consumption.



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### 4<sup>th</sup> Annual **INNOVATIVE ALL- SEASON AND WINTER TIRE DEVELOPMENT FORUM**

An increasing number of nations are implementing mandatory use of winter tires for a specific period of the year. The European Commission is just a few years away before implementing the new tire labeling regulations. The increased natural rubber demands challenges the supply and the look for rubber alternatives. The challenges of the industry are ongoing and there is a constant need for them to be addressed and discussed in a professional setting.

This much-anticipated, annual Tire Development event brings together the leaders of the tire industry to discuss the latest challenges and developments, including Material and Design advancements, Labeling regulations, OEM requirements, Technological improvements and additional challenges reflected in the agenda. The event represents a professional platform where senior-level representatives from tire and vehicle manufacturing companies as well as research institutes and universities come to network and exchange experiences.

*Among the key challenges discussed will be:*

- Market growth and increased competition
- EU Commission's upcoming labeling regulations
- Tire-pavement interaction on salted snow
- Innovative winter tire testing facilities
- Developments of natural rubber alternatives
- Vehicle development effect on tire development

### 4<sup>th</sup> Annual **INNOVATIVE TRUCK AND BUS TIRE DEVELOPMENT FORUM**

Whether carrying cargo or passengers, trucks and buses are the lifeblood of the world's economy. As the sales of commercial vehicles increases worldwide, the Truck and Bus Tire sector continues to grow. Tire manufacturers are continually developing new innovations in TBR Tire technology, trying to raise productivity and drive down costs per kilometre by optimising performance over the whole tyre lifecycle.

The 4th Annual Truck and Bus Tire Development Forum will bring together the whole value chain involved and related to TBR tire development, including tire manufacturers, truck manufacturers, specialty chemical companies and other organizations and Universities related to, and doing researches on tires, to discuss and find solutions to the most current industry challenges.

*Among the key challenges discussed will be:*

- Tire regulations and labelling
- Winter TBR tires
- The role of tyres and solutions in the future of mobility
- The impact of EU's anti-dumping tariffs on Chinese truck and bus tires
- Connected Tires
- Circular economy in tires sector

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**Ms. Eleonora Fresia**  
[eleonora@tbmgroup.eu](mailto:eleonora@tbmgroup.eu)

## The Trend

India produced 67,000 tonnes of natural rubber (NR) during October 2018, up 8.1% from the same month a year ago.

The total quantity produced during April to October 2018 was down 9.9% at 344,000 tonnes from the same period a year ago. The production preliminarily estimated for November 2018 is 65,000 tonnes, up 1.6% from 64,000 tonnes produced during the same month a year ago.

Rubber-based manufacturing industry in the country consumed 102,560 tonnes of NR during October 2018,

slightly down 0.4% from a month ago. A total quantity of 716,600 tonnes was consumed during the seven months ended October 2018 recording 16.0% year-on-year increase. The consumption during the period rose 19.1% in auto-tyre manufacturing sector and 8.8% in general rubber goods manufacturing sector. Accounting a quantity of 102,000 tonnes estimated to have consumed during November 2018,

the country's total consumption during the first eight months of the current fiscal is likely to accomplish a 14.6% year-on-year rise. India imported 67,457 tonnes of NR during October 2018 making the total volume during the first seven months of 2018-19 at 361,665 tonnes, up 37.4% from the same period a year ago. The export of NR during the period from April to October 2018 was 432 tonnes compared to 4,687 tonnes during the same period in the previous year. The closing stock estimated for October 2018 is 255,000 tonnes, compared with the corresponding quantity of 262,000 tonnes a year ago. Coming to the synthetic rubber (SR) industry, the domestic production increased 24.5%, year-on-year, to 215,391 tonnes during the seven months ended October 2018. The SR consumption rose 15.2% during the same period to 408,190 tonnes.

### 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.
December	2017	12794	13082	10455	15283	12633	1365	9309
January	2018	12285	12746	10755	14787	12937	11352	9602
February	"	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

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)
	April 2018 (1)	April 2017 (2)	April 2018 to June 2018 (3)	April 2017 to March 2017 (4)	April 2017 to March 2017 (5)	
<b>PRODUCTION</b>						
<b>NATURAL RUBBER (NR)</b>						
Ribbed Smoked Sheet (RSS)	48825	44060	229455	271265	478445	
Solid Block Rubber	9815	9630	63855	58405	114875	
Latex Concentrates(DRC)	6110	5910	38215	37440	75070	
Others	2250	2400	12475	14890	25610	
<b>Total</b>	<b>67000</b>	<b>62000</b>	<b>344000</b>	<b>382000</b>	<b>694000</b>	<b>-9.9</b>
<b>SYNTHETIC RUBBER (SR)<sup>P</sup></b>						
Styrene Butadiene (SBR)	18054	19730	139226	107006	209938	
Poly butadiene (BR)	10166	9670	73353	62300	113666	
Others	440	800	2812	3645	7617	
<b>Total</b>	<b>28660</b>	<b>30200</b>	<b>215391</b>	<b>172951</b>	<b>331221</b>	<b>24.5</b>
<b>Total NR &amp; SR</b>	<b>95660</b>	<b>92200</b>	<b>559391</b>	<b>554951</b>	<b>1025221</b>	<b>0.8</b>

## CONSUMPTION

<b>NATURAL RUBBER (NR)</b>						
Ribbed Smoked Sheet (RSS)	40520	38125	292385	289875	513710	
Solid Block Rubber	51540	42695	352895	269690	493410	
Latex Concentrates(DRC)	8260	6200	55300	44190	79765	
Others	2240	1980	16020	14205	25325	
<b>Total</b>	<b>102560</b>	<b>89000</b>	<b>716600</b>	<b>617960</b>	<b>1112210</b>	<b>16.0</b>
Out of which Auto Tire Manufactures	<b>73607</b>	<b>61449</b>	<b>513149</b>	<b>430975</b>	<b>772162</b>	<b>19.1</b>
<b>SYNTHETIC RUBBER (SR)<sup>P</sup></b>						
Styrene Butadiene (SBR)	30450	24680	207755	170710	311555	
Poly butadiene (BR)	16815	14630	117770	103260	184130	
Others	11325	11165	82665	80300	138290	
<b>Total</b>	<b>58590</b>	<b>50475</b>	<b>408190</b>	<b>354270</b>	<b>633975</b>	<b>15.2</b>
Out of which Auto Tire Manufactures	40580	34816	279990	247064	437754	<b>13.3</b>
<b>Total NR &amp; SR</b>	<b>161150</b>	<b>139475</b>	<b>1124790</b>	<b>972230</b>	<b>1746185</b>	<b>15.7</b>
Out of which Auto Tire Manufactures	<b>114187</b>	<b>96265</b>	<b>793139</b>	<b>678039</b>	<b>1209916</b>	<b>17.0</b>

## PRODUCTION & CONSUMPTION OF RR

(Metric Tonnes)

	October 2018	October 2017	April 2018 to October 2018	April 2017 to October 2017	April 2017 to March 2018
<b>RECLAIMED RUBBER (RR)</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
Production @	12100	10745	83910	73815	131575
Consumption	12350	10925	82860	73175	130510
Out of which Auto Tire Manufactures	4555	4157	31472	29187	50866
Stock with Manufacturer	12915	11440			

(end of the Month/Year

@:Indigenous purchase by Manufacturers

## IMPORT/EXPORT & STOCK OF NR & SR

### Import(p)

Natural Rubber	67457	38048	361665	263221	469760
Synthetic Rubber	29640	25070	199749	201089	338189
Total NR & SR	97097	63118	561414	464310	807949

### Export(p)

Natural Rubber	0	479	432	4687	5072
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### IMPORT OF DIFFERENT FORMS OF NR DURING OCTOBER 2018<sup>p</sup>

(Tonnes)

Type	Quantity	% share
RSS Grades	13612	20.2
Solid Block Rubber	53055	78.6
Latex Concentrates (drc)	790	1.2
Others	0	0.0
<b>Total</b>	<b>67457</b>	<b>100</b>

p:provisional

### TYPE-WISE EXPORT OF NR DURING OCTOBER 2018<sup>p</sup>

(Tonnes)

Type	Quantity	% share
RSS Grades	0	0.0
Solid Block Rubber	0	0.0
Latex Concentrates (drc)	0	0.0
Others	0	0.0
<b>Total</b>	<b>0</b>	<b>0</b>

p:provisional

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## K M Mammen

### MRF Chairman-cum-Managing Director elected ATMA Chairman

**C**hairman & Managing Director of MRF K M Mammen (Vino) has been elected Chairman of ATMA, the leading light of the Indian Tire Industry. MRF is amongst the Global Top 20 Tire Companies with a turnover of over USD 2.2 billion.

K M Mammen has held various executive positions in business associations in the country including 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 a milestone turnover of over Rs 15,000 crore (over USD 2.2 billion) ranking amongst the top 20 tire companies in the world.

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.

Set up in 1975, ATMA is amongst the most active national industry bodies in the country representing Rs 60,000 crore (US\$8.5 bn) automotive tire industry. Eleven large tire companies comprising a mix of Indian and International tire majors and representing over 95% of production of tires in India are members of the Association. ATMA members include Apollo Tyres, Birla Tyres, Bridgestone India, Ceat, Continental India, Goodyear India, JK Tyre & Industries, Michelin, MRF, TVS Tyres and Yokohama.

### ATMA Convention calls for closer alignment between auto and tire sectors

The ATMA Annual Convention 2019, the flagship event of the tire industry in India brought the spotlight on closer collaboration between Auto OEMs and the tire industry with a view to address the emerging realities of mobility.

The ATMA Convention brought together automotive and tire industry leaders, top policy makers, government officials, thought leaders and consultants. Three past chairmen of ATMA **K M Mammen**, **Dr Raghupati Singhania** and **Satish Sharma** led the tire industry in welcoming the dignitaries from the auto sector.

In his welcome address, **Anant Goenka**, Chairman



**K M Mammen, MRF Chairman-cum-Managing Director & ATMA Chairman**



**Anshuman Singhania, Vice Chairman, ATMA**

ATMA said, "The auto industry is going through tremendous change. Therefore, the bonds between Auto OEMs and the tire industry have become all the more important. There are new concepts such as electric vehicles, connected vehicles, shared vehicles and autonomous vehicles, all being talked about and visible in different parts of the world. Against this backdrop, it is more important for us to partner even closer, develop technologies closely and work and think together as to how we can take advantage of this change and convert these changes into strong opportunities for the entire value chain."

Speaking through video conferencing, Union Minister of Road Transport & Highways (MoRTH), **Nitin Gadkari** stated that the Indian tire industry was creating new landmarks in domestic growth as well as exports contributing to a growing economy. He advised the industry to develop new technologies with single-minded focus on road safety which is the top priority of the government. He urged the industry to join hands with

MoRTH in running drivers training institutes and skilling people for improving road safety.

Speaking on the occasion, Chief Guest Inaugural Session **Vikram S Kirloskar**, President Automotive Research Association of India (ARAI) and Vice Chairman, Toyota Kirloskar Motor said, "If the economy grows, mobility will



**Anant Goenka – Outgoing Chairman ATMA**

increase and if mobility increases, economy will grow. There is large headroom for growth in India. However, there are three major challenges facing the auto and tire industry – energy security of the country, environmental issues that we are facing and the challenge of Make in India. The auto and tire sectors need to collaborate in meeting all these three challenges.”

In a special session with ATMA Managing Committee held on the side lines of

ATMA Annual Convention 2019, **Amitabh Kant**, CEO, NITI Aayog, expressed confidence over the progress made by the tire industry in India and urged the members to continue to focus on manufacturing excellence and lead the world in size and scale.

**Anuj Kathuria**, President, Global Truck, Ashok Leyland, presented a keynote on the emerging scenario in the Commercial Vehicle segment. **Rakesh Batra**, Partner & National Leader -Automotive Sector, E&Y and **Rajiv Budhraj**, Director General ATMA, presented an overview of the auto and tire sectors respectively.

The ATMA Convention had three high-profile panel discussions, one each on Commercial Vehicles (CVs), Passenger Vehicles (PVs) and 2-Wheelers. Sector heads in Auto OEMs interacted with their counterparts in the tire sector.

**Kavan Mukhtyar** (PwC) moderated the PV Panel, which had **Koshy Varghese** (MRF Ltd), **Parag Satpute** (Bridgestone), **Deepak Sawkar** (Maruti Suzuki), **Abhishek**



**Satish Sharma – Apollo Tyres, Rajiv Prasad – JK Tyres, Rajesh Kaul – Tata Motors, Suvendu Moitra – Ashok Leyland, Pradeep Mishra**

**Sahi** (Honda) and **Chanchal Chauhan** (Editor BTVi).

The two-wheeler panel had representation from leading two-wheeler makers and included **Nitish Bajaj** (Ceat) and **P. Vijayaraghavan** (TVS Tyres); **Deepak Manchanda** (Hero MotoCorp); **Rahul A. Karambelkar** (Bajaj Auto) and **Ashok Goel** (Hero MotoCorp). The panel was moderated by **Shamsher Dewan** (ICRA).

Speaking at the Valedictory Session on the future of mobility, **Anil Srivastava**, Adviser (Infrastructure Connectivity) & DG-DMEO, NITI Aayog, said, “The government has been working very hard on the issue of electric vehicles and significant policy decisions have been taken including FAME2. Several policy decisions have been taken for switchover and smooth transition to electric vehicles whether related to power tariffs or setting up of charging stations. The Ministry of Housing has amended bylaws for charging infrastructure. The Ministry of Science & Technology



**Vikram S. Kirloskar - President Automotive Research Association of India (ARAI) & Vice Chairman, Toyota Kirloskar Motor**



**Koshy Varghese- MRF (L) felicitating Anuj Kathuria, President Global Truck, Ashok Leyland**

is working on charging protocols. Heavy industries have come out with FAME and fiscal incentives. State governments have also come forward with incentives like no road tax on two-wheelers, no permits required etc.

**ATMA Tire Safety Awards**

On the occasion, Tire Safety awards were presented to stakeholders who have helped the tire industry in spreading the message of tire safety. The recipients were- RSDC, ISRPL, Amity University & TDI International School. Anil Srivastava conferred the awards along with **Satish Sharma** (Apollo Tyres) and **V K Misra** (JK Tyres).



**Nitish Bajaj – Ceat, P. Vijayaraghavan – TVS Tyres, Deepak Manchanda- Hero MotoCorp, Rahul Karambelkar – Bajaj Auto , Ashok Goel – Hero Motocorp**



**K M Mammen welcoming Vikram Kirloskar**



**P Vijayaraghavan felicitating Shamsheer Dewan**



**Dr. Raghupati Singhania presenting a memento to Vikram Kirloskar**



**Satish Sharma felicitating Anil Srivastava**

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# THE RUBBER ECONOMIST QUARTERLY REPORT



Dr. Prachaya Jumpsut, Managing  
Director of The Rubber Economist

## The Rubber Economist Quarterly Report

### Highlights

- In 2018, world rubber consumption grew for the ninth consecutive year. This, however, may not last as our forecast points to a decline in 2019 for the first time since the financial crisis.
- Last year Latin America was the only region to show a decline in consumption, but this year all regions except Asia/Pacific may show a negative growth.
- Asia/Pacific increased its dominance by increasing its share to 65% of the world total but mainly from the sharp growth in other Asian countries not China, which is expected to continue to slowdown this year.
- Consumption of NR outpaced SR again last year and as a result SR shares dropped by another percentage point - further fall is expected.
- Vietnam increased NR consumption sharply in 2018, putting her, along with seven other Asian countries as one of the world's top ten largest NR consumers.
- India, Thailand and Malaysia increased SR consumption sharply but China and most other countries showed a slow growth or a decline.
- Sharp increase in Thailand and smaller producers helped world NR output to increase last year despite a decline in Indonesia, India, Malaysia and Sri Lanka.
- Last year, the slowdown in growth of SR output continued for the third straight year. Output may fall even further before improving again.
- Slow grow was the result of a sharp fall in Latin America and Africa despite increases in other regions. Asia/Pacific's global share increased to 53.1%.
- Sharp growth in India put her in the top 10, making it the 5th largest SR producer amongst the Asian countries. Thailand, Malaysia and Indonesia grew rapidly as well.
- Unlike in 2017 when we had a double digit growth rate, last year the value of the global rubber industry increased by less than 1%.
- Despite consumption increasing more rapidly than production, there was an excess supply, pushing global NR stocks to increase for the third consecutive year – this may continue over the next few years.
- It is the opposite situation for SR, there has been an excess demand and lowered global stocks, but a surplus may return.
- The years 2019-2021 may see a rise in the stocks to consumption ratio for both NR and SR, but the impact on prices may be more for the former.
- NR prices rose sharply in 2017 before falling almost equally sharply last year to the lowest level since 2005. However, prices have been increasing during the past three months.
- The recent strengthening in NR prices is occurring while SR prices decline.

### Box 1: Ranking of rubber consuming countries, 2018

Table 1 shows the relative sizes of the combined natural rubber (NR) and synthetic rubber (SR) consumption in major countries. The first column shows the ranking of the country, which is listed in the second column; while the third and fourth columns show the absolute size in tonnage and the relative size of global share, respectively. The final column shows the percentage year-on-year growth.

As in 2017, last year also saw the top 10 Rubber consuming countries remain unchanged, i.e. China, USA, India, Japan, Thailand, Malaysia, Indonesia, Brazil, Germany and the Russian Federation. However, despite an increase in the level of consumption, China's market share fell slightly (but has still taken more than 1/3 of the world total), while there was an increase in both the level as well as the global share in all other top-ten countries, with the exception of Brazil and Germany.

The majority of countries in the table have shown an increase in rubber consumption last year. Among the top-ten, despite a relatively slow growth in China, there were sharp growth rates in India, Thailand, Malaysia and Indonesia. The sharpest increase in rubber off take last year was Singapore. There was also quite a sharp increase in some other Asian countries including Vietnam, which moved up to rank 11 last year. Hence, the increasing share in Asia/Pacific as a region as seen in Figure 4 was no surprise.

The sharpest decline in rubber consumption took place in Venezuela. This, together with quite a sharp fall in Brazil and Argentina influenced the decline in the global share of Latin America in 2018. Despite increases in many EU countries, including Spain, Italy and the Czech Republic, there were declines in Germany, France, Poland, UK and the Netherlands - hence the consumption of the EU as a whole showed only a marginal positive growth rate. The sharp increase in Africa was due solely to the sharp increase in South Africa.

**Table 1: Rubber consumption, 2018 Ranking**

	Country	000 tonnes%	share%	growth
1	(1) China	9854.0	33.80	2.23
2	(2) U S A	2904.0	9.96	3.03
3	(3) India	1915.0	6.57	12.79
4	(4) Japan	1590.7	5.4	61.99
5	(5) Thailand	1335.8	4.58	6.10
6	(6) Malaysia	1047.6	3.59	7.11
7	(7) Indonesia	1026.7	3.52	6.16
8	(8) Brazil	859.7	2.95	-8.54
9	(9) Germany	822.9	2.82	-4.62
10	(10) Russian Fed	776.5	2.66	7.70
11	(12) Vietnam	550.5	1.89	9.05
12	(11) Rep of Korea	544.3	1.87	-14.40
13	(13) Taiwan	486.5	1.67	-3.43
14	(14) Turkey	479.4	1.64	5.50
15	(15) Spain	391.2	1.34	1.03
16	(16) Mexico	378.8	1.30	6.11
17	(17) Poland	373.7	1.28	-0.05
18	(19) Italy	367.1	1.26	14.97
19	(18) France	340.1	1.17	-3.68
20	(20) Canada	312.5	1.07	2.53
21	(21) Czech Rep	214.0	0.73	7.00
22	(23) Romania	196.5	0.67	3.04
23	(24) Sri Lanka	181.6	0.62	1.51
24	(25) Slovakia	179.0	0.61	3.89
25	(22) U K	176.9	0.61	-7.72
26	(27) Belgium/Lux	159.4	0.55	2.51
27	(26) Hungary	156.9	0.54	-1.94
28	(31) South Africa	129.9	0.45	29.51
29	(28) Netherlands	120.0	0.41	-8.12
30	(32) Iran I	11.4	0.38	15.80
31	(29) Portugal	103.1	0.35	-4.71
32	(30) Argentina	70.2	0.24	-30.77
33	(35) Egypt	66.0	0.23	14.58
34	(38) Slovenia	65.1	0.22	19.23
35	(34) Belarus	59.0	0.20	-6.50
36	(36) Philippines	58.8	0.20	5.00
37	(39) Pakistan	53.3	0.18	15.12
38	(33) Serbia	53.2	0.18	-38.85
39	(37) Australia	50.2	0.17	-9.87
40	(42) Colombia	43.9	0.15	10.86
41	(40) Chile	43.5	0.15	-3.55
42	(41) Ukraine	38.7	0.13	-13.42
43	(43) Sweden	37.4	0.13	-2.35
44	(44) Peru	33.1	0.11	-3.50
45	(45) Austria	31.3	0.11	1.29
46	(46) Finland	30.7	0.11	4.07
47	(50) Singapore	28.4	0.10	75.31
48	(48) Israe	122.7	0.08	2.95
49	(49) Hong Kong	22.3	0.08	6.70
50	(47) Switzerland	21.3	0.07	-6.58
51	(51) Nigeria	14.7	0.05	-2.65
52	(52) Bangladesh	13.5	0.05	1.50
53	(53) Greece	10.7	0.04	-10.08
54	(54) Denmark	9.6	0.03	3.23
55	(56) Guatemala	7.2	0.02	-5.26
55	(57) Bulgaria	7.2	0.02	-1.37
57	(58) New Zealand	7.1	0.02	1.43
58	(59) Rep of Ireland	4.2	0.01	-17.65
59	(60) Norway	2.7	0.01	-15.63
60	(55) Venezuela	2.5	0.01	-72.83
61	(61) Cambodia	2.4	0.01	0.00
	TOTAL	29155	100.00	2.52

Notes: 1. Figures in brackets in the ranking column correspond to 2017. Bold figures indicate an improvement in 2018 over 2017

### Box 2: Ranking of NR/SR consuming countries, 2018

Tables 2 and 3 show the breakdown by countries of natural rubber (NR) and synthetic rubber (SR) consumption in 2018. As with the previous table on total rubber consumption: the table below shows the ranking, the country, the amount of consumption, the global share and the annual growth rate.

First for NR, the top ten are the same as total rubber consumption, with the exception of Brazil and the Russian Federation, where we have the Republic of Korea and Vietnam. China, India, USA, Thailand, Japan, Indonesia, Malaysia, Brazil, the Republic of Korea and Vietnam remain the same. NR 'preference factor', which is influenced by proximity to the type of raw rubber and/or rubber goods produced, resulted in 8 out of the 10 largest NR consumers being in Asia.

Vietnam's NR consumption grew the sharpest among the top ten, which helped it to surpass Germany, which was the tenth in 2017 but showed a decline in consumption last year. The sharpest growth rate in NR consumption comes from Belgium/Luxembourg and South Africa while the sharpest decline was Venezuela and Serbia.

With a relatively slower growth, the share of China fell slightly, which helps to raise the shares of other countries, including India, USA, Thailand, Malaysia and Vietnam. Even with a decline in global market share to less than 40%, it is easy to see why China has a strong influence on NR trading. The next largest NR consumer is India, which has a global share of less than 9%.

The top ten largest SR consuming countries are exactly the same as the top ten in total rubber consumption, but with a difference in the ranking i.e. China, USA, Japan, India, the Russia Federation, Germany, Thailand, Malaysia, Brazil and Indonesia.

Growth in SR consumption was generally slower than NR consumption. Among the top ten countries, India, Malaysia, Indonesia and the Russia Federation grew relatively fast and hence their rankings improved last year. The most rapid growth was seen in Singapore, South Africa and Italy and they themselves have increased by a few rankings. The sharpest fall was seen in Venezuela, Argentina and the Republic of Korea.

The influence of China on the SR market is relatively small as her share of global consumption was just over a quarter of the world total. The second largest SR consumer, USA, took quite a large global share, i.e. 12%.

The influence of China on the international NR market in comparison to SR market can also be seen from the fact that her global share of NR imports was 42% and on SR imports only 15%.

Most countries import rubber for domestic consumption but there are a few countries which re-export e.g. Malaysia, Vietnam and Belgium/Luxembourg.

**Table 2: NR consumption, 2018 Ranking**

	Country	000tonnes	% share%	growth
1	(1) China	5504.3	39.85	3.84
2	(2) India	1219.8	8.83	12.71
3	(3) U S A	1011.5	7.32	5.62
4	(4) Thailand	751.8	5.44	9.70
5	(5) Japan	706.0	5.11	3.98
6	(6) Indonesia	625.3	4.53	2.91
7	(7) Malaysia	515.4	3.73	5.49
8	(8) Brazil	404.9	2.93	1.84
9	(9) Rep of Korea	367.0	2.66	-4.50
10	(11) Vietnam	250.4	1.81	15.98
11	(10) Germany	236.3	1.71	-1.05
12	(13) Turkey	200.3	1.45	13.81
13	(12) Spain	176.1	1.27	-4.03
14	(17) Canada	138.1	1.00	10.04
15	(16) Sri Lanka	134.9	0.98	5.31
16	(14) Italy	129.8	0.94	-1.14
17	(18) Russian Fed	124.6	0.90	6.04
18	(15) France	121.5	0.88	-5.59
19	(21) Mexico	113.9	0.82	10.15
20	(20) Poland	109.0	0.79	5.31
21	(19) Taiwan	96.8	0.70	-11.68
22	(22) Romania	82.2	0.60	-0.60
23	(24) Slovakia	81.8	0.59	9.07
24	(23) Czech Rep	74.0	0.54	-2.12
25	(25) Iran	69.4	0.50	20.28
26	(26) Hungary	51.5	0.37	7.07
27	(28) Belgium/Lux	51.0	0.37	30.77
28	(29) South Africa	47.5	0.34	24.67
29	(30) Philippines	36.1	0.26	5.87
30	(27) Argentina	33.3	0.24	-15.91
31	(31) Portugal	29.8	0.22	-1.97
32	(32) U K	25.1	0.18	-11.62
33	(35) Egypt	24.5	0.18	15.02
34	(34) Pakistan	24.0	0.17	10.09
35	(36) Colombia	22.8	0.17	7.55
36	(37) Netherlands	21.2	0.15	10.99
37	(39) Slovenia	18.1	0.13	19.87
38	(38) Belarus	15.3	0.11	-17.30
39	(41) Chile	14.3	0.10	-0.69
40	(40) Peru	13.2	0.10	-12.00
41	(43) Finland	12.5	0.09	-1.57
42	(42) Nigeria	12.3	0.09	-3.15
43	(33) Serbia	10.1	0.07	-62.73
44	(45) Israel	9.5	0.07	7.95
45	(46) Bangladesh	8.7	0.06	2.35
46	(44) Austria	7.5	0.05	-19.35
47	(47) Australia	7.1	0.05	0.00
48	(48) Sweden	6.1	0.04	-1.61
49	(49) Guatemala	4.8	0.03	-5.88
50	(51) Hong Kong	3.7	0.03	-11.90
51	(52) Ukraine	2.6	0.02	-16.13
52	(53) Greece	2.4	0.02	0.00
53	(53) Cambodia	2.4	0.02	0.00
54	(50) Venezuela	1.6	0.01	-62.79
55	(55) Singapore	1.2	0.01	0.00
55	(55) Bulgaria	1.2	0.01	0.00
57	(55) Switzerland	1.1	0.01	-8.33
57	(58) New Zealand	1.1	0.01	10.00
59	(59) Denmark	0.7	0.01	-12.50
60	(60) Rep of Ireland	0.4	0.00	0.00
61	(61) Norway	0.1	0.00	0.00
	TOTAL	13813	100.00	4.62

Notes: 1. Figures in brackets in the ranking column correspond to 2017 2. Bold figures indicate an improvement in 2018 over 2017

### Box 3: Ranking of NR producing countries, 2018

The top ten largest NR producing countries in 2018 are Thailand, Indonesia, Vietnam, China, India, Cote d'Ivoire, Malaysia, Myanmar, Cambodia and Brazil (Table 5). The increase in the global output in 2018 came about even when there was a decline in Indonesia, India, Sri Lanka, Malaysia and Bolivia. This is due to quite a sharp increase in the top ranked, Thailand as well as continued growth in smaller Asian and African producers. Thailand has now taken about a 37% share of global output while Malaysia's share fell to 4%.

Malaysia's output fell the sharpest and is now only the 7th in the ranking. Despite a decline, India has moved up to the 5th spot, while a continued increase in Cote d'Ivoire put her as the 6th largest NR producing country. The sharpest increase came from Laos, Cambodia and Liberia. The steady increase in Laos has put her into the 13th place after a production period of just over a decade.

Note that while the world NR output increased by 2.4%, exports rose only marginally by 0.2%. This means that most output is consumed domestically within the producing countries themselves or/and increase in local stockpiles. Thailand's output increased almost 8% but it exported less than 2%. The opposite end, Vietnam output grew less than 2% but exports jumped more than 13%; Malaysia's output declined more than 18% but exports fell more than 1%. There was quite a sharp increase in exports from African countries, in particular Gabon and Liberia as well as from Cambodia, Myanmar and Laos.

### Box 4: Pyrolysis of natural rubber for production of biofuel and biochemicals

According to Associate Professor Dr. Adisak Pattiya Faculty of Engineering, Mahasarakham University, Thailand, since the price of natural rubber in Thailand and other countries around the world has plummeted, this has affected rubber farmers who are suffering from insufficient income. In Thailand, rubber farmers have appealed to the government to urgently come up with measures to mitigate the problems. One way to do this is to expand the applications of the natural rubber end products. It is known that used or waste tires can be pyrolysed in a controlled environment to convert the solid rubber into liquid crude oil and this oil can be refined to produce gasoline, diesel and other fuels. However, the waste tires contain sulfur components that deteriorate the production process and products. We therefore propose a new pathway to produce biofuel and biochemicals from pyrolysis of natural rubber latex in the liquid phase. Initial research has shown that it is possible to obtain rubber crude pyrolysis liquid with up to an 80 % yield. It is known that natural rubber latex collected from a tabbed rubber tree cannot be easily combusted as tested in the laboratory. After the conversion process via pyrolysis technique, we obtain a dark brown liquid that can be burned easily. For further information please contact Dr Adisak at [adisak.p@msu.ac.th](mailto:adisak.p@msu.ac.th)

**Table 2: NR consumption, 2018 Ranking**

	Country	000tonnes	% share%	growth
1	(1) China	4349.7	28.35	0.26
2	(2) U S A	1892.5	12.34	1.70
3	(3) Japan	884.7	5.77	0.47
4	(5) India	695.2	4.53	12.91
5	(6) Russian Fed	651.9	4.25	8.02
6	(4) Germany	586.6	3.82	-5.99
7	(7) Thailand	584.0	3.81	1.80
8	(9) Malaysia	532.2	3.47	8.72
9	(8) Brazil	454.8	2.96	-16.15
10	(11) Indonesia	401.4	2.62	11.66
11	(10) Taiwan	389.7	2.54	-1.14
12	(12) Vietnam	300.1	1.96	3.88
13	(13) Turkey	279.1	1.82	0.25
14	(15) Mexico	264.9	1.73	4.46
15	(14) Poland	264.7	1.73	-2.11
16	(19) Italy	237.3	1.55	26.22
17	(17) France	218.6	1.42	-2.58
18	(18) Spain	215.1	1.40	5.59
19	(16) Rep of Korea	177.3	1.16	-29.53
20	(20) Canada	174.4	1.14	-2.73
21	(21) U K	151.8	0.99	-7.04
22	(22) Czech Rep	140.0	0.91	12.54
23	(26) Romania	114.3	0.75	5.83
24	(23) Belgium/Lux	108.4	0.71	-6.95
25	(24) Hungary	105.4	0.69	-5.81
26	(25) Netherlands	98.8	0.64	-11.39
27	(27) Slovakia	97.2	0.63	-0.10
28	(29) South Africa	82.4	0.54	32.48
29	(28) Portugal	73.3	0.48	-5.78
30	(36) Slovenia	47.0	0.31	18.99
31	(32) Sri Lanka	46.7	0.30	-8.07
32	(34) Belarus	43.7	0.28	-2.02

Country	000tonnes	% share%	growth
33 (33) Australia	43.1	0.28	-11.32
34 (31) Serbia	43.1	0.28	-28.05
35 (37) Iran	42.0	0.27	9.09
36 (38) Egypt	41.5	0.27	14.33
37 (30) Argentina	36.9	0.24	-40.29
38 (35) Ukraine	36.1	0.24	-13.22
39 (39) Sweden	31.3	0.20	-2.49
40 (41) Pakistan	29.3	0.19	19.59
41 (40) Chile	29.2	0.19	-4.89
42 (49) Singapore	27.2	0.18	81.33
43 (43) Austria	23.8	0.16	10.19
44 (42) Philippines	22.7	0.15	3.65
45 (46) Colombia	21.1	0.14	14.67
46 (43) Switzerland	20.2	0.13	-6.48
47 (45) Peru	19.9	0.13	3.11
48 (48) Hong Kong	18.6	0.12	11.38
49 (47) Finland	18.2	0.12	8.33
50 (50) Israel	13.2	0.09	-0.38
51 (52) Denmark	8.9	0.06	4.71
52 (51) Greece	8.3	0.05	-12.63
53 (53) Bulgaria	6.0	0.04	-1.64
53 (54) New Zealand	6.0	0.04	0.00
55 (56) Bangladesh	4.8	0.03	0.00
56 (57) Rep of Ireland	3.8	0.02	-19.15
57 (58) Norway	2.6	0.02	-16.13
58 (59) Guatemala	2.4	0.02	-4.00
58 (60) Nigeria	2.4	0.02	0.00
60 (55) Venezuela	0.9	0.01	-81.63
61 (61) Cambodia	0.0	0.00	0.00
TOTAL	15342	100.00	0.71

Notes: 1. Figures in brackets in the ranking column correspond to 2017 2. Bold figures indicate an improvement in 2018 over 2017

### Box 5: Ranking of SR producing countries, 2018

The top ten largest synthetic rubber (SR) producing countries in 2018 have changed slightly from the previous year, i.e. China, USA, the Republic of Korea, the Russian Federation, Japan, Germany, Taiwan, France, India and Singapore (Table 7). Brazil's output fell sharply while almost an equally sharp increase in India has lifted the latter into the top ten, replacing the former.

The Republic of Korea, Japan, Germany and France joined Brazil to show a decline in their output last year. However, the sharpest decline was seen in Austria and Romania. The sharpest increase was seen in Indonesia, Belgium and Serbia. The increase in Indonesia and Belgium has lifted their ranking as well. Similarly for Thailand, which has moved up to number 11th.

Unlike the global share for consumption or NR production, SR shares spread more evenly among the producers. The largest producing country, China, produced only about 20% of the global output.

Despite a decline in production, the Republic of Korea shows an increase in SR exports and remains the top SR exporter. Taiwan and China also increased exports last year and have moved up in their export ranking. The sharp decline in the output also reflects in a sharp fall in SR exports from Brazil.

**Table 5: NR production, 2018 Ranking**

	Country	000tonnes	% share%	growth
1	(1) Thailand	5145.23	7.10	7.75
2	(2) Indonesia	3486.42	5.14	-0.36
3	(3) Vietnam	1110.0	8.00	1.49
4	(4) China	810.5	5.84	1.59
5	(6) India	649.0	4.68	-8.98
6	(7) Cote d' Ivoire	624.2	4.50	3.38
7	(5) Malaysia	603.2	4.35	-18.54
8	(8) Myanmar	270.0	1.95	8.39
9	(9) Cambodia	220.1	1.59	13.86
10	(10) Brazil	192.0	1.38	2.67
11	(11) Philippines	110.6	0.80	8.22
12	(12) Guatemala	105.9	0.76	5.69
13	(14) Laos	101.5	0.732	9.63
14	(13) Sri Lanka	81.4	0.59	-2.05
15	(15) Liberia	71.9	0.52	14.13
16	(16) Cameroon	56.7	0.4	16.98
17	(16) Nigeria	56.2	0.41	6.04
18	(18) Ghana	41.3	0.30	11.62
19	(19) Gabon	23.5	0.17	10.85
20	(20) Bangladesh	22.5	0.16	7.14
21	(21) Mexico	18.2	0.13	0.55
22	(22) Guinea	17.2	0.12	1.18
23	(23) D R of Congo	15.1	0.11	7.09
24	(24) Colombia	12.6	0.0	95.00
25	(25) PNG5	.7	0.04	0.00
26	(25) Bolivia	5.2	0.04	-8.77
	TOTAL	13869	100.00	2.35

Notes: 1. Figures in brackets in the ranking column correspond to 2017. Bold figures indicate an improvement in 2018 over 2017

**Table 7: SR production, 2018 Ranking**

	Country	000tonnes	% share%	growth
1	(1) China	3078.7	20.17	1.88
2	(2) USA	2347.7	15.38	1.82
3	(3) Rep of Korea	1591.51	0.43	-2.01
4	(5) Russian Fed	1582.11	0.36	2.57
5	(4) Japan	1552.2	10.17	-4.23
6	(6) Germany	828.8	5.43	-4.09
7	(7) Taiwan	782.0	5.12	5.75
8	(8) France	482.6	3.16	-9.15
9	(11) India	374.4	2.45	28.00
10	(10) Singapore	307.4	2.01	1.42
11	(12) Thailand	271.6	1.78	6.09
12	(9) Brazil	253.3	1.66	-32.40
13	(13) Italy	221.4	1.45	5.48
14	(14) Poland	211.1	1.38	4.87
15	(15) Czech Rep	174.0	1.14	3.26
16	(20) Belgium	169.1	1.11	64.98
17	(16) Mexico	160.9	1.05	0.31
18	(17) UK	157.3	1.037	.59
19	(18) Malaysia	149.1	0.98	6.65
20	(19) Canada	112.6	0.74	-3.01
21	(24) Indonesia	102.1	0.671	15.86
22	(22) Spain	94.2	0.62	28.86
23	(21) Netherlands	94.0	0.62	-4.57
24	(25) Iran	48.0	0.31	1.69
25	(23) South Africa	45.5	0.30	-6.57
26	(27) Serbia	35.6	0.23	32.34
27	(26) Argentina	30.9	0.20	-7.21
28	(28) Austria	5.0	0.03	-54.55
29	(29) Romania	0.7	0.00	-58.82
	TOTAL	15264	100.00	1.03

Notes: 1. Figures in brackets in the ranking column correspond to 2017. Bold figures indicate an improvement in 2018 over 2017

### Box 6: The aggregate rubber economy in 2018

The Gross National Income (GNI) of the rubber industry takes into account all rubber industry stakeholders including tyre or general rubber product manufacturers as well as raw material suppliers and also captures the valued add, e.g. other materials, labour, capital, etc. The GNI of the rubber industry can be calculated using the total value of rubber end uses less the cost of imported rubber plus any natural rubber (NR) and/or synthetic rubber (SR) exports that are produced domestically.

Table 9 shows the calculation of the value of the rubber industry in 2018 for all rubber consuming countries in millions of US\$ assuming the average annual price of NR to be 1,615 US\$/tonne and for SR 2,552 US\$/tonne. These prices were the annual average prices of NR and SR in 2018 respectively.

Unlike in 2017 when we had a double digit growth rate for the world and for most countries, last year the value of the global rubber industry increased by less than 1% to US\$424.8 billion and many countries show a sharp fall. The reason is that the decline in NR price outweighs the increase in SR price. Those countries involved with SR are more likely to show a positive growth in their GNI. For the NR producing countries, unless their output grew sharply, it's very likely that their GNI would have declined last year.

The top ten largest GNI in 2018 are China, USA, Thailand, Japan, India, Indonesia, the Russian Federation, Malaysia, Germany and Brazil.

**Table 9: The rubber industry, 2018 Ranking**

	<b>Country</b>	<b>Million US\$</b>	<b>% share</b>	<b>% growth</b>
1	(1) China	128167	30.17	-0.22
2	(2) U S A	44672	10.52	3.65
3	(3) Thailand	25397	5.98	-2.12
4	(4) Japan	24446	5.75	1.24
5	(5) India	24392	5.74	6.85
6	(6) Indonesia	1818	54.28	-4.89
7	(7) Russian Fed	1522	73.58	10.58
8	(8) Malaysia	1448	93.41	5.36
9	(9) Germany	1328	93.13	-2.66
10	(10) Brazil	11843	2.79	-12.30
11	(11) Rep of Korea	10369	2.44	-12.24
12	(12) Taiwan	8893	2.0	92.15
13	(13) Vietnam	8892	2.0	94.16
14	(14) Turkey	6124	1.44	4.01
15	(15) Poland	5636	1.33	1.80
16	(17) Mexico	5597	1.32	6.90
17	(19) Italy	5230	1.23	20.35
18	(18) Spain	5195	1.22	1.88
19	(16) France	5118	1.20	3.89
20	(20) Canada	4292	1.0	10.67
21	(21) Czech Rep	3302	0.78	8.55
22	(22) U K	2788	0.66	-4.91
23	(23) Romania	2528	0.60	2.02
24	(27) Belgium-Lux	2269	0.53	6.13
25	(24) Sri Lanka	2261	0.53	-6.49
26	(25) Slovakia	2255	0.53	1.85
27	(26) Netherlands	2041	0.48	-6.38
28	(28) Hungary	1907	0.45	-3.32
29	(30) South Africa	1842	0.43	27.92
30	(32) Iran	1410	0.33	7.59
31	(29) Portugal	1400	0.33	-3.20
32	(36) Singapore	1155	0.27	34.72
33	(34) Cote d'Ivoire	1005	0.24	-7.84
34	(31) Argentina	967	0.23	-31.63
35	(40) Slovenia	876	0.21	20.57
36	(33) Serbia	849	0.20	-31.16
37	(35) Philippines	838	0.20	-5.09
38	(39) Egypt	837	0.20	9.94

	<b>Country</b>	<b>Million US\$</b>	<b>% share</b>	<b>% growth</b>
39	(37) Belarus	817	0.19	-3.92
40	(41) Pakistan	751	0.18	10.14
41	(38) Australia	717	0.17	-7.94
42	(43) Chile	584	0.14	-3.04
43	(42) Ukraine	577	0.14	-9.09
44	(44) Colombia	557	0.13	7.04
45	(45) Sweden	510	0.12	0.92
46	(46) Peru	436	0.10	-2.97
47	(47) Austria	420	0.10	4.31
48	(49) Finland	383	0.09	6.97
49	(48) Cambodia	378	0.09	-0.19
50	(50) Switzerland	307	0.07	-1.70
51	(51) Israe	129	40.07	1.71
52	(53) Myanmar	276	0.06	2.10
53	(52) Nigeria	245	0.06	-9.72
54	(54) Hong Kong	224	0.05	0.41
55	(57) Laos	164	0.04	13.535
6	(55) Guatemala	158	0.04	-10.02
57	(56) Greece	148	0.03	-9.30
58	(58) Denmark	138	0.03	8.66
59	(60) Liberia	116	0.03	-0.05
60	(61) New Zealand	103	0.0	25.01
61	(61) Cameroon	92	0.02	-6.30
62	(63) Bulgaria	89	0.0	21.66
63	(66) Gabon	68	0.027	5.16
64	(65) Ghana	67	0.02	-2.24
65	(64) Ireland	61	0.01	-14.70
66	(59) Venezuela	28	0.01	-76.39
67	(67) Guinea	28	0.01	-11.39
68	(68) D R of Congo	24	0.01	-4.86
69	(69) Bangladesh	23	0.01	-4.33
70	(70) PNG	11	0.00	-11.07
	<b>WORLD</b>	<b>424776</b>	<b>100.00</b>	<b>0.54</b>

Notes: 1. Figures in brackets in the ranking column correspond to 2017. Bold figures indicate an improvement in 2018 over 2017. NR prices are assumed to be 1,615 \$/tonne and SR 2,552 \$/tonne. 4. Assuming the final value of the rubber goods, including all the value added is 7 times the cost of rubber used.

## Auto production grew over 8% in April-Feb: SIAM

●The total number of automobiles produced from April 2018 to February 2019 stood at 2,87,35,269, a growth of 8.76% over the April 2017 to February 2018 period, according to data from the Society of Indian Automobile Manufacturers (SIAM). However, the number of passenger cars produced in the country declined by 0.38%. For February 2019 alone, domestic sales of passenger cars registered a fall of 4.33%. The total passenger vehicle sector saw a fall of 1.11% (including utility vehicles and vans). Passenger vehicle exports also fell by 17.25% for the month, as compared to last year.

The decline for February 2019 compared to February 2018 was not just confined to passenger vehicles. Domestic sales for two-wheelers fell by 4.22%, three-wheelers declined by 4.14% and commercial vehicles decreased by 8.77%. Analysts believed that the upcoming elections could be a dampening factor affecting automobile sales.

Passenger car exports for 2018-19 also declined by a steep 12.21% as compared to 2017-18. The total number exported in 2018-19 was 4,61,891, as opposed to 5,26,124 the previous year. However, goods carriers saw a healthy export increase of 31.28%.

Three-wheelers also recorded healthy export figures, with both people carriers and goods carriers seeing an increase in exports by over 48%. Domestic sales for passenger cars increased by 2.91%, with total sales for 2018-19 pegged at over 20 lakh cars.

## Citroen will drive PSA's India return; first rollout by 2021

● Citroen will be Groupe PSA's brand for the Indian car market, said Carlos Tavares, Chairman of the Managing Board, recently.

This announcement was made during the course of a webcast press conference in Paris to discuss the French carmaker's annual results for 2018.

## Yamaha expects India to become its largest production base in 5 years

● Japanese auto major Yamaha Motor Company (YMC) expects India to overtake Indonesia to emerge as its largest base in terms of production output in the next five years.

Yamaha Motor India's group chairman Motofumi Shitara stated that the key markets of Indonesia and Vietnam are nearing saturation point and the company expects India to emerge as its largest market by 2024.

"India is priority number one for us worldwide. Because in Indonesia, Vietnam, the market is saturating a little bit. India is different. It has a huge population, the number of young customers are increasing ... We aim to have production volume of 2.5 million units in India in the next five years," said Shitara. The company currently manufactures 1.7 million units for local sales as well as exports in Indonesia.

Shitara admits that the Indian two-wheeler market has been facing headwinds due to the increase in insurance costs. Uncertainty ahead of the general elections, too, has dampened consumer sentiment. But he believes the slowdown in demand is temporary.

"India sells more than 20 million two-wheelers annually and (the numbers are) growing. Our company's market share is in single digits. We want to improve this. There is a lot of opportunity," added Shitara.

Two-wheeler sales in India increased 6.95% to 19,740,727 units till February this fiscal. In the same period, India Yamaha Motor's sales remained largely flat at around 732,006 units. The company additionally exported 226,010 units.



Motofumi Shitara, group chairman of Yamaha Motor India

Tavares said the building blocks were already in place for PSA in India, which included an "efficient powertrain plant and frugal vehicle plant". The job on hand was to build the distribution network and pave the way for a new global family of "disruptive products" which will debut by 2021.

According to Tavares, Citroen as a brand epitomised consistency across time as well as in design and pricing. From PSA's point of view, it is being positioned as the comfort brand which is both trendy and modern that will ideally strike a chord with India's gen-next buyers.

The company has joined hands with the CK Birla Group for its automotive project which involves a powertrain facility in Hosur and a car plant in Tiruvallur near Chennai. The decision to launch the Citroen brand perhaps also has to do with burying

the Peugeot legacy of over two decades earlier when the company abruptly shut down its operations in end-1997.

## US auto industry analysts warn of slowdown to 16.8 million units in 2019

● Sales for the US auto industry in 2019 are expected to fall to 16.8 million units, according to the Center for Automotive Research (CAR). The non-profit organisation is predicting sales to stay stable at 16.5 million in 2020 and 16.4 million in 2021, before rising to 17.3 million in 2023.

Kristin Dziczek of CAR cited various positive factors for boosting US sales to a high level, such as moderate economic growth for 2019, low unemployment rates and oil prices, high consumer confidence and

nominal wage growth.

Analysts for the US auto industry are aware their forecasts can be rendered completely inaccurate, depending on if the Trump administration implements tariffs on imports of automobiles and auto parts into the country. In February, the US Department of Commerce issued a report on whether there is a national security threat on imported autos and auto parts, which would enable the tariffs under Section 232. The report's findings were not made public.

CAR released a study on the potential impact of those tariffs and evaluated six possible scenarios, such as 25% across-the-board tariffs on all auto and auto parts imports from all countries. Depending on the chosen policy, the impact could include a rise in the price of all new vehicles by as much as \$6,875.

Tariffs already in place which impact the US auto industry include a 25% steel tariff, a 10% aluminum tariff and China tariffs at an effective rate for the auto piece around 12%

### Ghoshn leaves Japan jail after \$9 million bail

●Ousted Nissan boss Carlos Ghosn walked out of a Tokyo prison on a \$9 million bail on March 6, slipping past reporters in a face mask and moving closer to mounting a defense against financial misconduct charges that he has called "meritless".

Ghosn, among the world's most prominent auto executives whose dramatic rescue of Nissan two decades ago made him a celebrity in the industry and in Japan, was barely recognisable as he left Tokyo Detention House where he had been detained for more than 100 days in a small cell with no heating.

Surrounded by security guards and dressed in a workman's uniform and a blue cap, Ghosn's face was obscured by thick glasses and the surgical-type mask, a far cry from his usual tailored suits. He managed to avoid many of the reporters camped at the site before being whisked away in a small Suzuki van.

Ghosn paid the 1 billion yen (\$9 million) bail, among the highest ever in Japan, after the Tokyo District Court rejected a last-ditch appeal by

### German car industry to invest \$45 billion in electric vehicles

●Germany's automotive industry will invest over 40 billion euros (\$45 billion) in electric vehicles over the next three years to triple the number of models vying for buyers, the head of the VDA car industry association said.

The plan is pivotal to reach ambitious goals in the European Union to reduce carbon dioxide emissions and requires the expansion of charging infrastructure, VDA President Bernhard Mattes said in a statement ahead of next week's Geneva car show.

"The ramp-up of electric mobility is coming in Europe. This also demands the appropriate regulatory conditions — right across Europe," Mattes said.

prosecutors to keep him in jail.

Ghosn, also the former chairman of Renault and Mitsubishi Motors, has agreed to strict bail conditions and given assurances he will remain in Tokyo, surrender his passport to his lawyer and submit to extensive surveillance.

### Ambassador to make a comeback?

● Interestingly, PSA has also acquired the rights for use of the Ambassador brand from the CK Birla Group, which stopped production of this model six years ago.

It now remains to be seen if the brand will be reused with the forthcoming Citroen line-up. Ownership of the Ambassador brand would perhaps translate into an opportunity in its India innings.

"We have to eventually see if it makes sense to the Indian customer. The Ambassador is an iconic brand and warms the hearts of people in India. If there is an opportunity where it brings value to the eyes of customers, we have the brand and can use it," Carlos Tavares had said.

PSA is also betting big on India to boost its presence in the Asia-Pacific region, where Japan is now its most significant market. However, India has clearly lots more to offer in terms of its sheer size and the fact that it is on its way to becoming the third-largest car market globally after China and the US.

It is very likely that PSA will leverage the costing efficiencies developed in its India operations to cater to other emerging markets such as South Africa and Latin America. This will

also ensure economies of scale at the Chennai facility even while the company strives to build its presence here.

Tavares reiterated at the press meet that it was important for PSA to remain agile and efficient in a world that was rapidly turning chaotic, an obvious reference to challenges such as Brexit, trade wars and a weakening Chinese market. By working as a team, he was confident PSA could become more agile and adapt to a new world with different expectations.

According to Tavares, the DNA of the company was in getting things done efficiently and doing more with less. "We need to boost the creative spirit and moving forward is the only thing that matters," he said.

### German auto industry to invest \$68Bn in EVs, data & mobility

● Over the next three years, VDA (the German Association of the Automotive Industry or Verband der Automobilindustrie), says its members are committed to investing 60 billion euros (about \$68 billion) into electrification and vehicular autonomy.

The EU is resolute in its embrace of electrification, in a bid to reduce emissions and modernise roadways. VDA President Bernhard Mattes said that over the next three years, the German auto industry will invest over 40 billion euros in electric mobility and 18 billion euros for digitalisation, and the development of networked or automated vehicles. The country's auto industry expects to offer 100 EV models to the public by the end

of that period.

While the EU member governments have backed the plan strongly, the target is challenging. Despite robust government encouragement, the plan is an ambitious one, coming as it does against a backdrop of slowing auto sales across the world. Most industry analysts feel EV growth is not yet on track to overtake internal combustion models until around 2035.

Electrification is just one element of the investment plan- mobility is a blanket term used to denote any non-traditional businesses within the industry. It indicates autonomous development and electrification, but can also include ride-sharing, connectivity, data accumulation and more.

Matts explained that auto manufacturers are becoming manufacturers and mobility service providers, which requires significant investments, especially in IT and software. Because these technologies are developing very rapidly, new, cross-industry collaborations are also useful and necessary. Nationwide 5G mobile network coverage is essential along all transport routes.

While Germany and a few other large and wealthy European countries are expected to have a significantly higher share of EVs among new registrations compared to the EU average, the VDA believes Europe "must" expand the EV charging infrastructure and continue incentivising electric vehicle purchases, in order for electrification of cars to rise in the rest of the EU.

Stringent emission regulations and environmental initiatives in the EU have compelled automakers to think creatively. Rival premium automakers Daimler and BMW are cutting R&D costs by collaborating on mobility projects. Volkswagen, too, plans to do the same with Ford, while also collaborating on more traditional products.

Regarding trade negotiations with the US, Mattes spoke of the urgent need to reach a constructive solution at the negotiating table without wasting any time. He pointed out that over half the 750,000 cars the German auto industry produces in the US are exported, and that around 118,000 people are currently employed at the

American plants of German auto manufacturers and suppliers.

## **GM announces \$1.7 billion investment in USA, plans to build e-vehicle factory and add 400 jobs**

●General Motors is announcing plans to add 400 jobs and build a new electric vehicle at a factory north of Detroit.

The company says it will spend US\$300-million at its plant in Orion Township, Mich., to manufacture a Chevrolet vehicle based on the battery-powered Bolt.



GM wouldn't say when the new workers will start or when the new vehicle will go on sale, nor would it say if the workers will be new hires or come from a pool of laid-off workers from the planned closings of four US factories by January.

The company also announced plans Friday to spend about another US\$1.4-billion at US factories with 300 more jobs, but did not release a time frame or details.

GM spokesman Dan Flores said the investment has been in the works for weeks. GM has said it planned to build more vehicles off the underpinnings of the Bolt, which can go an estimated 238 miles on a single electric charge. The company has promised to introduce 20 new all-electric vehicles globally by 2023.

## **Luxury carmakers cut prices in China**

●In an attempt to boost demand at a time when the Chinese government has announced a cut in lower value-added tax, some luxury car brands in the world's largest auto market, including Mercedes-Benz, BMW and Volvo, have cut the prices of their vehicles.

Sales were unimpressive during the first two months of the year, despite the price cuts - further indication that China's auto market is facing weaker demand, following three decades of rapid growth.

In January and February this year, sales of passenger cars in the country were down 9.8% from the same two-month period in 2018. This fall in sales followed a 2.8% year-on-year decline last year - the first fall since 1992.

The Chinese government recently a cut on the VAT (value added tax) on manufacturers from 16% to 13% on April 1, which will eventually benefit consumers, since companies will lower the prices of finished goods. According to the China Passenger Car Association, the lower rate would lead to about a 2% price cut on finished cars. The country's National Development and Reform Commission had announced in January that boosting vehicle sales would be a part of its measures to drive domestic demand.

For the past two decades, China's auto sector has been one of the major driving forces of the booming economy, but in 2018, the economy fell to its slowest growth rate since 1990 last year with GDP expanding at 6.6%.

The major impact of slowing auto demand in China was felt by domestic auto manufacturers, who were also hit by the effects of the US-China trade war, which reduced demand for cars.

## **US auto industry starting to reveal stress: Global Automakers CEO**

●John Bozzella, CEO of the Global Automakers Association, said auto executives in the country are warning of increasing signs of stress in the auto industry after U.S. President Trump continued his General Motors, over the closure of its Lordstown, Ohio, facility.

Uncertainty over the U.S-China trade deal, falling sales compared with the previous year, rising prices and shrinking investment in the sector are all factors which could increase the existing stress.

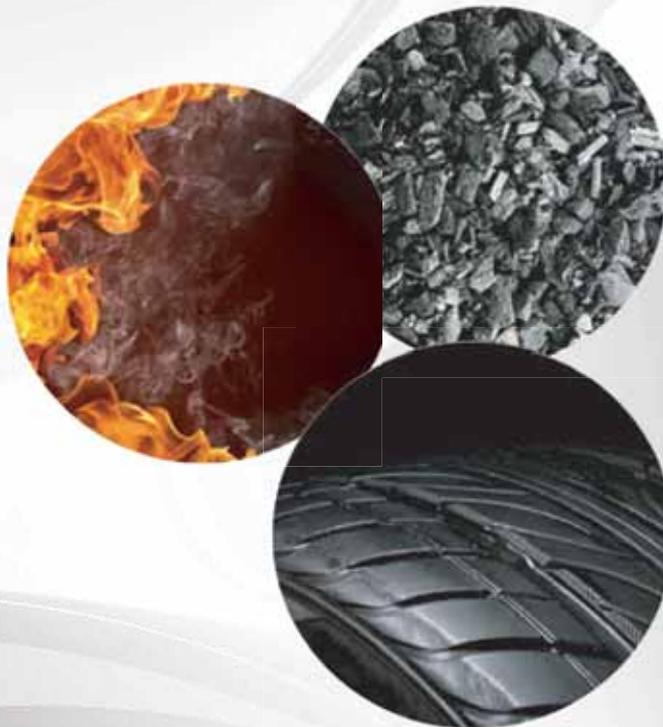


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## Forex kitty swells by over \$3.6 bn to \$405.6 billion

● India's foreign exchange reserves surged by a whopping USD 3.602 billion to USD 405.638 billion in the week to March 15, driven by rise in foreign currency assets.

## Financial Year 2019 exports may be highest ever at \$330 billion

● Amid slowing global merchandise trade growth, India's exports are likely to register an all-time high of \$330 billion this fiscal. "The growth is propelled by higher exports of pharmaceuticals, petroleum and engineering," said an official aware of the details.

India's total outward shipments were \$303.5 billion in 2017-18. The all-time high is \$314.4 billion posted in 2013-14.

March exports are expected to be above \$30 billion, buoyed by strong performances by engineering and pharmaceuticals sectors. Services exports are likely to cross \$200 billion in FY19, taking overall exports to over \$500 billion.

## Fitch cuts India's FY20 GDP growth forecast to 6.8%

● Global credit ratings firm Fitch has trimmed India's growth forecast for the financial year beginning April to 6.8%, citing slow momentum in the manufacturing and agriculture sectors.

The assessment differs from that of its peer S&P, which expects growth to pick up in the quarters ahead.

"While we have cut our growth forecasts for the next fiscal year (FY20, ending in March 2020) on weaker-than-expected momentum, we still see Indian GDP growth to hold up reasonably well, at 6.8% followed by 7.1% in FY21," Fitch said in its global economic outlook issued on March 22.

In a forecast issued in December last year, the rating agency had pegged India's growth rate in FY 19-20 at 7%, which was yet a downgrade from its previous forecast of 7.5% for the same fiscal.

India's GDP growth softened for the second consecutive quarter in the

fourth quarter of 2018, with the economy growing by 6.6% year on year, after increases of 7% and 8% in the third and second quarters, respectively.

Weaker growth momentum has largely been domestically driven, with tightening of credit availability in sector dependent on non-banking financial company (NBFC) credit, the report said.

The Indian economy is expected to do better in FY21, with growth rate expected at 7.1%.

"Banks have been increasing credit to the private sector in recent months, filling the void left by the NBFC," the Fitch report said. It added, "Further capital injections and a looser regulatory stance of the reserve Bank of India have eased (though not removed) the state bank's capital constraints."

The report said another rate cut may be on cards after the RBI adopted a more dovish stance and cut interest rates by 25 basis points in its February monetary policy review.

"We have changed our rate outlook and we now expect another 25 bp cut in 2019, amid protracted below target inflation and easier global monetary conditions than previously envisaged," Fitch said.

The increase in cash transfers to farmers as part of the budget for FY20 is a growth-friendly move on the fiscal side.

"Our benign oil price outlook and our expectations of accelerating food prices in the coming months should support rural households' income and consumption", the report said.

## Indian markets primed for a bull phase: HSBC

● The current market conditions are primed for a bull market supported by strong flows from foreign portfolio investors, said HSBC

"FII's coming back into Indian equities gels well with our overall expectation that current market conditions are primed for a bull market ahead. We expect FII flows to remain strong, as they continue to add to their holdings

## Raghuram Rajan raises doubts about India's 7% GDP growth

● Former RBI Governor Raghuram Rajan on 26<sup>th</sup> March expressed doubts over Indian economy growing at 7% when not enough jobs were being created and said the current cloud over the GDP numbers must be cleared by appointing an impartial body to look at the data.

Rajan, who has also served as Chief Economist at the International Monetary Fund (IMF), said he had no idea what statistics are pointing at currently and "a revamp" was needed "to really figure out what India's true growth rate is".

in Indian equities, which has fallen to a five-year low," said HSBC.

FPIs have returned in a big way to Indian markets recently, thanks to improved chances of ruling coalition coming back to power and US Federal Reserve's extended pause on rates.

## Tatas buy 20% stake in GMR airports unit for Rs.3,520 crore (500 mn)

● Salt-to-software conglomerate Tata Group, which has significant investments in two airlines — Vistara and AirAsia India, has entered the airport business by acquiring 20% stake in GMR Infrastructure's airport vertical.

GMR Infrastructure Ltd (GIL), which operates several airports in the country and internationally, including the ones in Delhi and Hyderabad, on Wednesday, announced a proposed investment of Rs 8,000 crore by Tata Group, an affiliate of GIC, Singapore's sovereign wealth fund and SSG Capital Management (SSG). The binding term-sheet signed with the investors spells out Rs 1,000 crore as equity infusion in GMR Airports Ltd (GAL), while the remaining Rs 7,000 crore is for the purchase of GAL's equity shares from GIL and its subsidiaries.

Tatas will own around 20% of GMR by investing Rs 3,520 crore, GIC will pump in Rs 2,640 crore for a 15% stake and SSG will chip in with Rs 1,760 crore for 10% in the company.

The deal values GMR Airports at over Rs 17,700 crore and post-deal, GIL and subsidiaries will hold around 54% in the airport arm while an employee welfare trust will hold about 2%. GIL plans to take its stake to 62% over the next five years, the company executives said.

## Ultra-rich Indians club set to grow by 39% by 2023: Knight Frank

● India has the highest growth rate of Ultra High Net Worth Individuals (UHNWI) in the world with a 116%

rise in billionaire population during 2013-18.

In the next five years (2018-2023), the country is expected to continue the lead in global growth rankings with 39% growth rate, according to The Wealth Report 2019 by Knight Frank. This increase of 39% would mean about new 750 individuals becoming billionaires. As of 2018, there were 1,947 UHNWIs in India.

During 2017-2018, the UHNWIs in India grew by 7% as against the global average of 4% and the Asian average of 3%.

The survey shows that about 61% of UHNWIs expect their wealth to increase in 2019, thereby showing growth in India's economic growth. However, the Indian UHNWIs prefer the UK and the US to buy properties outside of India and this wealthy lot prefers equity and bonds for investments. For Indian UHNWIs, real estate is the third most invested asset class. Comparatively, Asian UHNWIs prefer real estate, cash and gold as primary investment tools.

Possibly, due to note-ban, the Indian UHNWIs showed least preference for the most liquid of the assets – cash, which saw a dip of 15%.

Shishir Bajjal, chairman & managing director, Knight Frank India, said, "About 63% of the world's UHNWIs saw an exponential surge in their wealth in 2018, clearly showcasing the economic optimism around the globe. Despite a slide in the Indian rupee against the US dollar, India witnessed a growth in UHNWIs due to heightened economic activity and strong performance of equity markets."

The report findings show that Bengaluru is expected to lead the UHNWI growth forecast at 40%, while Mumbai and Delhi share the spot at 38% growth in the next five years, up to 2023.

"Despite the softening momentum in the region's economies, growth prospects in Asia remain favourable in the medium term. While China's economy is expected to slow, emerging markets such as India and the Philippines will deliver some of the strongest growth over the coming years," said Nicholas Holt, head of research, Knight Frank Asia Pacific.

London and New York shared the top ranking for being the wealthiest cities in the world.



While Mumbai ranked 12th, Delhi was on the 49th position and Bengaluru on 71st.

### India's Mukesh Ambani among ten richest globally

●Reliance Industries chairman Mukesh Ambani has broken into the top 10 richest list globally with a networth of \$54 billion, while his younger brother Anil has paled into oblivion having lost over 65% of his net worth, according to a report.

The Hurun Global Rich List 2019 is topped by Amazon chief Jeff Bezos for the second year in a row, while the senior Ambani is placed 10th with a network of Rs 3.83 lakh crore, thanks to a rally in RIL shares, which had topped the Rs 8-lakh-crore-mark last month. Ambani owns almost 52% in Reliance.

Anil Ambani, held in contempt of court by the Supreme Court last week for not paying up Ericsson Rs 540 crore, has lost over \$5 billion, from \$7 billion seven years ago to \$1.9 billion this year, even though both the brothers got off with more or less same amount of inherited wealth.

"Having started off similarly after the break-up of the family wealth, Mukesh added \$30 billion to his wealth in the past seven years, while Anil has lost over \$5 billion during the same period," says the Hurun report.

The other wealthiest Indians are Hinduja group chairman SP Hinduja with networth of \$21 billion, Wipro chairman Azim Premji is at third with a networth of \$17 billion, says the report released Tuesday.

Cyrus S Poonawalla, chairman of the Poonawalla group that run Serum Institute, with a networth of \$13 billion is not only ranked as the fourth richest Indian but also breaks into the top 100 global ranking.

Steel giant ArcelorMittal's Lakshmi Mittal stands at fifth position, followed by Kotak Mahindra's Uday Kotak (\$11 billion), Gautam Adani (\$9.9 billion)

and Sun Pharma's Dilip Shanghvi (\$9.5 billion).

Cyrus Pallonji Mistry and Shapoorji Pallonji Mistry, both with wealth of \$9.5 billion each come in the ninth and the 10th position, respectively, thanks to their 18.4%

holding in the country's largest conglomerate Tata group.

According to the list, Smita Crishna, a third-generation heir of the Godrej family, tops the female billionaire list with a networth of \$6.1 billion, while Kiran Mazumdar Shaw of Biocon is the richest self-made female entrepreneur ranked 671 with a wealth of \$3.5 billion.

"Since 2012, this is for that first time that India has slipped to the fifth rank in the Hurun Global Rich List. An underperforming rupee and a lacklustre stock market resulted in the country losing one-third of the list," Hurun Report India managing director and chief researcher Anas Rahman Junaid said.

The report also points out that media billionaires had a bad year, led by Zee's Subhash Chandra and Sun TV's Kalanithi Maran who lost their networth substantially.

Bezos of Amazon tops the list for the second consecutive year with networth of \$147 billion, which may not hold for long as he is divorcing his wife who owns half of his 16% in the world's largest online retailer.

As per the report, the number of individuals featured in the 2019 edition has come down by 224 to 2,470 from 2,694 in 2018. The cumulative wealth of these 2,470 individuals stood at \$9.5 trillion amounting to 12% of global GDP.

With a wealth of \$96 billion, Microsoft founder Bill Gates ranks second in the global list followed by Warren Buffet, chairman of Berkshire Hathaway with networth of \$88 billion, LVMH's Bernard Arnault at \$86 billion at the fourth slot.

#### RATES OF INDIAN RUPEE

Currency	04.04.2019	18.02.2019	18.12.2018
1 US \$	69.0639	71.3589	71.2520
1 Euro	77.5735	80.8268	80.9010
1 Pound	90.8680	92.2802	89.9910

## US trade deficit with China hits record high of \$621 billion

●In 2018, the US trade deficit with China soared 18.8% to a 10-year high of \$621 billion, despite Trump administration's imposition on tariffs on a range of imported goods from China. The deficit last year was the largest in a decade.

President Trump has attempted to bridge the gap with a protectionist trade policy, which they say is required to shield US manufacturers from what they deem to be "unfair" foreign competition. The US levied tariffs on \$250 billion worth of goods imported from China, leading to Beijing retaliating by imposing duties on \$11 billion worth of American products. Trump has threatened another \$200 billion of tariffs on Chinese imports.

The goods trade deficit with China was up 11.6% to an all-time high of \$419.2 billion last year. The US had record imports from 60 countries in 2018, with China, Mexico and Germany leading the pack, as imports of goods hit a record \$2.6 trillion. Trump's debt-funded tax cuts helped boost spending in 2018.

## US growth slows in Q4

●During the final three months of 2018, the world's largest economy grew at an annualised rate of 2.6%, down from the 3.4% and 4.2% seen in the previous two quarters. The slower rate was blamed on shrinking consumer spending, in the face of a trade war and market uncertainty. The rate of 2.6% was delayed by a 35-day partial shutdown of the government that ended on January 25

## US trade gap surged to a 10-Year high of \$621 billion in 2018

●The US trade deficit widened in 2018 to a 10-year high of \$621 billion, bucking President Donald Trump's pledges to reduce it, as tax cuts boosted domestic demand for imports while the strong dollar and retaliatory tariffs weighed on exports.

The annual deficit in goods and services increased by \$68.8 billion, or 12.5%, Commerce Department data showed recently. The December gap jumped from the prior month to \$59.8

billion, also a 10-year high and wider than the median estimate of economists. The merchandise-trade deficit with China — the principal target of Trump's trade war — hit a record \$419.2 billion in 2018.

While Trump frequently cites the deficit as evidence of the failure of his predecessors' trade policies — even though most economists don't dwell on the indicator — the gap has increased by \$119 billion during his two years as President. Even if he completes an accord to end the tariff war with China, substantially shrinking the deficit may prove tough as cooling global growth weighs on exports while domestic demand keeps driving shipments from abroad.

## US trade deficit with India decreased by \$1.6 billion in 2018

●The trade deficit between India and the US decreased by \$1.6 billion, almost seven% in 2018 as compared to the previous year, according to the latest official figures.

India recorded a decrease in the deficit from \$22.9 billion in 2017 to \$21.3 billion in 2018, according to the latest figures revealed by the Bureau of Economic Analysis on 8th March.

The US trade deficit in goods and services increased by \$9.5 billion from \$50.3 billion in November to \$59.8 billion in December, according to the figures.

For 2018, the US goods and services deficit was \$621.0 billion, up

\$68.8 billion from \$552.3 billion in 2017. Exports were \$2,500.0 billion in 2018, up \$148.9 billion from 2017. Imports were \$3,121.0 billion, up \$217.7 billion from 2017, it said.

## Rest of the world

●America's trade deficit in the rest of the world rose to its highest level in history last year as the US imported a record amount, including from China, widening the deficit to \$891.3 billion and delivering a setback to President Donald Trump's goal of narrowing that gap.

The increase was driven by some factors outside Trump's control, like a global economic slowdown and the relative strength of the US dollar, both of which weakened overseas demand for American goods.

But the widening gap was also exacerbated by Trump's \$1.5 trillion tax cut, which has been largely financed by government borrowing, and the trade war he escalated last year.

## Paris, Hong Kong join Singapore as the world's most-expensive cities

●Move over Singapore, the world's most-expensive city has two new rivals. After topping the Economist Intelligence Unit's Worldwide Cost of Living Survey for five years, Asia's Lion City has been joined by Paris and Hong Kong in a tie at the top of the table.

Zurich and Geneva rounded out the



### US stops duty benefits for \$5.6 billion of Indian exports

●The United States announced the withdrawal of special duty benefits available to India, escalating differences over trade between the two countries. India said this would make little difference. Meanwhile, the US is said to be nearing an agreement with China on their ongoing trade dispute.

India said withdrawal of the Generalized System of Preferences (GSP) will not have a major impact on bilateral trade, citing the low level of exports under the concessional regime.

In another development, sources said India may allow proposed retaliatory duties on 29 US imports that have been deferred six times to kick in from April 1 to express its displeasure, given that the two countries were in talks to resolve trade issues. These levies had been proposed in response to the US raising duties on steel and aluminium imports from India and other nations last year.

The US announcement came hours after President Donald Trump said India was a “tariff king” and imposed “tremendously high” tariffs on American products such as Harley-Davidson motorcycles. The US cited India’s “failure to provide the US with assurances that it will provide equitable and reasonable access to its markets in numerous sectors,” while imposing higher duties.

India, which dismissed the “tariff king” barb, exported goods worth \$5.6 billion under GSP to the US in FY18 as part of total exports of \$49 billion to that country.

### Tariff Offensive

#### LIMITED IMPACT

Total exports to US  
Approx **\$50 b**  
Indian exports under GSP  
Approx **\$5.6 b**  
Preferential tariffs under GSP range from **1% to 6%**  
Total benefit seen at **\$190 m**

#### COUNTER RESPONSE

**India disappointed** with the measures, says trade issues were being discussed

Country was buying planes and fuel to **address imbalance in trade**

India may impose proposed **retaliatory tariffs** on 29 US imports from April 1

It could **go slow** on the package of measures in the works to resolve trade issues

top five, while New York and Los Angeles reclaimed spots in the top 10 ranking in seventh and 10th, respectively, after slipping to 13th and 14th last year thanks to a weakening dollar.

The survey is designed to help companies calculate cost-of-living allowances and build compensation packages for expatriates and business travellers. The trio of cities sharing the top spot are 7% more expensive to live in than New York, according to the EIU, which compiles its list from a survey of 160 products and services across 93 countries.

The Japanese port city of Osaka was another re-entry, moving up six spots to number five. Seoul (joint seventh place), Copenhagen (also seventh) and Tel Aviv (10th) round out the top 10 which actually consists of 11 cities thanks to tied places.

“Weaker local currencies have pushed all five Australian and two New Zealand cities surveyed down in the ranking,” the EIU said, accounting for Sydney’s absence after it scraped into 10th position in last year’s report.

Outside the top 10, the EIU said the cost of living in Chinese cities remains relatively stable, while South-East Asian destinations were moving up the ranks.

While parts of Asia remain the most expensive places on Earth, the continent also makes several appearances at the bottom of the list.

“Within Asia, the best value for money has traditionally been offered by South Asian cities, particularly those in India and Pakistan,” the EIU said. “To an extent this remains true, and Bengaluru, Chennai, New Delhi and Karachi feature among the 10 cheapest locations surveyed,” the EIU added.

### US DOLLAR RATES

	04.04.2019	18.02.2019	18.12.2019
1 INR	0.01447	0.01400	0.01404
1 Euro	0.89056	0.01237	0.11238
1 UK £	1.31502	0.01084	0.11238
1 Yen	0.00897	1.54950	0.00887

### Airbus abandons iconic A380 superjumbo

European plane manufacturer Airbus is to end production of its A380 superjumbo. The firm will stop deliveries of the world’s biggest passenger jet in 2021 due to lack of customers

Airbus A380: Aircraft cost about \$25 billion to develop and has been in service for just 12 years	Length 72.7m
Cruising speed Mach 0.85 (1,050km/h)	Wingspan 79.8m
Range (max. passengers) 15,000km	First flight Apr 2005
Max. take-off weight 575 tonnes	Entered service Oct 2007
Max. fuel capacity 320,000 litres	Powerplant: Four Rolls-Royce Trent 900 or Engine Alliance GP7200 turbofans

Largest A380 customer Emirates has cut back its total order by 39 planes – from 162 to 123 aircraft

Double decker fuselage  
Typical passenger seating: 575  
Maximum seating: 853

A380 ASSEMBLY  
End of production could impact 3,500 jobs

Broughton, UK Wings

Saint-Nazaire, France Forward and centre fuselage sections

Cádiz, Spain Horizontal tailplane

Hamburg, Germany Rear fuselage and vertical tail fin

Toulouse, France Final assembly line

AIRBUS EMPLOYEES  
France: 48,000  
Germany: 46,000  
Spain: 12,700  
UK: 14,000

Source: Airbus, Associated Press, CNN © GRAPHIC NEWS

## NATURAL RUBBER (INDIA)

(Rs./Quintal, Ex-Kottayam)

Grade	April 2019	February 2019	December 2018	October 2018
RSS 4	12850	12350	12400	10462
RSS 5	12600	11700	11900	10362
ISNR 20	12400	11657	11400	9765
Latex (60% drc)	8455	8773	8875	7059

(Source: Rubber Board)

### NOCIL Limited

**(BASIC SELLING PRICE w.e.f. 01-04-2018)**

**Basic price excluding excise duty/cess, sales tax and any other charges.**

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

Pilflex 13	370.00
Pilnox TDQ	270.00

#### Prevulcanisation Inhibitor

Pilgard PVI	500.00
Pilnox SP	240.00

Mafatlal House, 3<sup>RD</sup> Floor,  
H.T. Parekh Marg,  
Backbay Reclamation,  
Churchgate,  
Mumbai - 400 020  
Tel.No.:91-22-66576100/108/142

**NOTE:**

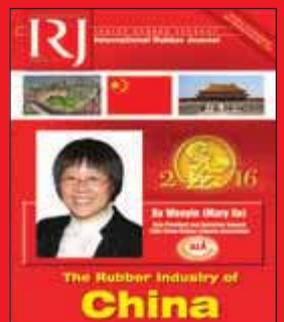
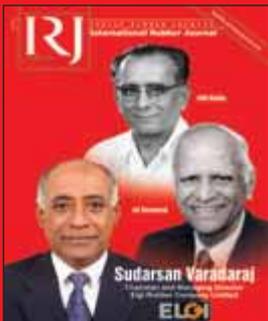
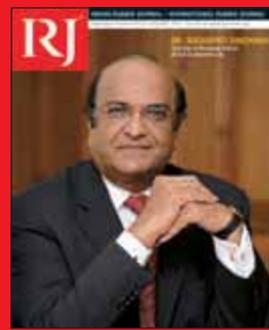
1) All prices are basic prices, exclusive of GST and any other levies as applicable

### Rubo Chem Industries Pvt. Ltd.

(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
PARAFFIN WAX	ON REQUEST
PROCESS OIL	ON REQUEST
PETROLEUM JELLY (WHITE)	100.00
PETROLEUM RESIN	86.00
PRECIPITATED SILICA	52.00
RECLAIM RUBBER-BLACK	35.00
SULPHUR	24.00
SYNTHETIC RUBBERS	ON REQUEST
SYN.RED OXIDE	50.00
SOLVENTS-MEK, TOLUENE ETC.	ON REQUEST
STEARIC ACID(GODREJ)	78.00
SILICONE EMULSION	70.00
TALCUM POWDER	10.00
TITANIUM DIOXIDE	ON REQUEST
WHITING POWDER(P&W)	6.50
WOOD ROSIN	108.00/115.00
ZINC HYDROXIDE	20.00
ZINC STEARATE	65.00
ZINC OXIDE-(RUBBER GRADE)	125.00
ZINC OXIDE (WHITE SEAL)	199.00

\*\*Please note it is difficult to stick to prices especially minerals and petroleum products as they fluctuate widely on weekly basis.



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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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- Responding to the sulphur cap
- Adapting to increasing user demand for CB
- Cost effective methods to utilise CB tyre production
- Assessing feedstock supply impact on the CB market

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# The Rubber Newsletter

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IN GERMANYSCHEN

## Latest news

### **tire** TECHNOLOGY INTERNATIONAL 2019 AWARDS FOR INNOVATION AND EXCELLENCE

#### Tire Technology International Awards for Innovation and Excellence winners announced

The trade show organiser UKI Media & Events announced that the winners of the "2019 Tire Technology International Awards for Innovation and Excellence" have been presented at a ceremony during Tire Technology Expo 2019 at the Deutsche Messe in Hanover, Germany: [...]

[read more](#)



#### Trinseo showcases latex binders solutions at ECS 2019

Trinseo is highlighting its portfolio of latex binders for the adhesives and construction markets at the European Coatings Show (ECS) 2019 on 19 – 21 March 2019 in Nuremberg, Germany. Trinseo is a global materials solutions provider and offers a wide range of latex binders and synthetic rubber [...]

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