Since 2001

METALWORLD™

Devoted to Foundry & Non-Ferrous Metals Industry

Vol. 22 No. 06 | June 2023

Registered-RNI No. MAHENG/2002/7908

www.metalworld.co.in

Indian foundry industry expects PLI scheme support to remain competitive

Iyer Srinivasan

- Importance of interdisciplinary studies in metallurgy & material science- A study
- GSSE 2023 tradeshow to unlock the potential of Stainless Steel at Bombay Exhibition
- Passenger vehicle wholesalers post record sales in May

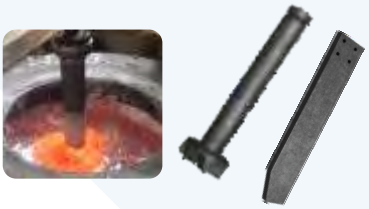
Foundry Products for Non-Ferrous Metals

Since 1856, Morgan Molten Metal Systems is a pioneer and a global leader in supplying technically advanced range of foundry products to Non-Ferrous Foundries.

Syncarb Z2e²

Suprex-E Plus

BNI



Degassing Rotor & Baffle Plate

Degassing Tube

Blue Lightning

Complete Degassing Solution

Morgan has introduced a complete solution to degassing needs of the foundries.

Mobile Degassing Unit

Hoist-Able Degassing System

Reduced Pressure Tester

Density Index Measuring System

Morgan Advanced Materials

Morganite Crucible India Ltd.
(ISO 9001 Company)
B-11, M.I.D.C, Waluj, Aurangabad - 431136
Maharashtra, India

Contact:
vikramsinh.nalawade@morganplc.com
+91 93705 91146
Web: www.morganmms.com

METALWORLD
Devoted to Foundry & Non-Ferrous Metals Industry

EDITOR
D. A. Chandekar
B.E. (Met.) DBM, DJMC

EDITORIAL BOARD
H.T.Makhijani
Amit Majumdar
R.T.Kulkarni
Sadguru Kulkarni

EDITORIAL ASSISTANCE
Swati Padave

PRODUCTION
Anita Chandekar

DESIGN & LAYOUT
Ace Graphics

MARKETING
Prachee More

Administrative Office
1, Alpha, M. G. Road, Vile Parle (E),
Mumbai - 400 057. India
Tel. : 91-22-2619 2376,
2617 1575 / 2617 1866

Email :
info@metalworld.co.in
Editorial : editorial@metalworld.co.in
Website : www.metalworld.co.in

facebook.com/pages/Metalworld
249596461861510

metalworldblog.wordpress.com

twitter.com/chandekar_d

linkedin.com/company/13450168

youtube.com/channel/
UC4vpElyHO-xqdavO40rXXlw

D. A. Chandekar
Editor

Dear Readers,

As mentioned in my earlier columns, India is the fastest growing large economy of the globe surpassing the big powers like Germany, Japan etc. and behind just the US and China. Now a days, a lot of emphasis is being given to infrastructure development which is expected to consume huge volumes of metals in all forms including the castings. The foundry sector is really special in the big umbrella of metallurgical industry. As we know, the metallurgical sector comprises of many sub-sectors like mining, sponge metal production, melting, rolling, etc. based on the process and also like special alloys based on composition and applications.

Though castings are the basic requirement of many industries, a typical foundry spreads lot of dust and is perceived as a dirty industry. Many times, it tends to violate the pollution control norms and this is the reason western developed world with stringent pollution regulations are discouraging the growth of foundries. This provides ample opportunities for Indian foundries in the western world markets like the US and EU. Africa too can be an emerging market. Of course, 'Exports' are easier said than done. One has to take care of many things in order to be really competitive in the international markets. Today, the word competitive does not merely apply to the price but also to the technology, quality, housekeeping, complying to the safety carbon emission and pollution norms etc. Unfortunately many foundries in the country are still far away from this operational culture and have to work a lot in this direction. Of course there are others which have successfully achieved international standards and are exporting the castings all over the world.

Around 50 % of the castings go as auto parts to the growing automobile industry and the remaining in various industries like power, infra, engineering, etc. If India has to grow by over 6 % annually, the metallurgical industry including the foundries has to grow substantially. Now in last few years, the new sectors which have emerged as a big consumers of castings are Defence and railways. As you know, now a days, a lot of emphasis is being given to indiginization of defence equipment as well as the expansion of railway routes and also new gen trains like Vande Bharat.. Further India has also started exporting defence equipment. All this has given a big boost to the foundry sector in the country. I surely see the domestic demand curve rising steadily for the next few years.

Thus with consumer industries like automobile and defence progressing well, the future of foundries in the country looks secured and bright !

Write your comments :
https://metalworlddac.wordpress.com

Content

SARU AIKOH CHEMICALS

PRODUCT RANGE

- Fluxes
- Granular Fluxes
- Tablet Grain Refiner
- Tablet Degasser & NT Based
- Master Alloy Ti, B
- Mag Remover
- Phosphoreus Copper
- Coating G.D.C.
- Die Release Agent H.P.D.C.
- Plunger Lubricant
- Copper & Brass Fluxes
- Teeming Compound
- Fluxes of Copper, Brass, Lead, Mg , Ferrous & Non Ferrous Metal

ABOUT US

- Long Term Support
- Strong R & D
- Prompt Delivery
- Consistent Quality
- 80 Years of Experience
- Export to More than 25 Countries

- **Technical Collaborations with M/s Aikoh Co. Japan**
- **Sales & Distribution with M/s JS Chemical INC, USA**
- **Technical Collaborations with M/s NTC Japan**

SARU AIKOH CHEMICALS PVT LTD.

A-2, INDUSTRIAL ESTATE, PARTAPUR, MEERUT – 250 103 INDIA

Tel. :0121-2440636, 0121-2440641, +91-7302000869, Fax : +91-121-2440644

E-mail: info@saruaikoh.com, customer.support@saruaikoh.com, Website :- www.saru.co.in

"Indian foundry industry expects PLI scheme support to remain competitive"

Iyer Srinivasan

Managing Director,
Elkem South Asia Pvt Ltd.

Srinivasan Iyer has been working in various capacities for the past 35 years. His current role is Country Manager for India and focusing on Strategy, Sales & Marketing, Business Development, Operations and Environment Social and Governance (ESG) and Leadership & People Development.

He holds graduate degrees from IIT BHU & Masters's from IIT Kharagpur & IIM Calcutta. He is Managing Director of Elkem South Asia Pvt Ltd, Mumbai since 2011. Elkem South Asia Pvt Ltd is a wholly owned subsidiary of Elkem ASA, Norway. Elkem is one of the World 39's leading suppliers of silicon-based advanced materials with operations throughout the value chain from quartz to speciality silicones.

With a manufacturing plant in Nagpur, Elkem offer speciality foundry Alloys to the Iron Casting Industry & Chakan for Silicones. We also offer Elkem Silicon and Silicon Based Alloys, Silicones, Carbon, Ferro Silicon and other Products to various industries right from Steel, Ferro Alloys, Aluminum, Construction, Chemical, Textiles, Cosmetics to Electronics & Solar. He is also passionate about Strategic & Change Management.

D A Chandekar, CEO & Managing Editor, Metalworld had an exclusive interaction with Iyer Srinivasan, Managing Director, Elkem South Asia Pvt Ltd. to understand the present situation of Indian Foundry and its demand from the policymakers to remain competitive.

Excerpts :

How is the present situation in the Indian Foundry sector?

The Indian Civilization is one of the oldest ones which used the Mass Casting Process way back in the middle of the first millennium (~ 500 BC) to make silver coins. In colonial times, foundries were set up around the east and west coasts of India. Today this industry is approximately 2-3% of the GDP, generating employment of ~ 1.2-1.5 Million jobs directly and indirectly in 5000+ units of which the majority are MSMEs. What makes it very interesting is that the Indian Foundry industry is the 2nd largest and with growth rates of 10-12% in the next decade or so. The casting demand is primarily domestic covering sectors like Auto, Tractor, Railways, Sanitary and Pipe Fittings, Defence, Engineering, Cement, Electrical, Wind, Pumps etc. but with the new geopolitical situation we would expect diversification of the supply chain and India stands to gain from the same. The industry should easily reach 15-17 Million MT of Production in the next 5 years.

How do you see the Future of Foundry Industry in the country?

I see a bright future for the industry in India.

We do see many foundries expanding existing facilities and putting up green field units. The industry will have to

VAS

SPECTROMETERS

PLATINUM SERIES

METAL ANALYZER

REINFORCED WITH **FUTURISTIC DESIGN**
FOR MEETING THE NEEDS OF **STEEL INDUSTRY**

GOLD PLUS X

SILVER PLUS

éMission

LEADING INNOVATION IN SPECTROSCOPY

VAS SPECTROMETERS PVT. LTD.
Unit No 107, Bldg No 17,
Samhita International Complex
MTNL Lane Off. Sakinaka,
Andheri, Mumnai 400 072
INDIA

www.vasbharat.in
www.vasspectrometers.com
www.vas-speectrometers.com

sales@vasbharat.com

adapt to the rapidly changing situation whether geopolitical or due to the green shift or other megatrends (urbanization, digitalization, and AI etc.) We see a real need for the Indian foundry industry to manage 3 critical shifts.

- Increasing Demand on Quality and Performance consequent to global initiatives to diversify supply chains and changing technology demands
- Environmental, Social and Governance (ESG) demands from Customers require a significant change in not only mindset but also changes in Materials, Technology & Process
- Focus on Renewables and this is not only about solar or wind but the consequent development of EVs or hydrogen-powered equipment where technology is still evolving

In India specifically, simply the demand for automobiles will grow to meet the quality-of-life expectation from the growing young generation, focus on renewables and policy of the government to phase out old and polluting vehicles. One interesting trend would be mass transportation – we just see the work on the first bullet train and there are 8-9 more proposals in the pipeline. This is in addition to the numerous high-speed trains and metros coming up and in the pipeline. I would see the Rail requirements going up substantially. A lot of work needs to be done there. If I talk of infrastructure requirements, the number of new cities coming up, and the industrial corridors, this will lead to demand for pipes and fittings in addition to engineering castings.

Please share the history & present products & services provided by ELKEM to the Foundry Industry

Elkem has been a pioneer in technology starting with the Soderberg invention. Elkem is one of the world's leading providers of advanced silicon-based materials shaping a better and more sustainable future. Our History in India goes back to the post-independence period when we were setting up Ferro Alloy plants in the country the first one in the late 1950s. Today we are supplying products and services to a variety of industries starting with Silicon to Electronics, Solar, semiconductors, aluminium, and a host of other industries. We supply High Purity Ferro Silicon to the steel industry. We supply a host of silicone chemistries to textiles, personal care, healthcare, rubber, oil & gas, tyre, construction, packaging and related industries to name a few. Advanced materials to refractories, construction, ferroalloy and other industries. Our markets cover Mobility & Transportation, Healthcare, Smart Cities and Construction, Personal Care & Consumer goods, Digital Communication, Energy and advanced materials and industrial segments.

In the foundry industry, our association goes long back in the Iron Casting Industry. We are the pioneers in new products and metal treatment solutions, leading to efficiency, improvement in quality and performance. In 2016 we started our industrial footprint in Nagpur with an acquisition of a foundry alloy unit and since then have invested in both process, technology, and capacity. We have set up a global research & innovation centre at Nagpur. We continue to invest and are currently expanding our facility by 50%. This unit will be on stream in Q3 of 2023 and produce high-quality alloys for the industry and will continue to provide end-to-end solutions to our customers. Our approach has always been adding value to our customers with superior

Innovative Foundry Solutions

Modern castings need cores of all complexity. **Gargi Hüttenes-Albertus** products combine excellent performance, consistency and environmental compatibility to add value to your casting.

OUR ECO MISSION

Our goal is to minimize foundry environmental impact throughout our product's life cycles, with an ongoing commitment to continuous improvement.

Gargi Hüttenes-Albertus Private Limited
1502 Vikas Centre, 15th Floor, Dr. Choitram Gidwani Road, Chembur, Mumbai - 400074. Maharashtra. India. +91 (022) 68785656 • 25201396 • 25201397
gargiha@ha-group.com www.ha-group.com
HuettenesAlbertusGroup #hüttenesalbertus

products and knowledge of the process. We believe we will succeed only when our customers succeed. Our approach has been to look at customers' processes and see how we could improve yield, reduce defects and overall optimize using the best products and knowledge. Thus, we can say Elkem provides end-to-

end solutions to the Indian Foundry Industry.

In terms of Carbon Footprint, Elkem has an ambition of Carbon Neutral Metal Production by 2050. Our goal is to reduce our carbon footprint by 39% by 2030. Just as a part of statistics in 2022, 80% of the power consumed was green power and 20% of carbon was biocarbon.

Elkem is in the top 10% of the companies in the world in sustainability. We have been rated “Gold” by Eco-Vadis in Sustainability transparency which places us in the top 3% of the companies in the world. This is in addition to the CDP rating of A- on leadership.

In our plant at Nagpur, 8% of our power comes from our captive solar with the rest from the Grid. We want to be the “No 1 Sustainable” foundry alloy plant and invite our customers and partners to work with us on this journey and create a legacy for the future generation of our nation and the world at large.

We are willing to partner by co-development and sharing the best practices we have and which our partners have. From our side, it can be the focus on the Elkem Business System (EBS), HSE or ESG or even include joint development of products. We believe only when our customers win, we will win. A partnership of trust and win-win proposition. Today it's not about competition but cooperation.

What does the Foundry industry expect from policymakers?

Our expectation is very simple, the Indian foundry industry should be the most competitive in the world in terms of productivity, quality and sustainability. This will increase the profitability of the industry to attract talent and create a future. A point, in this case, is the notification of the EU's Carbon Border Adjustment Mechanism (CBAM). Our industry needs to adapt to this new environment, and we hope that some new initiatives like PLI Scheme extended to the foundry industry, also bringing the iron & steel industry under the RoTDEP, initiatives for setting up innovation laboratories, R&D Units, Support for Green Transition which will all make the industry more competitive. Perhaps we need to also regulate the imports of low-quality castings by quality control orders which support the 'Make in India program.

What are the Future growth plans of ELKEM?

We hope to continue to invest in India with at least a couple of more greenfield/brownfield expansions, joint ventures, and acquisitions adding to the product lines in the industries we serve. We expect to grow our revenues with a plan to be 3 times bigger than what we are in the next 5 years. We will continue our ESG Journey. We believe success is 70% people and 30% Technology or Process and hence we will continue to invest in people with a focus on Diversity Equity and Inclusivity as the cornerstone of our people philosophy. In the foundry sector, we will add new product lines and upgrade the existing product portfolio in line with global emerging trends. We will continue and move on Digitalization & Automation Journey and improve our Customer Experience

We shall be offering quality products to our customers along with our value-added services which will give them an edge over their competitors and help them win at customers' place.

NEWEL

"WE PACK ANY THING, ANY SIZE, ANY SHAPE"

Trusted Veteran In Providing Top Quality Packaging Solutions

Innovative engineered packaging solutions inspired by excellence

Newel Packaging delivers innovative solutions that help improve supply chain performance, facilitating the secure, swift and efficient transit of goods without impacting material integrity.

Newel Packaging is creating new benchmarks in the protective packaging industry. We specialize in the design & manufacture of Nail-less Packaging Boxes, a smart solution that is finding wide acceptance owing to its flexible design, high reusability and exceptional quality (ISPM15 standards).

Nail-less Packaging Boxes

Plywood Packaging Boxes

Heavy Duty Packaging Boxes

Plywood Pallets

Wooden Pallets

NEWEL PACKAGING PVT LTD

UNIT 1
Plot No. 203, Vasantdada Industrial Estate, Sangli 416416.

UNIT 2
Plot No. 109, 110, 111, Vasantdada Industrial Estate, Sangli 416416.

(+91) **233 2310424**

(+91) **905 957 1111**
(+91) **942 125 4097**

NEWEL

piyush@newelpackaging.com
nitin@newelpackaging.com
sales@newelpackaging.com

www.newelpackaging.com

Importance of interdisciplinary studies in metallurgy & material science- A study

Part 3

Sadguru Kulkarni
Retired President-Technology, Hindalco Industries Ltd Corporate, covering Research & Technology, Technical. Now a Freelance Consultant in FMCG, Minerals & Metals, Chemicals and Sustainability

Noteworthy Scientists in metallurgy and material science in the last decade

People are the most important part of any work, especially scientific and creative as well as analytical in nature. We tried to ask Chat-GPT about noteworthy scientists and technologists in the area of material science & metallurgy based on their contributions. Here are some important scientists and engineers

in metallurgy who have made significant contributions in the last 10 years:

1. Dr. Mark C. Hersam- Graphene: : Dr. Hersam is a materials scientist at Northwestern University who has made significant contributions to the study of graphene and other 2D materials. His research has focused on developing new methods for synthesizing and characterizing these materials, and exploring their potential applications in electronics and other fields.
2. Dr. JochenLippitz- methods for nano-scale materials: Dr. Lippitz is a materials scientist at the Max Planck Institute for Intelligent Systems in Germany. His research has focused on developing new methods for studying and controlling the behavior of nanoscale materials, including metals and semiconductors. His work has potential applications in fields such as catalysis, energy storage, and nanoelectronics.
3. Dr. Xiaoyan Li- High temperature steels: : Dr. Li is a materials scientist at the Chinese Academy of Sciences who has made significant contributions to the study of advanced high-strength steels. Her research has focused on developing new alloys and processing methods to improve the mechanical properties of these materials, with potential applications in industries such as automotive and aerospace.
4. Dr. Jürgen Hirsch- Material properties on nano-scale: : Dr. Hirsch is a materials scientist at the Karlsruhe Institute of Technology in Germany. His research has focused on developing new methods for studying the mechanical behavior of materials at the nanoscale, with a particular focus on metals and alloys. His work has potential applications in fields such as nanomechanics, materials science, and engineering.
5. Dr. Eric J. Schelter-Rare Earths and their applications: Dr. Schelter is a materials scientist at the University of Pennsylvania who has made significant contributions to the study of rare earth metals and their applications in catalysis and other fields. His research has focused on developing new methods for synthesizing and characterizing these materials, and exploring their potential applications in sustainable energy and other fields.

Thus, Dr. Mark Hersam, Dr. JochenLippitz, Dr. Xiaoyan Li, Dr. Jürgen Hirsch, and Dr. Eric J. Schelter are some of the important scientists and engineers in metallurgy who have made significant contributions in the last 10 years.

Nobel Prize winning material scientists / metallurgists: History of technology shows that significant basic discoveries and inventions lead to disruptive technologies in all areas, and are often rewarded

Scottish Chemical Industries

Empowering Metallurgy

Our Products

- Hexachloroethane
- Degaser 200 / 190 / N2
- Nucleant 2
- Lomag *(Magnesium Remover)*
- Sodium / Calcium Remover
- Foundry Fluxes
- Granulated Fluxes
- Fused + Granulated Fluxes *(Scot-Mag)*
- Coatings
- AlSr / AlTi Alloys
- AlTi5B1 Coils / Ingots
- Al -Mn, Al-Cu, Al-Cr Alloys
- Al-Boron 3-10%
- Mn / Fe / Cu / Cr / Ti Adal Tablets
- Magnesium Ingots
- Silicon Metal
- Ceramic Foam Filters
- Refractory Products
- Silicon Carbide Crucibles
- Coil Feeding Machine
- Mobile Degassing Unit
- Hydrogen Testing Machine
- Pet Straps

5th Floor | Span Center | South Avenue | Santacruz West | Mumbai 400054 | India.
Ph +91 22 26056666 Fax +91 22 26056060 Mob +91 9820138620 Email scottish@vsnl.com

with the Nobel Prize. We tracked metallurgists and material scientists who have received the Nobel Prize and what difference their work has made to the field. ere are the Nobel laureates in Material Sciences since the inception of the award in 1982::

1. 2021: Benjamin List and David W.C. MacMillan (for the development of asymmetric organocatalysis)
2. 2020: Emmanuelle Charpentier and Jennifer A. Doudna (for the development of a method for genome editing)
3. 2019: John B. Goodenough, M. Stanley Whittingham, and Akira Yoshino (for the development of lithium-ion batteries)
4. 2018: George P. Smith, Sir Gregory P. Winter, and Frances H. Arnold (for the directed evolution of proteins)
5. 2017: Jacques Dubochet, Joachim Frank, and Richard Henderson (for the development of cryo-electron microscopy for the high-resolution structure determination of biomolecules in solution)
6. 2016: David J. Thouless, F. Duncan Haldane, and J. Michael Kosterlitz (for theoretical discoveries of topological phase transitions and topological phases of matter)
7. 2015: Arthur B. McDonald and TakaakiKajita (for the discovery of neutrino oscillations, which shows that neutrinos have mass)
8. 2014: Shuji Nakamura, Isamu Akasaki, and Hiroshi Amano (for the invention of efficient blue light-emitting diodes, which has enabled bright and energy-saving white light sources)
9. 2013: Martin Karplus, Michael Levitt, and

AriehWarshel (for the development of multiscale models for complex chemical systems)

10. 2012: Serge Haroche and David J. Wineland (for groundbreaking experimental methods that enable measuring and manipulation of individual quantum systems)
11. 2011: Dan Shechtman (for the discovery of quasicrystals)
12. 2010: Andre Geim and Konstantin Novoselov (for the discovery of graphene)
13. 2009: Willard S. Boyle, George E. Smith, and Charles K. Kao (for breakthroughs in the invention of CCD sensors and optical fiber communications)
14. 2008: Osamu Shimomura, Martin Chalfie, and Roger Y. Tsien (for the discovery and development of green fluorescent protein, which has revolutionized the study of biological systems)
15. 2007: Albert Fert and Peter Grünberg (for the discovery of giant magnetoresistance, which has enabled the development of high-capacity hard drives)
16. 2006: John C. Mather and George F. Smoot (for their discovery of the blackbody form and anisotropy of the cosmic microwave background radiation)
17. 2005: Yves Chauvin, Robert H. Grubbs, and Richard R. Schrock (for the development of the metathesis method in organic synthesis)
18. 2004: David J. Gross, H. David Politzer, and Frank Wilczek (for the discovery of asymptotic freedom in the theory of the strong interaction)
19. 2003: Alexei A. Abrikosov, Vitaly L. Ginzburg, and Anthony J. Leggett (for pioneering contributions to the theory of superconductors and superfluids)
20. 2002: Raymond Davis Jr. and Masatoshi Koshiba (for pioneering contributions to astrophysics, in particular for the detection of cosmic neutrinos)

We do observe a lack of clarity in these responses from Chat-GPT; however it may turn out to be true that these works in fact will lead to generation of new materials in coming years. We will need to wait and watch.

Key areas of the modern world where Material science & metallurgy technologies have made significant differences are many. Important among these are:

1. Electronics: The

development of new materials with unique electronic properties has revolutionized the electronics industry. Semiconductors, which are at the heart of modern electronics, are made from silicon and other materials. The development of new materials like graphene, carbon nanotubes, and gallium nitride is opening up new possibilities for even more advanced electronic devices.

2. Energy: Advances in material sciences have enabled the development of more efficient and sustainable energy technologies. For example, the development of lithium-ion batteries has revolutionized portable electronics and enabled the widespread adoption of electric vehicles. Advances in materials science are also leading to the development of new solar cell technologies that are cheaper, more efficient, and more durable than traditional silicon-based solar cells.
3. Biomedicine: Materials science is playing an increasingly important role in biomedicine, from the development of new biomaterials for implants and prosthetics to the development of new drug delivery systems. Advances in materials science are also enabling the development of new diagnostic tools and imaging technologies that are helping to improve our understanding of human physiology and disease.
4. Aerospace: Advances in materials science have enabled the development of stronger, lighter, and more heat-resistant materials for aerospace applications. Materials like carbon fiber composites and ceramic matrix composites are helping to make airplanes and spacecraft lighter and more fuel-efficient.
5. Construction: The development of new materials with superior mechanical properties has enabled the construction of taller and more complex buildings and structures. Materials like high-strength steel, reinforced concrete, and advanced polymers are being used to create more resilient and sustainable infrastructure.

These are just a few examples of the many ways

that material sciences have contributed to the modern world. Without the innovations made possible by material science, many of the technologies and products that we take for granted today would not exist.

Role of material science in pharmaceuticals

Material science plays a critical role in the pharmaceutical industry, from the development of new drug delivery systems to the design of novel biomaterials for medical devices and implants. Here are some of the ways that material science contributes to the pharmaceutical industry:

1. Drug delivery systems: Material science is essential to the development of drug delivery systems that can deliver drugs to specific locations in the body with precision and control. For example, materials like liposomes and polymeric nanoparticles can be used to encapsulate drugs and deliver them to specific cells or tissues. In addition, materials like hydrogels can be used to control the release of drugs over time, allowing for sustained drug delivery.
2. Biomaterials: Material science is also used to design and develop biomaterials for medical devices and implants. These materials need to be biocompatible and have appropriate mechanical properties to function properly within the body. For example, materials like titanium and biodegradable polymers are commonly used in orthopedic implants, while materials like silicone and polyurethane are used in soft tissue implants.
3. Surface modifications: Material science can also be used to modify the

ALUMINIUM CHINA

05-07 July 2023

Hall N1-N3, Shanghai New International Expo Center

Asia's Leading Sourcing and Networking Platform for The Entire Aluminium Industry Chain

ALUMINIUM CHINA provides an integrated platform for business procurement, international exchange, networking and branding by converging new products, technologies, processes, and applications covering the entire aluminium industry chain of alloys, processing materials, manufactured parts, finished products, as well as equipment, auxiliary materials and consumables.

500+ Exhibitors

45,000 sqm Exhibiton area

23,000 Domestic and oversea trade visitors

Previous Exhibitors (partial)

Materials

Equipment

Exhibit Range

Materials

- Primary aluminium
- Recycled aluminium
- Aluminium alloys
- Semi-products and half made alloys, such as aluminium profiles, sheets, belts, foils, aluminium-plastics, casting, and forge
- Deep processed products, covering construction, transportation, machinery, packaging, electronics, photo-voltaic industries

Equipment

- Primary aluminium processing equipment
- Recycled aluminium processing equipment
- Heat processing
- Extrusion and rolling equipment
- Surface processing equipment
- Test and measurement
- Deep processing equipment
- Auxiliary materials and other equipment
- Environmental protection and energy efficient equipment

Concurrent Events

Lightweight Asia 2023 2023亚洲汽车轻量化展览会 Asia's Lightweight Automotive Trade Fair

上海国际车轮工业展 2023 Shanghai International Wheel Industry Exhibition

Follow us on our socials

For exhibiting, visiting and marketing cooperation, please contact:

Caroline Wang +86 10 5933 9325 caroline.wang@rxglobal.com

Organizer: RX in the business of building businesses

Co-Organizer: Reed Exhibitions Deutschland GmbH, Beijing Antaike Information Co., Ltd.

surface properties of materials used in medical devices and implants. By modifying the surface chemistry and topography of materials, it is possible to control interactions with biological tissues, reduce the risk of infection, and improve the biocompatibility of the materials.

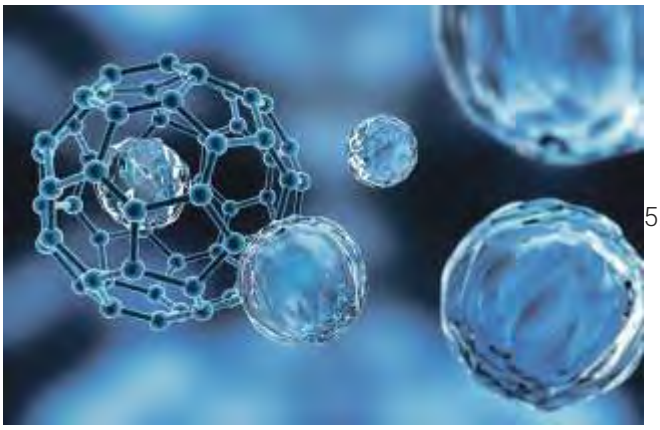
4. Imaging: Material science plays a critical role in medical imaging, from the development of contrast agents to the design of new imaging modalities. For example, materials like gadolinium and iron oxide nanoparticles can be used as contrast agents in magnetic resonance imaging (MRI), while materials like quantum dots can be used in fluorescence imaging.

Overall, material science is an essential component of pharmaceutical research and development. By developing new materials and designing new drug delivery systems, material scientists are helping to improve the efficacy and safety of pharmaceutical products and enabling the development of new treatments for a wide range of diseases and conditions.

History of material discovery over last 1000 years

The discovery and development of new materials has been a critical driver of human progress over the last 1000 years. Here are some of the most significant developments in the history of material discovery:

1. Iron and steel: The discovery and development of iron and steel is one of the most significant material advancements in human history. Iron was first used for tools and weapons around 3000 BCE, and the development of steelmaking in ancient China and India allowed for the production of



even stronger and more durable materials.

2. Glass: The production of glass dates back to ancient times, with evidence of glassmaking dating back to the 2nd millennium BCE. The development of new glass formulations and techniques over the centuries has led to the creation of a wide range of products, from decorative objects to optical lenses and fiber optics.
3. Ceramics: The production of ceramics dates back thousands of years, with ancient civilizations in China, Egypt, and Greece producing a wide range of ceramic objects. The development of new ceramic formulations and techniques over the centuries has led to the creation of materials with a wide range of properties, including high strength, high temperature resistance, and piezoelectric properties.
4. Plastics: The development of synthetic plastics in the 20th century was a major milestone in material discovery. The first synthetic plastic, Bakelite, was invented in 1907, and the development of new plastics like nylon, polycarbonate, and polyethylene has led to the creation of a wide range of products, from toys to medical devices.
5. Semiconductors: The development of semiconductors in the mid-20th century revolutionized the electronics industry. The discovery of the semiconductor properties of materials like silicon and germanium paved the way for the development of modern electronic devices like transistors, microprocessors, and solar cells.
6. Nanomaterials: The development of new materials with nanoscale dimensions in the last few decades has opened up new possibilities for material discovery. Nanomaterials have unique properties that can be exploited for a wide range of applications, from drug delivery to energy storage.

These are just a few examples of the many significant material discoveries that have occurred over the last 1000 years. Each new material discovery has led to the creation of new products and technologies, driving human progress forward. ■

MEGA EVENT IN CHENNAI

1-2-3 DECEMBER 2023

Venue
Chennai Trade Centre,
Chennai, India

ALUMINIUM GDC TECH GREAT DIE CASTING

FORGING TECHNOLOGY FORUM

GDC TECH GREAT DIE CASTING mega event 2023
ALUMINIUM DIECASTING EXHIBITION & CONFERENCE

GDCTECH 2023

International Conference & Exhibition on

Aluminium Diecasting Industry

THEME

Preparing for the Next...

www.gdctechforum.com

FORGING TECHNOLOGY FORUM mega event 2023

FORGING 2023

International Conference & Exhibition on

Forging Industry

THEME

Change for the Future...

www.forgingtechnologyforum.com

Managed By

CONFERENCE & ENGINEERING

ARKEY CONFERENCE & ENGINEERING SERVICES
Tel.: 020 - 2567 2555, 2567 0808 Mobile: +91 97647 11315
gdctech@arkeycell.com, fftc@arkeycell.com
arkeyconference@arkeycell.com

GSSE 2023 tradeshow to unlock the potential of Stainless Steel at Bombay Exhibition

2nd Edition
GSSE
GLOBAL STAINLESS STEEL EXPO 2023
14 15 16 SEPTEMBER
BOMBAY EXHIBITION CENTRE I MUMBAI

POWERED BY
JSL
JINDAL STAINLESS

After a remarkably impressive debut last year, India's reputed tradeshow organizers, Virgo Communications & Exhibitions, are once again, organizing their much-lauded second edition of GSSE: Global Stainless Steel Expo 2023 from 14 to 16 September at Bombay Exhibition Centre, Mumbai. It's a 'must-attend' tradeshow for all those who are connected with the stainless steel industry and processes related thereof.

GSSE is an apt platform that attracts the participation of India's leading stainless steel producers who come together to showcase sustainable business solutions to end-user industries. The event will further augment the usage of the metal mainly in India which is the second-largest consumer of stainless steel consumer in the world. The platform presents an exclusive opportunity for manufacturers & suppliers of stainless steel products to meet with potential customers representing 200+ product applications from India and across the globe. It has fast developed as the largest dedicated stainless steel industry stakeholder platform that helps end-user industries to source and network!

Vijay Sharma
Director - Jindal Stainless

Explaining the importance of the event, Vijay Sharma, Director, of Jindal Stainless, said, *"As the exclusive Title Partner for GSSE, we are looking forward to yet again interacting with fellow stakeholders in the stainless steel ecosystem, including suppliers, users, traders, associations, regulators, and fabricators. Together with these partners, we intend to leverage this event to discuss issues pertinent to the growth of India's stainless steel industry, and solutions needed to raise the bar for the whole country."*

Stainless steel is rapidly

becoming a preferred material in a lot of industries that have replaced conventional materials. The varied properties of this material make it such a versatile material that sees diverse applications across varied segments. However, it is the construction and infrastructure industry that remains the biggest consumer of the material globally. While stainless steel has always been a crucial part of the construction industry, it is now more than ever that the diversity of its usage comes to light. It is interesting to note that the construction industry uses about 12% of cold rolled stainless steel and 5% of hot rolled stainless steel. Some of the uses of stainless steel in the construction industry.

Facades

Stainless steel is often used in the treatment and design of the external facade of buildings. Right from using stainless steel jaalis or laser cut motifs, stainless steel fittings, railings, grills etc. are commonly seen in the facade design of many buildings.

Load Bearing Construction

The strength of the material, ease of availability and the fact that it can be reused make it one of the preferred materials for the construction of load-bearing structures. Steel trusses, columns and other components that bring stability and add strength to a structure are widely made in this versatile material.

Temporary and Large Scale Structures

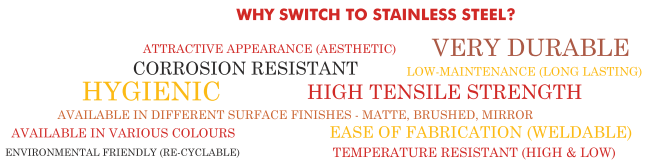
It is extremely fascinating to see that stainless steel can be used for both temporary structures and structures that demand extreme strength and stability. From industrial plants, and metro stations to temporary sheds and setups, stainless steel is a preferred material. The construction is much faster and the fact that it can be completely recycled once dismantled makes it a go-to material for such types of construction. It is easy to clean and offers an austere and clean ambience further enhancing its appeal.

Supporting Components and Fittings

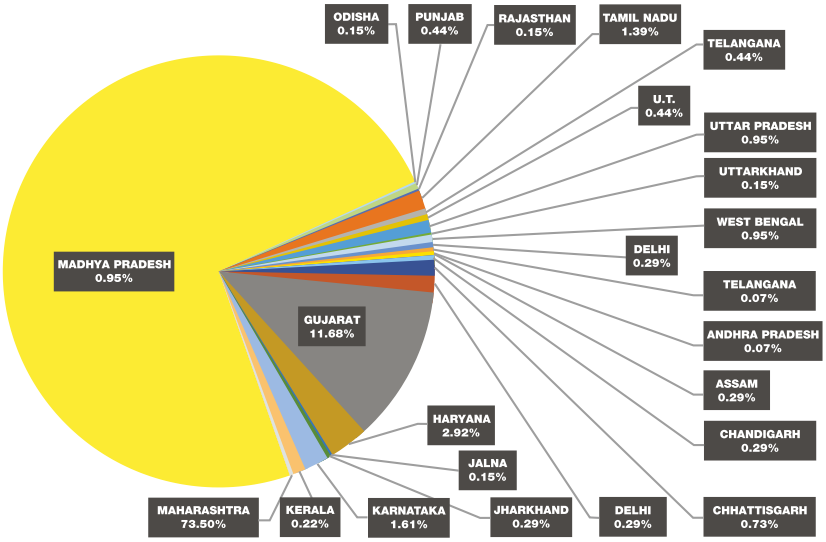
From fasteners for glass panels to door knobs, there are hundreds of fittings and supporting components that are made out of stainless steel. Since the material is easy to clean, free of corrosion and rusting, sturdy and needs no coating or painting, it is used extensively both for internal & external fittings. Bathroom fittings, latches, railings, handles, kitchen baskets, organisers and many more products are made in stainless steel owing to the aforementioned factors.

Bridges and Other Utilities

Bridges are required to be strong and long-lasting. They have to endure the anticipated load and stand the test of time and natural calamities, extreme weather conditions etc. Keeping these factors in mind, stainless steel becomes a preferred choice of material. From stainless steel cables and wires to bars and rods, the use of this material is extensive. When stainless steel reinforcement bars are used, the estimated service life of the deck of a reinforced concrete bridge is up to 75-100 years. Apart from bridges, stainless steel is used in the construction of flyovers, elevated roads, metro lines etc.



The clean and sterile finish that it offers, ease of maintenance, lack of any toxic coating and resistance to corrosion and discolouration are some of the key factors that have contributed to the extensive



use of stainless steel in the construction industry. It can be used for kitchen slabs, industrial kitchens, hospitals, partitions and more. When not needed, it can be easily dismantled and recycled without any wastage or loss of material or funds. As the use of stainless steel continues to show steady growth, this is the time for manufacturers and dealers of the material to showcase their offerings to potential clients. GSSE 2023 offers the ideal platform for industries and manufacturers of varied types of stainless steel products and raw materials to come together under one roof to strike promising business alliances.

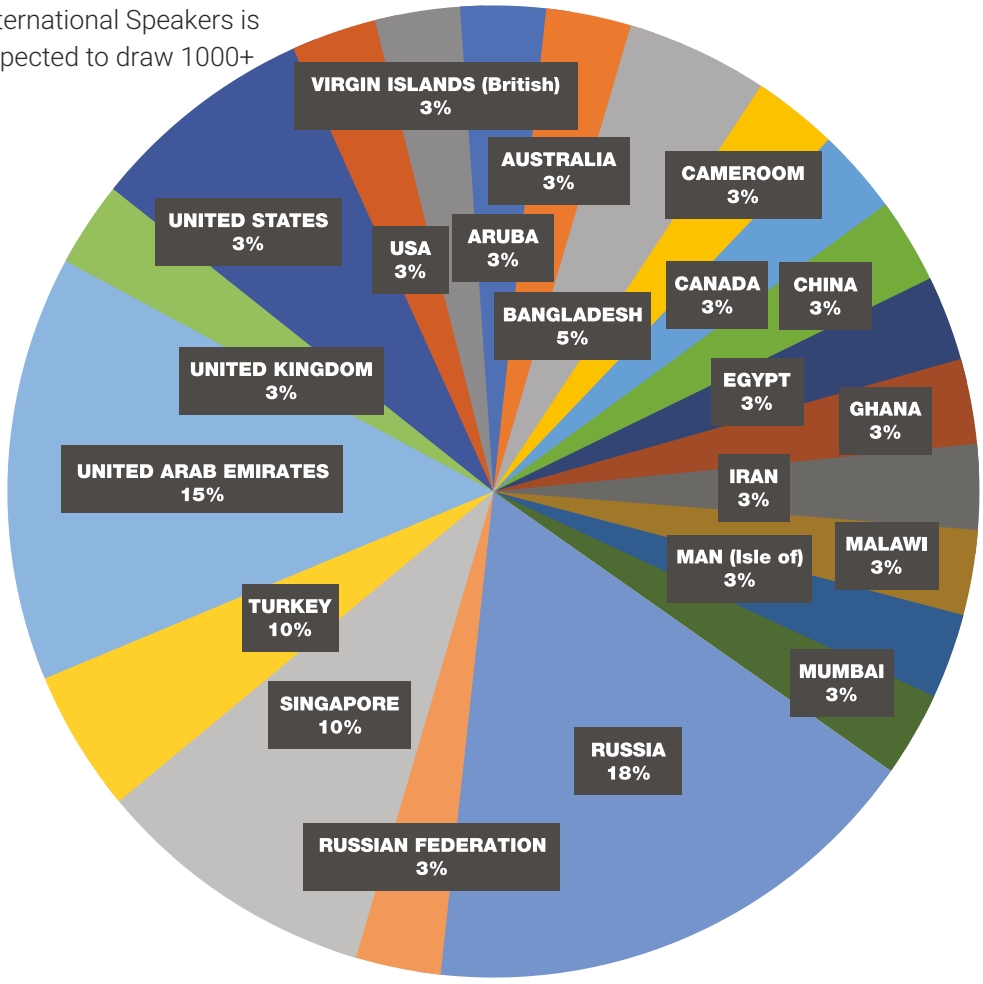
GSSE 2023: Highlights

o B2B Exhibition
o 150+ Exhibitors
o Overseas Participation
o 10000+ trade visitors
o 100000 sq. ft. area
o Buyer Seller Meet
o CEO Round Table
o Industry and Technical Conference
o 12+ Knowledge Sessions
o 50+ Industry Speakers

GSSE 2022: Visitor Footfalls

Apart from the expo, a concurrent 3-day conference featuring 12 power-packed Knowledge sessions with 50+ Renowned National & International Speakers is expected to draw 1000+ attendees from 500+ organizations.

If you want to explore and learn about the advantages of stainless steel for your business, then GSSE 2023 is a must-visit for you to witness the latest advances and updates in the stainless steel industry. Visitor Registrations is Open for GSSE 2023. For more information, visit www.gssexpo.com or scan the QR code for simple online visitor registration.



TQM
… *ways to achieve* 3 Ps - Profit, Praise & Peace

Total Quality Management (TQM) is a management approach that aims to optimize business processes and improve customer satisfaction by ensuring that every aspect of the organization is focused on quality. It is a comprehensive system that involves all employees in the organization from top-level management to front-line workers, in a continuous effort to improve processes, products, and services. The ultimate goal of TQM is to achieve profit, praiseand peace by delivering high-quality products and on - time services to customers.

The philosophy of TQM is ~ 'Doing Right Things Right … First Time & Every Time and it has to start from choosing of right person for the right position … clearly communicating them what are the various objectives of the organisation to be achieved, empowering to have them the feeling of ownership, taking care of their requirements in terms of right resources, continually upgrading their skills based on … not only the technical needs but also the various management systems and knowhow of improvement methodologies/techniques like problem solving i.e. corrections, corrective actions and the better would be preventive measures and Failure Modes & Effect Analysis (FMEAs), using brainstorming techniques effectively and what's more important is'keeping motivational process well in place'.Targets once achieved … celebration is must !

Profit:

TQM can lead to increased profitability in several ways … by improving quality, organizations can reduce waste, rework and defects which in turn can lead to cost savings. This can be achieved through a variety of methods, including process improvement, error prevention and continuous improvement.

The skill level of all employees must be strictly checked while allowing them to work in processes, keeping in mind of 'achieving right first time i.e.defect free products or services through them (and if neededupgradation is done) and knowledge of FMEAs, Autonomous Maintenance (JishuHozen), DWM (daily work management), Kaizen etc will support in increasing level of profit … for sure.

One key component of TQM is the use of data & metrics to measure performance for example tracking metrics such as defect rates, customer satisfaction and cycle times and this way organizations can identify areas for improvement and make data-driven decisions to optimize their processes. This can help organizations reduce costs and increase efficiency, which can ultimately lead to increased profitability.

Sapan Kumar Bardhan
Director (Organisation Development) – MABEC
Total Quality & Lean Mgmt. ~ Trainer & Consultant
Motivational Speaker, Author of Book 'Unfolding Success'
(next book 'Unfolding Success 2.0 - Balanced Leadership with Human Face'is expected by Sept'23)

Praise:

TQM can also lead to increased praise from external customers, stakeholders and society as well. Focusing on quality, organizations can deliver products and services that meet or exceed customer expectations. This can lead to increased customer loyalty and positive word-of-mouth, which can help organizations build a strong reputation and brand.

One key parameter of TQM is 'Customer Satisfaction'. Listening to customer feedback and incorporating it into product and service development, organizations can ensure that they are meeting

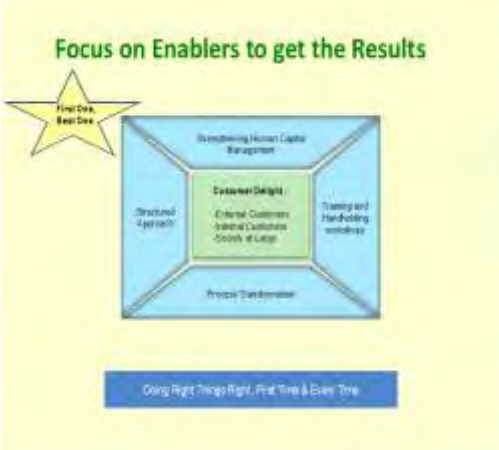
the needs of their customers. This can lead to increased trust and loyalty, leading to increased praise and recognition from customers and other stakeholders.

Peace:

TQM can also lead to increased peace within the organization. Involving all employees in the continuous improvement processes, TQM can help build a culture of collaboration, teamwork and shared responsibility. This can lead to increased employee engagement, motivation and job satisfaction.

One key aspect of TQM is the emphasis on employee training and development. By providing employees with the tools and knowledge they need to excel

in their roles, organizations can foster a culture of continuous learning and



TQM is a comprehensive management approach that can help organizations achieve profit, praiseand peace by delivering high-quality products and services to customers. By focusing on quality, organizations can reduce costs, increase efficiency and build a strong reputation and brand. By involving all employees in the continuous improvement process, TQM can help build a culture of collaboration, teamwork, and shared responsibility, which can lead to increased employee engagement, motivation, and job satisfaction. Overall, TQM is a powerful tool for organizations looking to achieve sustainable success in today's competitive business environmentbut needs patience during implementation and to enjoy the fruits andthusLeading to Prosperity for One & All !

One of the biggest aspects of TQM is empowering the co-workers to take decisions within their scope/boundaryof work to ensure that all of their internal customers get what exactly they need or visualised and all together cumulatively … make external customers happy & smile.

To conclude TQM can be established through three processes:

1. Quality Process … to understand who are my customers and trying to completely satisfying them.
2. Management Process … using popular PDCA (Plan – Do – Check – Act) cycle.
3. People Process … continually upgrading their skills, motivating them and creating a conducive environment enabling each & everyone to give their best.

Best on my last 45 years of experience of working with people at ground level … I am very confident that zero defect products or services are possible … provided we have pure/quality intention to achieve so.

References:

1. Own Experience on Training, Implementation & Assessments on Quality Management
2. Learnings from reputed Training & Consulting Organisations

Networking Steel & Metal Industry - Worldwide

Monthly Publication
Trade Shows
B2B Industry Portal
Industry Research
Strategic Consultancy

Complete Visibility in Global Iron & Steel Sector

Chandekar Business Media Pvt. Ltd.

STEELWORLD
Devoted to Iron & Steel Industry

A Knowledge & Networking Company

METALWORLD
Devoted to Foundry & Non-Ferrous Metals Industry

1, Alpha, 1st Floor, M.G. Road, Vile Parle (East), Mumbai - 400 057. INDIA,
Tel : 91-22-26171575 / 26192376 / 26171866
Email : info@steelworld.com | info@metalworld.co.in
Website : www.steelworld.com | www.metalworld.co.in

Jindal Aluminium upholds its No.1 position as India's largest Aluminium extrusion company

Jindal Aluminium has produced a record 1,06,000 metric tons of extruded Aluminium products. The company has maintained its position as India's largest Aluminium extruded products manufacturer since its inception. Its dominant position in Aluminium Extrusion is a testament to its commitment to delivering high-quality products in the shortest lead time using best-in-class technology. The company witnessed a year-on-year growth of 16% in its revenue for FY22-23.

By prioritizing innovation and value, the company has maintained its position as a prominent player in the industry while striving towards a prosperous, sustainable future. Jindal Aluminium has used 100% renewable energy at its manufacturing units in Bengaluru (Bangalore) and Dabaspet. It was the first company to set up wind power plants in 1997 in Karnataka. Since then, the company has used renewable energy to produce engineered Aluminium products. As a strong sustainability proponent, Jindal Aluminium benchmarked modern green manufacturing practices two decades ago.

Proposing changes to make electric buses more viable: Gadkari

Union Minister for Road Transport and Highways Nitin Gadkari has said professionally managed Public transport system based on electricity in public-private partnership mode will get a good response. Addressing 'INSIGHT

2022': International Conference on Sustainable and Innovative Finance for Green and Healthy Transportation he said capital investment is not an issue if there is a correct model to implement . He said efforts should be made to discourage use of personal vehicles .

Appreciating the London transport model the Minister said people want more comfort in less rate. He proposed use of card or QR code based entry-exit system in place of

physical ticket system in the buses to prevent losses to the bus corporations and promote ease of travelling.

He emphasized that with coming of electric buses there will be reduction in pollution and also we will be able to reduce our import of diesel and crude oil.

Nitin Gadkari said we are trying to make automobile industry of 15 lakh crore as this is the industry which has maximum employment potential generating 4 crore jobs in the country and further this industry has given maximum revenue to state and central governments.

The Minister congratulated CESL for tender of 5450 e-buses which is largest in the world. He said the target should be 5Lakh buses instead of 50000 e-Buses. Gadkari said green Hydrogen is future of mobility .The minister also proposed setting of E-road from Delhi to Jaipur. He said alternate fuels,new technologies and innovations in transport sector must be found for economic viability and sustainable development.

Hindalco Industries Q4 Results: Standalone profit falls 48% YoY to Rs 832 crore

Hindalco Industries reported a 37 per cent year-on-year (YoY) drop in consolidated net profit or profit after tax (PAT) at Rs 2,411 crore. However, on a sequential basis, the profit jumped 77 per cent.

The consolidated revenue of Hindalco stood at Rs 55,857 crore, which was unchanged on a YoY basis but was up 5 per cent sequentially, the company said in its earnings release.

The consolidated revenue of the aluminium maker will come in at Rs 52,309 crore for the final three months period of FY23.

Hindalco's consolidated EBITDA (earnings before interest, taxes, depreciation and amortisation) – a measure of the

company's overall financial performance – came in at Rs 5,818 crore, down 23 per cent YoY, and up 48 per cent QoQ.

ASK Chemicals sets out sustainability strategy and goals to reduce environmental impacts

ASK Chemicals Group, a global supplier of highper formance industrial resins and materials, has announced its sustainability strategy and targets. On the way to climate neutrality in 2050, ASK Chemicals will steadily reduce its greenhouse gas emissions, such as by decreasing its Scope 2 emissions by 30% until 2030. As part of its sustainability strategy, the company is continuously working to improve its environmental footprint, for example by implementing

closed water cycles. ASK Chemicals' sustainability strategy covers all three pillars of sustainability: environmental, social and corporate governance.
“We are happy and motivated to have achieved this important milestone - an important step forward to further strengthen ESG within our company," says Jens Müller, CTO at ASK Chemicals and responsible for ESG. Dr. Müller continues, “We will now transfer our strategy into the different regions as a holistic global approach, of course with adjustments to local challenges and consonant with cultural diversity.”

Global exchange copper stocks sink to 15-year lows

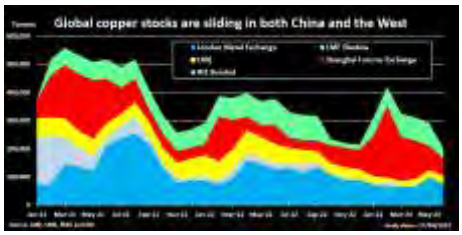
There's a renewed scramble for copper sitting in London Metal Exchange (LME) warehouses.

Headline LME copper stocks have slid from 100,100

tonnes to 77,050 over the last three weeks despite almost 30,000 tonnes of arrivals.

What's arriving is just as quickly turning around and going out again. Available tonnage stands at just 31,900 tonnes, enough to supply the global market for around 11 hours.

Unsurprisingly, the stocks raid has ignited LME time-spreads, the benchmark cash-to-three-months period closing Monday valued at a backwardation of $31 per tonne. It's the highest premium for cash since November last year. The drain on LME copper stocks is puzzling given weaking manufacturing activity in both Europe and the United States.



The closure of Swedish producer Boliden's Ronnskar smelter has opened up a 220,000-tonne supply gap in the European market, but the swoop on LME stocks started before the June 13 fire at the plant and has been focused on Asian and U.S. locations, not European.

It wouldn't be the first time that the LME stocks signal has been refracted, and the lower the stocks, the easier it is to bend the light.

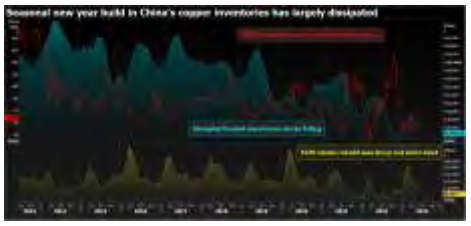
But this is not just a London market phenomenon. Visible stocks everywhere are low.

Copper stocks held by LME, CME, ShFE and INE

GLOBAL PROBLEM

Combined copper stocks registered with the LME, its U.S. counterpart the CME and the Shanghai Futures Exchange (ShFE) totalled 165,000 tonnes at the end of last week.

Global exchange inventory is now down by 45,500 tonnes



on the start of the year and the lowest it's been since 2008.

ShFE copper stocks and bonded

warehouse stocks

SHADOW MOVEMENT

Tightness on the Shanghai Futures Exchange seems to be pulling in metal from the city's bonded warehouse zones.

Bonded stocks held by ShFE's international arm, the International Energy Exchange, have slumped from almost 89,000 at the start of the month to just 35,000.

Peru plans to extend military presence in bid to keep copper shipments flowing

Peruvian authorities are working on a plan to maintain the presence of soldiers along a road used to transport minerals to avoid disruptions to some of the world's top copper mines.

“We have a plan to keep the armed forces close,” Energy and Mines Minister Oscar Vera said in an interview on Tuesday. “We are coordinating so they can stay, which is important.”The highway, known as the mining corridor, is used by MMG's Las Bambas, Glencore's Antapaccay and Hudbay Minerals' Constancia to transport semi-processed copper to a seaport.

The road has been the site of multiple blockades, with Las Bambas a particular focus, including as recently as this year. Indigenous communities often stage protests to push for greater economic benefits for local populations. Such disruptions delay shipments to smelters in China and elsewhere. Vera said the army would stay along the road to work on infrastructure projects, alongside communities. For now, a state of emergency allows for a military presence, although that status will expire soon.

Novelis to trial use of Hydrogen in Recycling Furnaces

Novelis Inc have announced that its Latchford plant in the UK has been awarded £4.6 million to establish hydrogen burning trials as part of the UK Government's £55m Industrial Fuel Switching Competition, as part of the £1bn Net Zero Innovation Portfolio (NZIP), and the wider regional HyNet project.

Novelis joined HyNet in 2017 and has been supporting the development of the regional infrastructure project as well as conducting its own technical feasibility studies on the

use of hydrogen as a direct replacement for natural gas.

"Switching to renewable energy sources is a key initiative to advance on our journey toward carbon-neutral production," said Emilio Braghi, Executive Vice President, Novelis Inc. and President, Novelis Europe. "Besides decarbonizing our own facility, this collaboration drives the industrial decarbonization of the whole North-West region in UK."

With the recently awarded grant by the Department for Energy Security & Net Zero, Novelis' Latchford plant will test the use of hydrogen on one of its recycling furnaces in a demonstration phase in 2024.

"We are proud to be one of the pioneers using hydrogen within the aluminium industry and that these trials at Latchford will additionally advance research on the viability of integrating hydrogen power in our recycling operations around the world," said Allan Sweeney, Plant Manager, Novelis Latchford.

The trial has been set up in collaboration with Progressive Energy, an independent UK energy company, and requires the installation of new burners and regenerators – both capable of operating with hydrogen or a blended hydrogen/gas input – and replacing the furnace lining material with one suitable for hydrogen.

Depending on the final configuration, replacing natural gas with hydrogen to feed the remelting furnace could reduce CO2eq emissions by up to 90% compared to using the same amount of natural gas.

"Decarbonizing our melting processes is a critical lever to achieving our sustainability goals of reducing our carbon footprint by 30% by 2026 and being carbon neutral by 2050 or sooner," said Suzanne Lindsay-Walker, Vice President, Sustainability, Novelis Inc.

In addition to its contribution to HyNet, Novelis' research & development teams worldwide are also investigating the ability to use plasma, electricity, and biomass to power its manufacturing operations.

Uplift in aluminium packaging recycling

According to recent data published on the National Packaging Waste Database (NPWD) by the Environment Agency (EA), aluminium packaging recycling volumes continue to increase – showing an impressive uplift compared to 2022 figures.

In Q1 alone, 40,478 tonnes of aluminium packaging were collected for recycling – a 14% increase year-on-year (35,382). Of this volume, 28,850 tonnes were 'actively' recycled by consumers through kerbside, bring and on-the-go systems (+14% YOY), while 11,323 were recovered from incinerator bottom ash (IBA), with tonnages jumping +20% YOY.

So far this year, a total of 60,621 tonnes have been captured across the UK, representing a 13% increase compared to the same period last year (53,725). While the obligation is lower across all material types, this demonstrates continued progress.

Tom Giddings, executive director of Alupro, commented: “The UK's latest PRN data shows an impressive increase when it comes to separately collected aluminium

packaging, material recovered from IBA and other local protocol fractions. It's positive news indeed that PRNs issued to date this year are already well ahead of target.

"While we can't guarantee that this pace will continue throughout the rest of 2023, with six months of the year – and the busy Christmas period – still to go, the feel is decidedly positive across the supply chain when it comes to outperforming 2022 figures.

"We're still awaiting market data to be submitted by some companies, which once again suggests that enforcement needs to be better and system reform is critical. However, if recycling volumes continue to climb and the obligation remains stable once missing data has been entered, we could be on course for an impressive total tonnage for 2023.

"Although some industry critics had suggested that the high recycling rates experienced during the COVID-19 pandemic were just a short-term trend, it's reassuring to see that impressive volumes have continued. This is, in part, due to changing consumer behaviours, driven by programmes such as Every Can Counts and MetalMatters."

Hydro receives Mercedes-Benz sustainability award

he Mercedes-Benz Supplier Circle event was held in Stuttgart, Germany on June 19. Hydro was one of two companies honored with the Mercedes-Benz Supplier Award in the sustainability category.

The Mercedes-Benz Supplier Award is presented annually to highlight outstanding performance by supplier partners in three categories: innovation, quality and sustainability. The award comes after Mercedes-Benz received the delivery of the first batch of Hydro REDUXA 3.0 low-carbon aluminium earlier this year. The aluminium was produced at Hydro's Årdal plant in Norway with hydroelectric power, contains a minimum 25 percent post-consumer scrap content and its carbon footprint is around 70 percent lower than the European average.

"This award is a fantastic recognition of our efforts to drive sustainability in aluminium production. It demonstrates a key customer's appreciation of Hydro's commitment to decarbonise and minimise environmental impact along the entire aluminium value chain," says President and CEO Hilde Merete Aasheim, who received the award on behalf of Hydro.

Hydro aims to become a net-zero company, making net-zero products, enabling a net-zero society, by 2050. The company is currently on track to reduce its own carbon emissions by 10 percent by 2025 and 30 percent by 2030, compared to 2018 levels. Full decarboniaation will be achieved by increasing the recycling of post-consumer scrap in combination with the introduction of new technology. This includes Carbon Capture Storage (CCS), hydrogen, as well as new in-house technology currently under development with the potential to eliminate carbon emissions from primary aluminium production altogether. Hydro's 2030 environment strategy also sets an ambition to achieve no net-loss of biodiversity in new projects across Hydro's business areas and to eliminate the need for landfilling of recoverable waste and permanent storage of bauxite residue. Mercedes-Benz representatives visited Hydro's bauxite and alumina operations in the Brazilian state of Pará earlier this year.

"I am deeply impressed by Mercedes-Benz' efforts to secure transparency and traceability throughout the value chain. Hydro acknowledges that full commitment to responsibility and sustainability is the only possible way of conducting our operations in Brazil and elsewhere. We are proud of our achievements and thankful that Mercedes-Benz sees us as part of the solution for the green transition," says Aasheim.

Hydro will supply Mercedes-Benz with low-carbon aluminium to reduce the carbon footprint of their vehicle fleet, including the EQ models. Photo: Mercedes-Benz

Carmakers rely on aluminium, a strong and light metal, to reduce weight without compromising safety. Hydro is a large supplier of both aluminium metal and extruded solutions to the automotive industry and has supplied aluminium components to Mercedes-Benz for many years.

In December 2022, the two companies signed a partnership agreement to develop a joint technology roadmap for low-carbon automotive solutions. Hydro's REDUXA 3.0 aluminium, with a carbon footprint of just 2.8 kg CO2 per kg aluminium, is part of this. It passed testing at Mercedes-Benz and will be introduced in large scale production already this year, starting with the EQS and EQE series of electric cars.

"In order to successfully deliver on our decarbonisation strategies, we need to team up with frontrunners like Mercedes-Benz. Working in strategic partnerships with customers and other players in the value chain is an important way for Hydro to achieve our ambitions of shaping the market for low and near-zero carbon aluminium," says Aasheim.

Fives Services Gulf inaugurates its workshop in Bahrain to support its industrial strategy

The workshop started to operate at the beginning of 2021. Spread over 3,800 square meters, it includes offices, warehouses, Machining, Fabrication and Repairable areas.

The inauguration ceremony was attended by HE Mr. Abdulla bin Adel Fakhro, the Minister of Industry and Commerce of Bahrain, who expressed his satisfaction

with the investment made by Fives Services Gulf. He highlighted that the government is open to all forms of investment that contribute to the growth of the local economy and that align with the country's industrial strategy. The French Ambassador in Bahrain, HE Mr. Jérôme Cauchard, also attended the ceremony. Mr. Sebastien Gauguier, the President of the Aluminum Division of Fives Group delivered a speech emphasizing the importance of having a workshop locally: it aligns with Fives Group strategy to be closer to our customers in the GCC.

Fives Services Gulf's CEO, Mr. Frederic Gicquel, said, *"We are proud to be part of the industrial development in Bahrain and support the Government's efforts to improve the foreign investor experience. This workshop will enable us to provide better quality services to our clients in the region and contribute to the sustainable growth of the industrial sector."* The company provides services for the aluminium industry, but also for industries such as steel, cement, and high precision machining from its base in Bahrain.

Fives Services Gulf employs 134 individuals in the GCC, with 65% of its workforce being Bahraini nationals, 12% of women, and gathering 8 different nationalities. In addition, through its partnership with Tamkeen, under the Fives International Program, the company sent 14 Bahraini students abroad in the companies of the Fives group for internships this year.

Amin Sultan, the Chief Power Officer (CPO) of Aluminium Bahrain BSC (Alba), was also present during the inauguration. Speaking at the ceremony, he stressed about the importance of maintaining a sustainable production process for aluminum and highlighted the significance of Alba's partnership with Fives as the Company charts its ESG journey in line with the Kingdom's objectives towards Net Zero Emissions by 2060.

Alba is delighted to have a strong partnership with Fives and look forward to continuing this successful collaboration in the future.

The French Ambassador of France in Bahrain, Mr. Jerome Cauchard, said, *"The inauguration of Fives Services Gulf workshop is a new example of the cooperation between France and Bahrain in the industrial sector. I commend Fives group commitment to a sustainable industry, as well as the remarkable regional presence."*

Rio Tinto to expand its AP60 low-carbon aluminium smelter in Quebec

Rio Tinto will invest $1.1 billion (CAN$1.4 billion) to expand its state-of-the-art AP60 aluminium smelter equipped with low-carbon technology at Complexe Jonquière in Canada. The total investment includes up to $113 million (CAN$150 million) of financial support from the Quebec government. This expansion, which will coincide with the gradual closure of potrooms at the Arvida smelter on the same site, will enable Rio Tinto to continue meeting customers' demand for low-carbon, high-quality aluminium for use in transportation, construction, electrical and consumer goods.

The investment will add 96 new AP60 pots, increasing capacity by approximately 160,000 metric tonnes of primary aluminium per year, enough for 400,000 electric cars. As a result, there will be a total of 134 AP60 pots and a capacity of approximately 220,000 tonnes per annum. Construction will run over two and a half years, with commissioning of the new pots expected to start in the first half of 2026 and the smelter fully ramped up by the end of 2026. Once completed, the expanded smelter is expected to be in the first quartile of the industry cost curve.This new capacity will offset the 170,000 tonnes of capacity lost through the gradual closure of potrooms at the Arvida smelter from 2024. In addition, Rio Tinto will add 30,000 tonnes of new capacity through the commissioning of the previously announced recycling facility at Arvida in the first quarter of 2025. These facilities will ensure Rio Tinto's casting facilities at Complexe Jonquière continue to provide value added products that meet customers' needs, including integrating recycled post-consumer aluminium into primary aluminium alloys.

The AP60 smelting technology was developed by Rio Tinto's Research and Development teams and is amongst the most efficient and lowest carbon technology currently available at commercial scale. When combined with the hydropower used at Rio Tinto's operations in Canada, it generates one seventh of greenhouse gases per tonne of aluminium when compared with the industry average, and half the emissions when compared to the technology currently used at the Arvida smelter.[1]

The project will generate up to 1,000 jobs during the peak of construction and approximately 100 permanent jobs will be maintained as a result of the expanded smelter.

Rio Tinto Chief Executive Jakob Stausholm said: "This investment is aligned with our strategy to decarbonise our value chains and grow in materials essential for the energy transition. Our AP60 technology is already proven and producing some of the lowest carbon aluminium in the world, thanks to the expertise of our highly qualified workforce and access to renewable hydropower. This is the most significant investment in our aluminium business for more than a decade and it will further strengthen Rio Tinto's high-quality and low-carbon offering to our customers as they also work to reduce their own carbon footprint.

"I would like to thank both the Government of Canada and Government of Quebec for their support in progressing this project. We are also continuing to work together on the future implementation of the ELYSIS™ zero carbon smelting technology at our Quebec facilities."

Quebec Premier François Legault said: "A great momentum is building in our regions for our green economy. The aluminium industry in Saguenay-Lac-Saint-Jean has always been a real source of pride and has created considerable wealth in the region. Today's announcement will breathe new life into this industry with greener, less polluting processes. The use of AP60 pots will halve GHG emissions in aluminium production. With the upcoming ELYSIS™ technology, Quebec aims to become the world champion of green aluminum."

The Honourable François-Philippe Champagne, Canada's Minister of Innovation, Science and Industry, said: "Canada has all it takes to be the global green supplier of choice. And that is why our government is collaborating with key industry actors like Rio Tinto to produce the world's greenest aluminium. By supporting the production of green metals, we ensure Canada will remain at the forefront of the economy of tomorrow. When economic benefits are paired with a commitment to developing green solutions, it's a win for our industry, our cleantech ecosystem and our workers."

In addition to this investment in low-carbon aluminium, Rio Tinto is working with the Governments of Canada and Quebec towards a deployment of the ELYSIS™ zero carbon aluminium smelting technology at its Saguenay–Lac-Saint-Jean facilities. With the current development pathway, ELYSIS aims to have its technology available for installation from 2024 and the production of larger volumes of carbon-free aluminium approximately two years later.

Rio Tinto and the Government of Canada have also signed a Memorandum of Understanding that deepens their commitment to strengthen supply chains for low-carbon primary metals, critical minerals and other value-added products. The cooperation will also aim to support projects that have the potential to grow Rio Tinto's activities in Canada, including the current and future decarbonisation of the aluminium supply chain.

The investment in the AP60 smelter is already included as replacement capital expenditure in Rio Tinto's capital investment guidance for 2023 to 2025. The Group's capital expenditure guidance of $9 billion to $10 billion in both 2024 and 2025 remains unchanged.

Sebi imposes Rs 30 lakh penalty on Vedanta Ltd for incorrect disclosures

Markets regulator Sebi on Friday imposed a fine of Rs 30 lakh on Vedanta Ltd for failing to provide correct disclosures, including on its website, in relation to certain announcements made by the company last year.

In a 24-page order, Sebi said the act of Vedanta Ltd (noticee) to carry news not pertaining to its operations on the website leads to providing misleading information to the investors of the public limited company.

"All these events may lead one to cast aspersions on the intent of the company to host the press release on its website," the regulator said as it imposed a fine of Rs 30 lakh on the company for certain violations of norms.

The fine has been slapped for the failure to provide correct disclosures, including misrepresentation on the company's website.

In March this year, the Securities and Exchange Board of India (Sebi) issued a show cause notice to Vedanta Ltd.

The matter pertained to announcements related to the semiconductor business, including the company's holding company Volcan Investments Ltd (VIL) partnering with Foxconn to make semiconductors in the country. Initially, a release in February 2022 said that Vedanta Ltd has partnered with Foxconn and upon the stock exchanges seeking clarification, the company said the deal was to be undertaken by VIL.

In September 2022, Vedanta Ltd issued a release, which was also available on its website, saying that it has signed MoUs to set up semiconductors and display fab units.

As the release was found to be contradictory to the company's clarification given in February, stock exchange NSE asked it to clarify. Then, the company informed the business of manufacturing semiconductors is not under it and would be undertaken by VIL, as per the regulator.

Sebi said that while Vedanta Ltd removed the "offending press release" after the hearing in the matter, it still remains a question as to how the company continued to carry the press release on its website.

"The efforts taken by the company to take corrective actions were wanting and the actions were far delayed," Sebi Adjudicating Officer Barnali Mukherjee said in the order.

Conceptually, Sebi said the events pertaining to the listed company only should be carried on the website. However, here is a case where the events of the promoter, not related to the listed company have been carried on the website, it added.

"Vedanta, being a multi-billion dollar company with business across jurisdiction and Vedanta Resources Ltd (VRL) with a presence among so many companies with listed companies across the globe, it is unfathomable as to how an event pertaining to the ultimate holding company, i.e. Volcan Investments Limited (VIL) found its way to the website of Vedanta Ltd, the listed company in India," the order said.

Sebi also noted that it is clear from the chronology, that the event of VIL was known long back in February 2022 and that exchanges had sought clarifications from the notice about the relevance of the news to the notice itself.

“Having had this knowledge as well as being fully aware of the fact that the event was in no way related to the notice, i.e. listed company, the notice egregiously hosted the press release on its website. Not only this, it made the press release on its letterhead itself giving a clear indication that the news pertained to the listed entity," it said.

Vedanta likely to sell copper plant in Tamil Nadu for Rs 4,500 crore

Vedanta Ltd, which is planning to restart its copper plant in Tamil Nadu, is weighing the option to sell the unit at a valuation of up to Rs 4,500 crore, banking sources have said.

The company had sought expressions of interest (EoIs) for the plant in June last year but did not get a good response as the unit was shut for the last five years.

“The process has now restarted with the bankers reaching out to potential bidders,” said a banker.

On June 12, the company had invited EoIs for carrying out plant 'restart activities' after a Supreme Court direction.

The plant was closed after an order was issued by the Tamil Nadu Pollution Control Board (TNPCB).

Vedanta had moved the Supreme Court against the closure and the final judgment is expected by August.

An email sent to Vedanta did not elicit any response.

Vedanta Resources (VRL), the parent firm of Vedanta Ltd, is currently busy raising funds to repay its debt.

The funds raised by Vedanta by selling the plant will help in its own capex of $1.7 billion for the year, bankers said.

Analysts expect VRL to be successful at servicing its debt maturities in the next few months, aided by the recent $1.3 billion fundraising efforts.

Analysts say more funding channels are still open like dividend upstreaming, domestic bond private placement of up to Rs 2,100 that was recently approved by the board and asset sale.

VRL has $1.7 billion of short-term investments in various bank deposits, quoted bonds and mutual funds as of March 2023.

This, analysts at Credit Sights believe, could be liquidated if the need arises and at potential losses from mark-to-market.

“Pledging of residual promoter stake in Hindustan Zinc (HZL) by Vedanta Ltd for up to 2.7 per cent stake, is estimated to raise an additional $190 million of debt.

We also think VRL's timely debt repayments so far could support lending sentiment.

"While we anticipate lack lustre commodity prices through FY24, we think the impact is mitigated by lowered FY24 production cash costs and higher FY24 production guidance,” said analysts at Credit Sights. Vedanta's shares closed at Rs 281 a share, down by 0.5 per cent.

Lithium-ion battery recycling and sustainability

Lithium-ion batteries (LIBs) have emerged as a game-changing innovation in the realm of sustainable energy and storage technologies, commanding widespread attention and playing a vital role in powering electric vehicles, providing sustainable energy storage systems and fueling consumer electronics. However, their growing popularity is overshadowed by legitimate concerns regarding their environmental impact. With the depletion of natural resources and the improper disposal of these batteries posing significant challenges, the need for responsible recycling methods has become increasingly evident. Lithium-ion battery recycling—an essential practice that not only promotes sustainability but also addresses pressing concerns about environmental safety and optimum utilization of natural resources. The Importance of Lithium-ion Battery RecyclingAt the core of the endeavor to address the environmental challenges posed by lithium-ion batteries (LIBs) lies the crucial role of battery recycling. This approach holds immense significance as it not only preserves valuable resources but also upholds environmental governance standards. By embracing responsible recycling practices, we have the power to effectively mitigate the detrimental environmental consequences entwined with battery production and disposal. Through these concerted efforts, we can pave the way for a future that is cleaner, more sustainable, and in harmony with our ecological surroundings.

Passenger vehicle wholesalers post record sales in May

Society of Indian Automobile Manufacturers (SIAM) has released the latest Indian auto industry performance report for the month of May, 2023. According to the data, the total production of passenger vehicles, three wheelers, two wheelers, and quadricycle stood at 21,24,235 units in May this year.

As per SIAM data, passenger vehicles sales in the country were 3,34,247 units in the last month, returning to a growth of 13.5%, compared to May 2022. Similarly, a total of 48,732 units of three-wheeler were sold in the country in May 2023, posting a growth of 70.4% compared to the same month last year.

In the two-wheeler category, sales were 14,71,550 units in May 2023. As compared to May 2022, the two-wheeler sales in the country grew by 17.4%.

Commenting on sales data of May 2023, Mr Vinod Aggarwal, President, SIAM said, "All the segments viz. Passenger Vehicles, Two-Wheelers and Three-Wheelers have posted growth in double digits in May 2023, compared to May 2022. We anticipate this trend to continue supported by the prevalent economic environment. The Indian Automobile Industry is currently in a transition phase with new powertrain technologies offered to consumers ranging from Electrified, Bio-Fuels and Gaseous Fuel driven vehicles which are being enabled through sound policies of the Government."

Commenting on May-2023 performance, Mr Rajesh Menon, Director General, SIAM said, "Sales of Passenger Vehicles of May 2023 has been the highest ever in May, returning a growth of 13.5%, compared to May 2022. Two-Wheelers also posted a growth of 17.4% in May 2023, compared to last year, but are still lower than 2016-17 levels. Domestic sales of Three-Wheelers in May 2023 grew by 70.4% compared to May 2022, although on a low base, but is still lower than the 2018-19 levels."

SIAM

Segment wise Comparative Production, Domestic Sales & Exports data for the month of May 2023

(Number of Vehicles)

Category	Production		Domestic Sales		Exports	
Segment/Subsegment	May		May		May	
	2022	2023	2022	2023	2022	2023
Passenger Vehicles (PVs)*						
Passenger Cars	1,58,310	1,63,619	1,24,060	1,20,364	37,824	35,806
Utility Vehicles (UVs)	1,27,424	1,66,178	1,16,255	1,55,184	19,041	16,274
Vans	11,107	13,770	10,736	12,821	23	1,157
Total Passenger Vehicles (PVs)	**2,96,841**	**3,45,567**	**2,51,051**	**2,88,369**	**56,888**	**53,237**
Three Wheelers						
Passenger Carrier	49,892	61,700	20,174	38,590	26,989	25,442
Goods Carrier	8,143	8,027	6,952	7,531	507	196
E-Rickshaw	1,399	1,552	1,273	2,314	-	-
E-Cart	225	370	196	297	-	-
Total Three Wheelers	**59,659**	**71,649**	**28,595**	**48,732**	**27,496**	**25,638**
Two Wheelers						
Scooter/ Scooterettee	4,17,348	4,90,007	3,98,099	4,46,593	27,080	40,687
Motorcycle/Step-Throughs	11,54,746	11,77,673	8,19,940	9,89,120	3,20,619	2,19,204
Mopeds	36,820	38,974	35,148	35,837	48	54
Total Two Wheelers	**16,08,914**	**17,06,654**	**12,53,187**	**14,71,550**	**3,47,747**	**2,59,945**
Quadricycle	**202**	**365**	**28**	**35**	**96**	**312**
Grand Total	**19,65,616**	**21,24,235**	**15,32,861**	**18,08,686**	**4,32,227**	**3,39,132**

* BMW, Mercedes, JLR, Tata Motors and Volvo Auto data is not available

Society of Indian Automobile Manufacturers (13/06/2023)

Statistics

SIAM

Summary Report: Cumulative Production, Domestic Sales & Exports data for the period of April - May 2023

Report I

(Number of Vehicles)

Category / Segment/Subsegment	Production April-May		Domestic Sales April-May		Exports April-May	
	2022-23	2023-24	2022-23	2023-24	2022-23	2023-24
Passenger Vehicles (PVs)*						
Passenger Cars	3,09,708	3,06,552	2,36,983	2,46,122	67,275	58,752
Utility Vehicles (UVs)	2,75,030	3,30,487	2,43,537	3,03,189	35,962	33,984
Vans	22,575	24,691	22,247	23,329	149	1,441
Total Passenger Vehicles (PVs)	**6,07,313**	**6,61,730**	**5,02,767**	**5,72,640**	**1,03,386**	**94,177**
Three Wheelers						
Passenger Carrier	91,466	1,16,409	32,729	73,198	62,364	48,439
Goods Carrier	15,709	14,210	14,300	12,898	912	293
E-Rickshaw	1,868	3,290	2,103	4,905	-	-
E-Cart	493	501	460	516	-	-
Total Three Wheelers	**1,09,538**	**1,34,410**	**49,592**	**91,617**	**63,276**	**48,732**
Two Wheelers						
Scooter/ Scooterettee	8,26,608	9,86,203	7,86,541	9,10,982	63,240	90,222
Motorcycle/Step-Throughs	22,40,289	22,23,444	15,55,300	18,28,394	6,89,892	4,27,856
Mopeds	72,780	75,409	73,928	70,762	54	54
Total Two Wheelers	**31,39,677**	**32,85,056**	**24,15,769**	**28,10,138**	**7,53,186**	**5,18,132**
Quadricycle	**303**	**679**	**54**	**96**	**162**	**608**
Grand Total	**38,56,831**	**40,81,875**	**29,68,182**	**34,74,491**	**9,20,010**	**6,61,649**

* BMW, Mercedes, JLR, Tata Motors and Volvo Auto data is not available

Society of India Automobile Manufacturers (13/06/2023)

SIAM

Category & Company wise Summary Report for the month of May 2023 and Cumulative for April-May 2023

Report II

(Number of Vehicles)

Category / Segment/Subsegment / Manufacturer	Production May		Production April-May		Domestic Sales May		Domestic Sales April-May		Exports May		Exports April-May	
	2022	2023	2022-23	2023-24	2022	2023	2022-23	2023-24	2022	2023	2022-23	2023-24
Passenger Vehicles (PVs)												
FCA India Automobiles Pvt Ltd	1,237	820	2,578	2,006	928	734	1,914	1,292	248	361	514	768
Force Motors Ltd	49	94	148	98	56	8	144	8	-	-	-	-
Honda Cars India Ltd	10,552	6,425	19,674	11,376	8,188	4,650	15,052	9,373	1,997	587	4,031	2,950
Hyundai Motor India Ltd	48,300	53,177	1,07,300	1,13,668	42,293	48,601	86,294	98,302	8,970	11,000	21,170	19,500
Isuzu Motors India Pvt Ltd	677	23	900	84	60	39	83	73	194	-	194	-
Kia Motors India Pvt Ltd	24,225	24,869	51,375	54,771	18,718	18,756	37,737	41,982	5,376	6,008	13,453	13,753
Mahindra & Mahindra Ltd	23,734	31,022	48,300	64,241	26,904	32,386	49,430	67,584	594	1,078	1,237	1,927
Maruti Suzuki India Ltd	1,60,450	1,76,216	3,13,413	3,20,315	1,24,474	1,43,709	2,46,430	2,81,028	27,018	26,287	45,234	43,121
MG Motor India Pvt Ltd	3,718	6,120	6,926	11,538	4,008	5,006	8,016	9,557				
Nissan Motor India Pvt Ltd	5,245	4,874	11,245	8,215	2,131	2,618	4,241	5,236	5,693	2,013	6,922	2,946
PCA Motors Pvt. Ltd	22	1,929	57	2,859	24	506	75	1,809	-	12	-	368
Renault India Pvt. Ltd	8,240	3,649	16,308	6,517	5,010	4,695	12,604	8,948	3,765	1,475	4,582	1,550
SkodaAuto India Pvt Ltd	3,482	4,464	7,869	8,353	4,634	3,547	9,756	7,596	-	103	-	327
Toyota Kirloskar Motor Pvt Ltd	3,950	27,577	12,694	47,829	10,151	13,079	24,928	32,376	18	1,031	32	2,979
Volkswagen India Pvt Ltd	2,892	4,369	7,526	9,642	3,509	3,786	7,114	8,318	3,015	3,922	5,817	4,488
Total Passenger Vehicles (PVs)	**2,96,841**	**3,45,567**	**6,07,313**	**6,61,730**	**2,51,051**	**2,88,369**	**5,02,767**	**5,72,640**	**56,868**	**53,237**	**1,03,386**	**94,177**

SIAM

Category & Company wise Summary Report for the month of May 2023 and Cumulative for April-May 2023

Report II

(Number of Vehicles)

Category / Segment/Subsegment / Manufacturer	Production May		Production April-May		Domestic Sales May		Domestic Sales April-May		Exports May		Exports April-May	
	2022	2023	2022-23	2023-24	2022	2023	2022-23	2023-24	2022	2023	2022-23	2023-24
Three Wheelers												
Atul Auto Ltd	1,757	983	3,310	1,726	1,418	1,101	2,766	1,683	376	181	621	294
Bajaj Auto Ltd	29,416	46,366	54,409	87,619	16,178	33,555	25,096	64,838	10,067	13,550	30,120	25,203
Continental Engines Pvt Ltd	549	986	970	870	599	353	1,075	741	-	-	-	-
Force Motors Ltd	164	336	304	546					308	448	392	588
Mahindra & Mahindra Ltd	3,744	5,007	6,287	10,456	3,645	5,851	6,054	11,403	-	7	18	13
Piaggio Vehicles Pvt Ltd	6,865	7,122	15,871	12,778	5,536	6,530	11,395	10,035	2,376	1,470	3,518	2,799
TVS Motor Company Ltd	15,170	10,865	28,387	20,407	1,255	1,312	2,603	2,917	14,668	10,002	28,607	19,835
Total Three Wheelers	**59,659**	**71,649**	**1,09,538**	**1,34,410**	**28,595**	**48,732**	**49,592**	**91,617**	**27,496**	**25,638**	**63,276**	**48,732**
Two Wheelers												
Ather Energy Pvt. Ltd	3,058	9,742	7,315	18,927	3,687	9,070	7,301	18,416	-	-	-	-
Bajaj Auto Ltd	2,86,486	3,22,018	5,72,877	5,79,856	98,102	1,94,884	1,89,035	3,76,374	1,50,397	1,72,885	3,47,875	2,19,042
Chetak Technology Ltd	-	122	-	495	-	127	-	265	-	-	-	-
Hero MotoCorp Ltd	4,50,699	4,69,930	8,56,368	9,50,606	4,66,463	5,08,309	8,84,956	9,94,493	20,236	11,135	40,350	21,088
Honda Motorcycle & Scooter India Pvt Ltd	3,40,012	3,76,563	6,86,583	6,91,481	3,20,557	3,11,144	6,38,597	6,49,434	37,036	18,248	74,331	54,707
India Kawasaki Motors Pvt Ltd	221	289	338	369	268	304	502	720	-	-	-	-
India Yamaha Motor Pvt Ltd	68,325	75,518	1,36,509	1,45,057	44,907	53,571	88,875	1,06,610	23,574	15,642	50,837	35,288
Mahindra Two Wheelers Ltd	53	-	53	-	34	-	45	-	-	-	-	-
Okinawa Autotech Pvt. Ltd	10,320	-	20,431	-	10,542	551	20,734	617	-	-	-	-
Piaggio Vehicles Pvt Ltd	7,043	9,890	14,198	9,208	4,731	2,601	5,954	5,591	1,800	1,457	3,620	2,503
Roya -Enfield (Unit of Eicher Motors)	70,096	82,012	1,37,816	1,53,026	53,525	70,795	1,07,377	1,39,676	10,118	8,696	18,421	10,821
Suzuki Motorcycle India Pvt Ltd	72,550	67,606	1,35,517	1,74,742	60,516	67,040	1,14,845	1,34,299	11,308	24,276	25,686	45,748
Triumph Motorcycles India Pvt Ltd	29	13	88	47	58	34	176	97				
TVS Motor Company Ltd	2,99,222	3,27,708	5,51,283	5,74,142	1,91,452	2,52,090	3,72,015	4,85,048	95,570	65,605	1,95,065	1,28,435
Total Two Wheelers	**16,08,914**	**17,06,654**	**31,39,677**	**32,85,056**	**12,53,187**	**14,71,550**	**24,15,769**	**28,10,138**	**3,47,747**	**2,59,945**	**7,53,186**	**5,18,132**
Quadricycle												
Bajaj Auto Ltd	202	365	303	679	28	35	54	96	96	312	162	608
Total Quadricycle	**202**	**365**	**303**	**679**	**28**	**35**	**54**	**96**	**96**	**312**	**162**	**608**
Grand Total	**19,65,616**	**21,24,235**	**38,56,831**	**40,81,875**	**15,32,861**	**18,08,686**	**29,68,182**	**34,74,491**	**4,32,227**	**3,38,132**	**9,20,010**	**6,61,649**

Society of Indian Automobile Manufacturers (13/06/2023)

Inviting Builders, Construction Engineers, Architects, Interior Designers & Fabricators to visit Indias Exclusive Expo Stainless Steel Industry

2nd Edition

GSSE

GLOBAL STAINLESS STEEL EXPO 2023

14 15 16 SEPTEMBER

BOMB AYEXHIBITION CENTRE | MUMBAI

POWERED BY

JSL JINDAL STAINLESS

LAST FEW STALLS AVAILABLE. BOOK NOW

FOCUS 2023

Flat & Long Products | Duplex | Bars | Rebards | Ingots | Pipes | Tubes | Sheets | Coils | Wires | Finished Goods | Flanges | Fittings | Fasteners | Heat Exchangers | Instrumentation | Machinery | Technology and much more

HIGHLIGHTS

150+ Exhibitors | 10,000+ Trade Visitors | 100000+ Sq. Ft Expo Hall | International Pavilions | CEO Round Table | Industry & Technical Seminars | B2G Meetings

Timings: 10 am to 6 pm | Entry Free

TITANIUM PARTNER

RIMJHIM ISPAT

PLATINUM PARTNERS

SYNERGY STEELS LIMITED

LAXCON STEELS LIMITED

DIAMOND PARTNERS

VIRAJ PROFILES PRIVATE LIMITED

SAL

GOLD PARTNERS

JINDAL SAW LTD.

minox

outokumpu

SILVER PARTNERS

mangalam

CHANDAN STEEL LIMITED

SALEM STAINLESS STEEL SUPPLIERS PVT LTD

AE

ORGANISED BY

virgo COMMUNICATIONS AND EXHIBITIONS (P) LTD

Head Office:
250 Virgo House, 7th Main,
Amarjyoti Layout, Domlur Extn.
Bangalore 560 071, India
T: +91 80 25357028/29
E: info@virgo-comm.com

Branch Office:
412, Atlanta Estate, Near Virwani Ind. Estate
Itt Bhatti, Goregaon East
Mumbai- 400 063, India
M: +91 99877 53824
E: anurag@virgo-comm.com

MEDIA SUPPORT

METALWORLD

SCAN TO REGISTER

FOLLOW US

www.virgo-comm.com | www.gssexpo.com