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The outbreak of COVID-19 has caused unprecedented challenges to the business world. India is one of the few countries which has been able to contain the damage to the manageable limits. Thanks to Government, Corona fighters and cooperation of all citizen of India.

Among difficult circumstances and supply-chain constraints, we have tried to keep the date of publishing this issue of Forgings Today for maintain the flow of information to our readers.

We have tried to devote this issue to technology to pop up the current atmosphere of technology enhancement be it in medical research or engineering field.

The cover story therefore has been devoted to ‘Role of IOT in improving global competitiveness for forging industry’. IOT is the new buzz word in the industry. Every other WebEx is on IOT and IOT means Internet of Things. It is projected as the next big industrial revolution which will change the way world will start working.

Other technological developments highlighted in this issue include, new modular generation of TIG welding, three game changing technologies for electric vehicles, new wireless charging designs and new system for die monitoring.

There has been rescheduling of events owing to lockdown. Revised dates have been incorporated for the events which have already decided on the new dates.

We hope this issue of Forgings Today finds you, your colleagues and your loved ones safe and healthy.

Rajendra Kumar Jain
Editor, Forgings Today
May 1, 2020

**Editorial Note**

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Role of IOT in Improving Global Competitiveness for Forging Industry

Dr Vasant Khisty, CEO, Sammy Consulting

IOT is the new buzz word in the industry. Every other WebEx is on IOT and IOT means Internet of Things. It is projected as the next big industrial revolution which will change the way world will start working.

What is IOT and what it means to the forging industry?

The Internet of Things (IOT) refers to the ever-growing network of physical objects that feature an IP address for internet connectivity, and the communication that occurs between these objects and other Internet-enabled devices and systems.

The Internet of Things extends internet connectivity beyond traditional devices like desktop and laptop computers, smartphones and tablets to a diverse range of devices and everyday things that utilize embedded technology to communicate and interact with the external environment, all via the Internet.

What is the relevance of IOT in forging industry?

Forging industry is undergoing competitive pressures. There are several wastages in the process due to no real time information and decision making. Forging equipments are getting expensive and they are meant to forge product rather than standing still. It means the utilisation of the equipment has to be improved and all kinds of wastages have to be eliminated. This can happen by eliminating delays due to in action or delay in decision making by man. So how IOT helps? It improves the communication between machines tools, auxiliary machines etc. in real time so that corrective actions are taken in real time without the intervention of man where ever possible.

The major need of forging industry to be globally competitive is:
To match global quality standards.
To be connected to customer real time.
To eliminate every possible waste.
To achieve high capacity utilisation.
To achieve high ROI.
To achieve flexibility.
To optimise tool life.
Real time maintenance.
Reduce time to market.
Reduce inventory.
Remote access to the data.
Real time quality management.
Real time yield management.

Having understood the need of the forging industry let’s see how IOT acts as an enabler of these objectives.

The Internet of Things (IOT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human - to - computer interaction.

A thing, in the Internet of Things, can be a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low - or any other natural or man-made object that can be assigned an IP address and provided with the ability to transfer data over a network.

IOT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS), micro services and the Internet. The convergence has helped tear down the silo walls between operational technologies (OT) and information technology (IT), allowing unstructured machine-generated data to be analysed for insights that will drive improvements.
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How IOT works?
Billions of connected devices are part of the Internet of Things. They use built-in hardware and software to send and receive data via various communication protocols. They might use our smartphones as their gateway to the Internet, connect to some other piece of hardware in our homes or factories that’s acting as a hub or connect directly through our home Internet service. They often send data to cloud-computing servers where it’s then aggregated and analysed. We can usually access the results via apps or browsers on our mobile devices or home computers.

Architecture of IOT

Sensors: A sensor is a transducer, whose purpose is to sniff a wide variety of information generate output as an electrical or optical signal.

The sensors in the IOT are called as a node that will collect information and sent to the outside world, through communication protocols – Bluetooth, BLE, ZigBee, and Z-wave, WI-Fi or through wired communication. These nodes will be forwarding the data to a device called Gateway.

IOT Gateway: Gateway acts as a bridge between these IOT objects and the internet. Gateways can connect to the IOT devices that communicate via specific protocols, store and pass the information and then send them over to cloud servers for processing and analytics.

Hardware and software level encryption is built right into the gateway to provide a secure channel for communication. However, the communication flow can also be in reverse manner when user/manufacturer want to actuate any object.

User/ manufacturer will give some input in the form of SMS, Push, Email, Call, etc. That information is forwarded to the internet i.e. Cloud.

The cloud then process the information identifies the particular object through the IP address and pushes the information through the communication protocols to the Gateway.

Gateway will trigger the actuator that will be responsible for controlling and moving the system or object. The massive data generated from IOT can be analysed in the cloud with big data solutions to gain insights and patterns of usage and behaviour of machines and humans.

These patterns are then analysed, and if found irrelevant, then accordingly the information is send to the user, to control & monitor their devices. These apps push the important information on your hand-held devices & help to send commands to your Smart Devices.

How do we use IOT to improve efficiencies in forging Industry?
Let’s take an example of flash less forging. In flash less forging a component like gear can be manufactured without throwing out flash. This requires efficient control of cut weight temperature and the pancake diameter otherwise we can get fins and have die breakages etc.

Normally the package diameter in a mechanical press depends on the die surface, the weight of billet, the temperature of billet and the dies. In IOT architecture the billet diameter can be measured in real time with sensors and the same information can be passed to the online billet shearing machine, billet heaters and to a wedge below the upset die to take the die up and down.

These all can be done internally ether through internet or computer to computer communication or through the cloud. Managing same through cloud can give a remote access to various participants of the process like a plant manager gets information at a remote place and he can switch off the machine if he feels the tool needs to be changed. Cloud can generate a lot of historical data and analysis like Cp Cpk for the process, traceability of the process etc.
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There are numerous ways real time actions can be taken to avoid wastes and delays in the value chain to make forging a more efficient process.

**Industry 4.0**

IOT is considered to be the fourth industrial revolution as explained in the following figure.

Industry 4.0 or the fourth industrial revolution, is a collective term embracing a number of contemporary automation, data exchange and manufacturing technologies. Industry 4.0 facilitates the vision and execution of a “Smart Factory”.

The term “Industry 4.0” originates from a project in the high-tech strategy of the German government, which promotes the computerization of manufacturing.

**There are four design principles behind Industry 4.0**

**Interoperability:** The ability of machines, devices, sensors, and people to connect and communicate with each other via the Internet of Things (IOT)

**Information transparency:** The ability of information systems to create a virtual copy of the physical world by enriching digital plant models with sensor data.

**Technical assistance:**

First, the ability of assistance systems to support humans by aggregating and visualizing information for making informed decisions and solving urgent problems.

Second, the ability of cyber physical systems to physically support humans by conducting a range of tasks that are unpleasant, too exhausting, or unsafe for their human co-workers.

**Decentralized decisions:** The ability of cyber physical systems to make decisions on their own and to perform their tasks as autonomous as possible.

**Challenges:**

There are various challenges which are being attended and resolved over a period of time.

- IT security issues
- Reliability and stability needed for critical machine-to-machine communication
- Need to maintain the integrity of production processes
- Need to avoid any IT snags, those would cause expensive production outages
- Need to protect industrial knowhow
- Lack of adequate skill-sets to expedite the march towards fourth industrial revolution
- Threat of redundancy of the corporate IT department
- General reluctance to change by stakeholder

**Summary**

Indian Forging Industry needs to be competitive in order to do so manufacturing costs have to be reduced, wastages of all kind has to be eliminated. Real time corrective action is required. A Scientific and analytical approach is required, to establish a communication for information and action.

IOT can play a major part in reducing wastages by automatic corrective action, Data management and analysis and integrating all the partners in real time.
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Forgings News and Developments

Bharat Forge expects to miss revenue growth target

India’s largest exporter of automotive parts said it might not meet its revenue growth target in the upcoming financial year as operations stalled in its overseas and domestic plants amid the coronavirus pandemic.

With Indian operations shut down fully and most key clients in the US and Europe also operating at minimal capacities, Covid-19-related disruption are expected to significantly impact performance in the financial year ending March 2021, Bharat Forge said in a conference call. “Originally, the company had targeted 10-12 percent revenue growth in India and some growth in overseas in FY21, but this is not likely to play out now.”

Equity markets across the world witnessed the worst selloff since the 2008 crisis as the rapidly spreading virus—that infected more than 3 lakh people worldwide and killed over 14,000—threatened to push the global economy into a recession. Indian indices, too, have tracked the global peers. The virus outbreak, along with a prolonged slowdown in sales of automakers in India and a crude price crash, led to a 41 percent slump in shares of Bharat Forge since the start of this year.

All plants were shut down in India from March 23 and all international plants would be shut down from March 27. Most clients are expected to resume operations from mid-April. Bharat Forge continues to service key clients like Cummins and Caterpillar that are continuing production post-government approvals.

Expect a deferment of growth plans by 10-12 months. 10-12 percent growth expected in India in FY21 and some growth in international markets. Significant consignments are stuck at ports, which could negatively impact fourth quarter FY20 performance.

Orders of U.S. Class 8 trucks likely to decline 10-15 percent next year, owing to the lockdown (earlier estimated U.S. Class 8 industry volumes at 240,000 units). Oil and gas segment accounts for only 5-6 percent of revenue and is thus not very relevant for the company now.

Management continues to cut cost, particularly manpower-related. If there was no Covid-19 impact, overseas subsidiaries would have made a profit and positive cash flows.

Source: bloombergquint.com

Electric cars produce less CO2 than petrol vehicles

Electric vehicles produce less carbon dioxide than petrol cars across the vast majority of the globe – contrary to the claims of some detractors, who have alleged that the CO2 emitted in the production of electricity and their manufacture outweighs the benefits.

The finding is a boost to governments, including the UK, seeking to move to net zero carbon emissions, which will require a massive expansion of the electric car fleet. A similar benefit was found for electric heat pumps.

In the UK, transport is now the biggest contributor to the climate crisis and domestic heating has been stubbornly stuck on natural gas for much of the country.

Across the world, passenger road vehicles and household heating generate about a quarter of all emissions from the burning of fossil fuels. That makes electric vehicles essential to reducing overall emissions, but how clean an electric vehicle is also depends on how the electricity is generated, the efficiency of the supply and the efficiency of the vehicle.
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Scientists from the universities of Exeter, Nijmegen and Cambridge conducted lifecycle assessments that showed that even where electricity generation still involves substantial amounts of fossil fuel, there was a CO2 saving over conventional cars and fossil fuel heating.

They found that in 53 out of 59 regions, comprising 95% of the world, electric vehicles and domestic heat pumps generate less carbon dioxide than fossil fuel powered cars or boilers. The only exceptions are heavily coal-dependent countries such as Poland.

In countries such as Sweden, which gets most of its electricity from renewable sources, and France, which is largely powered by nuclear, the CO2 savings from using electric cars reach as high as 70% over their conventional counterparts. In the UK, the savings are about 30%. However, that is likely to improve further as electric vehicles grow even more efficient and more CO2 is taken out of the electricity generating system.

The Guardian believes that the problems we face on the climate crisis are systemic and that fundamental societal change is needed. We will keep reporting on the efforts of individuals and communities around the world who are fearlessly taking a stand for future generations and the preservation of human life on earth. We want their stories to inspire hope.

Source: theguardian.com

**Awards for Steel Excellence-2020**

Reflecting the global nature of the steel industry, about 90 finalists were named from countries in Europe, the Middle East, Asia and North America in the 11th annual Fastmarkets Global Awards for Steel Excellence.

“The entire steel supply chain is truly global, and this year’s finalists demonstrate that excellence transcends countries and continents. Cutting-edge innovation exists in every corner of the world, and showcases international talent and customer-centric solutions,” Alex Harrison, Fastmarkets editorial and pricing director, metals and mining, said.

New categories this year included ferrous futures trading and ferrous exchange companies of the year, “which also indicate the global nature of the industry,” Harrison said.

Other new categories for automotive supplier of the year “highlight the incredible innovation in products and services for automakers from the steel supply chain,” in addition to efforts to promote workforce diversity, “which truly empower not only employees but their companies,” he added.

The 2020 finalists for the 11th annual Fastmarkets Global Awards for Steel Excellence are:

- **Best Innovation – Product:** Bull Moose Tube, Sennebogen LLC, Shanghai Futures Exchange, Trinity Products LLC, Winoa
- **Best Innovation – Process:** ArcelorMittal Dofasco, Consolis, Cronimet Envirotec GmbH, SteelHedge SA, Marcegaglia Ravenna SpA, Fives Group and Marcegaglia Ravenna SpA, Sinosteel Equipment & Engineering Co Ltd
- **Best Mergers & Acquisitions:** GFG Alliance, Merfish United
- **Best Operational Improvements:** Fives Group and Marcegaglia Ravenna SpA, Kocaer Haddeclilık San Tic ve AS, Marcegaglia Ravenna SpA, Outokumpu Technology Provider: BM Group Polytec SpA, Canvass Analytics, Fero Labs, Fives Group, Noodle.ai, Stockpile Reports, Thermo Fisher Scientific Financial Services Provider: Bank of America, BMO Harris Bank NA, Brown Brothers Harriman & Co, Global Principal Partners LLC, SteelHedge SA, Sennebogen LLC
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**Forgings News and Developments**

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Ferrous Futures Trading Company: Crunch Risk LLC, Ferogen Inc, Flack Global Metals


Winners of the 11th annual Fastmarkets Global Awards for Steel Excellence will be announced at the annual awards dinner on Tuesday June 9 in New York City.

Source: amm.com

**DMG Mori unveils new dual-laser metal 3D printing system**

Machine tool manufacturer DMG Mori has unveiled the latest addition to its additive manufacturing line-up in the form of a dual laser selective laser melting system.

The new Lasertec 30 Dual SLM machine comes equipped with a pair of 600 W (optionally 1 kW) lasers in the optics module to build either single components or several workpieces in parallel, within a 300 mm cube build volume, to provide more flexibility.

DMG Mori says the scan field of each laser covers the entire chamber area to enable build rates of up to 90 cm³/h and raising output by as much as 80 percent compared with single-laser machines. Active cooling of the build area allows users to remove finished components more quickly to further increase productivity.

The machine’s software automatically recognises the optimum scan strategy for each job and the adjustable focus diameter of the laser spot from 300 microns down to 50 microns is said to result in high accuracy melting. The machine also features a permanent filter with a lifetime of more than 3,000 hours which, due to automatic passivation of metallic particles, offers a high level of operational safety.

DMG Mori has implemented its intelligent, material-specific rePLUG unit for powder supply which features a closed circuit under inert gas, allowing powder to be exchanged easily and without contamination within two hours. Materials range from tool steel and stainless steel through to aluminium and cobalt-chrome to Inconel and titanium.

Meanwhile, its accompanying Optomet software offers functions for optimising power and exposure strategies for enhanced machine performance, and controlling the build chamber temperature to normalise conditions and reduce residual stresses.

The manufacturer has been expanding its additive manufacturing capabilities following the launch of its first hybrid AM systems back in 2013. In
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Featured Forging Machines

9" National Axle Forge Line w/feeder, heater/Robot Re:24890

40" Wagner Radial Axial Ring Mill, Rebuilt 2019, Re:25609

3" dia Roll Forged Steel Grinding Ball Production Line, Re:25672

26,400 lb Lasco Electro-Hyd Forging Hemmer, Re:24897

65 ton Demag Manipulator, max dia rounds 79", Re:24382

6" Etchells 1000 ton Vertical Upsetter, Re:24400

1600 ton Zdas Open Die Press with 13t Dango Nip, Re:25620

17,000 lb Eumuco Elect/Hyd Forging Hammer, Re:25667

TrueForge Global Machinery Corp.

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Fax:516-825-7115 • Email:sales@trueforge.com • www.trueforge.com
December, DMG Mori introduced a new 5-axis machining centre, the LASERTEC 125 3D hybrid system, which incorporates machining with laser deposition welding.

*Source: tctmagazine.com, DMG Mori*

**Capturing 3D microstructures in real time**

Modern scientific research on materials relies heavily on exploring their behaviour at the atomic and molecular scales. For that reason, scientists are constantly on the hunt for new and improved methods for data gathering and analysis of materials at those scales.

Researchers at the Center for Nanoscale Materials (CNM), a U.S. Department of Energy (DOE) Office of Science User Facility located at the DOE's Argonne National Laboratory, have invented a machine-learning based algorithm for quantitatively characterizing, in three dimensions, materials with features as small as nanometers. Researchers can apply this pivotal discovery to the analysis of most structural materials of interest to industry.

“What makes our algorithm unique is that if you start with a material for which you know essentially nothing about the microstructure, it will, within seconds, tell the user the exact microstructure in all three dimensions,” said Subramanian Sankaranarayanan, group leader of the CNM theory and modeling group and an associate professor in the Department of Mechanical and Industrial Engineering at the University of Illinois at Chicago.

“For example, with data analyzed by our 3D tool,” said Henry Chan, CNM postdoctoral researcher and lead author of the study, “users can detect faults and cracks and potentially predict the lifetimes under different stresses and strains for all kinds of structural materials.”

The machine-learning algorithm is not restricted to solids. The team has extended it to include characterization of the distribution of molecular clusters in fluids with important energy, chemical and biological applications.

This machine-learning tool should prove especially impactful for future real-time analysis of data obtained from large materials characterization facilities, such as the Advanced Photon Source, another DOE Office of Science User Facility at Argonne, and other synchrotrons around the world.

*Source: newswise.com, Argonne National Laboratory*

**Aerospace open die forgings to expand substantially**

Aerospace Open Die Forgings Market Insights is a professional and in-depth study on the current state of the industry with a focus on the Global market. The report provides key statistics on the market status of the aerospace open die forgings manufacturers.

It is a valuable source of guidance and direction for companies and individuals interested in the industry. Overall, the report provides an in-depth insight of this sector of the forging industry covering all important parameters.

**The key features of the study include:**

The report provides a basic overview of the aerospace open die forgings industry including its definition, applications and manufacturing technology.

*Through the statistical analysis, the report depicts the global total market of aerospace open die forgings industry including capacity, production, production value, cost/profit, supply/demand and Chinese import/export.*
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Forgings News and Developments

The total market is further divided by company, by country, and by application/type for the competitive landscape analysis.

The report then estimates 2018-2025 market development trends of aerospace open die forgings industry. Analysis of upstream raw materials, downstream demand, and current market dynamics is also carried out.

The report makes some important proposals for a new project of aerospace open die forgings industry before evaluating its feasibility.

Source: feedroad.com, supriya@factmr.com

Jaguar Land Rover teams up with Tata Power for EV charging solutions

Jaguar Land Rover (JLR) India said it has entered into a partnership with Tata Power for end-to-end electric vehicle (EV) charging solutions. As part of the association, Tata Power will provide charging solutions for JLR in India across its retail network of 27 outlets in 24 cities and at customers’ residence and/or office.

Tata Power will be responsible for providing a range of AC and DC chargers, starting from 7 kW to 50 kW capacity, JLR India said in a statement. “The partnership with Tata Power will be a tremendous value addition for JLR customers as it provides a one-stop solution to their charging needs and also provides easy accessibility to the wide network of public charging infrastructure being set up by Tata Power across India,” JLR India President and Managing Director Rohit Suri said.

This tie-up is one step forward in creating the right ecosystem enabling a simple and hassle-free charging experience for owners of company’s first electric vehicle, the Jaguar I-PACE, which makes its debut in India later this year, he added.

“As India’s leading integrated player in the EV charging space, we will provide JLR’s EV customers with easy, ubiquitous and seamless charging experience at their homes, offices and public places,” Tata Power Company CFO and President Ramesh Subramanyam said. This partnership is also an endorsement of JLR’s faith in Tata Power’s ability to deal with the electrified range of vehicles that it will bring into India, he added.

Source: news18.com, PTI

Machine Learning as secret weapon for customer acquisition

Chad Ruff serves as Chief Technology Officer at Swiftpage

While Machine Learning does fall under the larger category of Artificial Intelligence (AI), it’s a bit more specific and can be an extremely effective technology to pair with your customer and prospect database. Machine Learning can automate tasks and apply predictive analytics that drive meaningful growth. Machine Learning is the AI focal point for Customer Relationship Management (CRM) tool.

Businesses are quickly noticing that a CRM which incorporates Machine Learning is ideal for companies of all sizes because of the multitude of incredible features they offer. CRM helps businesses capture important customer information, track interactions and purchases and can help businesses provide an excellent customer service experience.

A CRM that includes Machine Learning adds the ability to access predictive analytics, automate Email Marketing campaigns and drive customer transactions. According to Gartner, the fastest-growing sub-segment for CRMs is Marketing
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Automation, which increased by 18.8 percent and represented 25 percent of the entire CRM Marketing space in 2018.

**Defining Personas** – Analytics from Machine Learning can help businesses create personas, or sample customers, which can then be used to segment consumers and create persona-specific Marketing strategies. By creating a “lookalike” with personas, you can target potential new customers based on solid data points.

**Focused Content Creation** – A strategic content creation strategy will assist your company in creating highly-focused content that speaks to specific customer groups. You can also determine which pieces of content get the most click-throughs or engagement and use that to create similar content.

**Targeted Lead Generation** – By tapping into the Marketing Automation aspect of Machine Learning, you can generate more targeted leads. Rather than sending out blanket Marketing and Sales collateral and seeing what sticks, use data and automation to deliver content in a timely, targeted and tailored fashion. Companies that have utilized Machine Learning for lead generation have seen a more than 50 percent increase in leads and appointments.

**Effective Data Collection** – Automating tasks such as data collection can be a huge help to your employees. In fact, a recent survey reported 46.5 percent of employees said the time it takes to enter data into their CRM was an issue. Therefore, when accurate customer data including contact info, purchase history, and previous communication notes are already loaded in and available to your employees at the click of a button, your customer service goes from average to exceptional—increasing the likelihood of repeat purchase.

**Quick Response Times** – Customer retention will increase with the automation of certain tasks, such as order confirmations, serving FAQ answers, requesting product surveys and other broad communications initiatives. Customers will be impressed with your business’ quick response time and it will take these nuanced tasks off your employees’ plates, giving them more time to tend to critical customer interactions.

**Cost-Related Benefits** – A CRM that includes Machine Learning can save companies both money and time, allowing them to direct funds and resources into other facets of the business that dig deeper into customer acquisition efforts.

Think about the skilled human hours it would take to analyze all of the data, generate predictive analytics, complete detailed customer entries, generate Marketing themes and send out individual emails. It’s shown that Sales teams who integrate automation have seen a 40-60 percent cost reduction and a time savings of 60-70 percent. The time and money saved are significant.

**Understand the Customer Journey** – At times it can be hard to determine how a customer followed the Sales funnel ultimately to purchase. Machine Learning can help businesses gain insights into the customer journey, and then use that data to support customer retention for future purchase.

These are already exciting times for businesses that are taking advantage of a CRM with Machine Learning, and the future is even brighter! We're looking ahead to gain a deeper understanding of the customer journey, the ability to capture data on even smaller pieces of Marketing (like the subject line of an email), narrowing in on a specific time of day to send emails based on previous open rates and investigating other avenues where machine learning can help businesses save money.

With all of this and more on the horizon, Machine Learning is becoming the ultimate secret weapon for customer acquisition.

*Source: aithority.com/*

**GM and Honda are co-developing two new electric vehicles**

GM and Honda will jointly develop two new electric vehicles slated for 2024, the latest move by the two automakers to deepen their existing partnership.

Under the plan, the automakers will focus on their respective areas of expertise. Honda will design
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the exterior and interiors of the new electric vehicles; GM will contribute its new electric vehicle architecture and Ultium batteries. This new architecture, which GM unveiled last month to showcase its own EV plans, is capable of 19 different battery and drive-unit configurations. The architecture includes large-format pouch battery cells manufactured as part of a joint venture between LG Chem and GM.

The vehicles, which will have a Honda nameplate, will incorporate GM’s OnStar safety and security services. GM’s hands-free advanced driver assistance technology, known as Super Cruise, will also be available in the new vehicles.

The vehicles will be produced at GM plants in North America. Sales are expected to begin in the 2024 model year in Honda’s U.S. and Canadian markets.

Source: techcrunch.com

ArcelorMittal buys Bhander power plant

ArcelorMittal Nippon Steel India (AM/NS India) is a 60:40 joint venture between L N Mittal-owned ArcelorMittal and Japan-based Nippon Steel Corporation. AMNS India has said that it has completed the acquisition of 500 Mega Watt (MW) Bhander power plant in Hazira, Gujarat. It has acquired Bhander Power Plant from Edelweiss Asset Reconstruction Company.

Bhander plant, which was commissioned in 2006 and commenced commercial operations in 2008, was purchased by AM/NS India under the Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFAESI) Act, the company said in a statement.

Bhander Power Plant, a natural gas-based thermal plant with an installed capacity of 500 MW, will remain captive to AM/NS India’s steel manufacturing operations at Hazira,” it said.

Earlier, ArcelorMittal India Private Limited (AMIPL) was selected preferred bidder for Thakurani iron ore mine license in Odisha following an auction process facilitated by the state government. The block in the district of Keonjhar, with estimated reserves of 179.26 million tonnes, is expected to make a valuable contribution to AM/NS India’s long-term raw material requirements.

Source: ET Auto, PTI

Bosch Power Tools India appoints Mr. Nishant Sinha as Director

Bosch Power Tools India, a market leader in the power tools segment that offers a complete range of power tools for construction, woodworking, and the metalworking industry, has appointed Mr. Nishant Sinha as the Regional Business Director for India & SAARC. Nishant will bring his rich business experience to lead the growth of the power tools products, accessories, measuring tools, lawn & garden tools, and after-service businesses across multiple channels at Bosch Power Tools.

Mr. Sinha aims to develop a stronger customer-connect and focus on effective channel expansion for deeper market penetration of the power tools division. With an advanced approach, Nishant along with his team will work to broaden the reach of power tools, accessories, and measuring tools through alternate channels, while also strengthening the digital and services network of the brand.

Nishant is an engineer from Banaras Hindu University and has a post-graduate degree in
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India’s forging industry severely hit by Corona

The supply disruption caused by the novel coronavirus outbreak has severely hampered the forging and auto component manufacturing industry in India, according to the Association of Indian Forging Industry (AIFI).

S Muralishankar, President, AIFI said: “The coronavirus is expected to have an impact on the Indian automotive industry and hence also on the automobile component and forging industries, who had already reduced their production rate due to the market conditions and on account of the impending change over to BS-VI emission norms from BS-IV from the 1st of April 2020.”

He said that the problem is further aggravated by the Chinese government’s suspension of shipments by sea until further notice and allowing air-only shipments that are not suitable for auto components and forging industries. Therefore the Indian original equipment manufacturers (OEM) are unable to plan production beyond the inventory currently available to them.

China is a major supplier of automotive components and accounts for 27 per cent of India’s automotive component imports. Citing reports the AIFI statement said that the impact on commercial vehicle, passenger vehicle and the two-wheeler segments will be more profound.

The Indian Government has also issued a notification mandating the decontamination of containers at the port prior to release to the Indian Customs. However, the guidelines/procedures to be followed for decontamination have not been notified, therefore it is not possible for the Indian importers to clear consignments that have already reached Indian shores on time.

Source: overdrive.in, navhindtimes.in, IANS

Amidst auto slump Bharat Forge rolls out VRS

India’s leading forging company Bharat Forge has announced a voluntary retirement scheme or VRS for “its eligible employees who have completed 10 years of service with the company. “Industry experts feel the announcement is the outcome of slowing demand in the local and key exports markets. Overall domestic forging industry has been massively hit in the past one year due to prolonged slowdown in auto sales.

ETAuto reported in September last year that since November 2018, the sector has witnessed an average drop in production of about 25 per cent-30 per cent. According to Association of Indian Forging Industry (AIFI), 20 per cent of the 400 forging units will permanently close operations by the end of 2020, if the current situation prevails.

Net sales of Bharat Forge for the quarter ended December 30, 2019, had declined 36.4 per cent year-on-year to Rs 1,076.7 crore.
Commenting on its Q3 earnings, which was announced on February 10, Baba Kalyani, CMD of Bharat Forge has said, “The quarter gone by was a repeat of the previous quarter in terms of weak end market demand and financial performance. Domestic and export revenues were down more than 30 percent in Q3FY20 compared to same quarter previous year.”

He had also mentioned the initiation of restructuring and cost optimisation policies within the company’s operations. “These actions coupled with investing in creating capacity towards a favourable product mix will eventually result in a sustainable and stronger business overseas,” Baba Kalyani added.

Source: ETAuto

**Steel industry faces inventory build and liquidity issues**

According to Jayanta Roy, Senior Vice President and Group Head, ICRA, the Covid-19 and slowing Chinese demand will affect global steel demand-supply balance in the near term. Healthy Chinese production growth had kept global steel production growth at 3.4 per cent in CY2019 but demand destruction in other geographies is expected to halt the growth globally.

“In the domestic scenario, the outbreak and nationwide 21-day lockdown would keep both production and consumption under check in Q1 FY2021. The key demand drivers for domestic steel demand - construction and the infrastructure sectors, besides the automobile and capital goods sectors, continue to witness muted or negative growth.”

As far as exports are concerned, ICRA note said the rapid spread of the outbreak to countries other than China have disrupted the seaborne steel trade, and the same is likely to fall further amidst the looming uncertainty surrounding global growth. During Q2 and Q3, a spurt in exports turned India into a net steel exporter. As for imports, increased scrutiny of shipments and weakened rupees are expected to keep them low.

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**Faculty** - Dr. Vasant Khisty is a technologist with experience in Forging technology and Driveline systems. He has more than 38 years’ experience in manufacturing and application of forgings. He has done his research on global competitiveness of auto component industry.

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Dr. Vasant Khisty sammyconsulting@gmail.com +919860500638
“Margin improvement is unlikely in FY2021; consequently, Indian steel industry’s debt protection metrics are likely to remain subdued in FY2021. The industry’s Total Debt, which improved to 2.9 times during the upcycle in FY2019, is expected to deteriorate to around 4 times in FY2020 and FY2021. The fall in the industry’s earnings can also be gauged from the credit ratio of our rated portfolio, which stood at 0.8 times in 11M FY2020,” said Roy.

Source: ET Auto

Ramkrishna Forgings board approves buy back up to Rs 40 crore

The Board of Directors of Ramkrishna Forgings Limited has approved buyback of an aggregate amount not exceeding Rupees Forty Crores from the open market through Stock Exchange mechanism in such manner as may be prescribed thereto at a price not exceeding Rs 250 per equity share.

The indicative maximum buyback shares at the maximum buyback price to be bought back is sixteen lakhs) fully paid-up equity shares of face value of Rs 10. Further, the number of equity shares bought back under the buyback will not exceed 25% of the total number of equity shares of the company.

The Maximum buy-back size represents 4.81% and 4.82% of the aggregate of the total paid-up equity capital and free reserves of the company based on the audited standalone and consolidated financial statements respectively of the company for last financial year ended on 31.03.2019.

Source: Equity Bulls

Union Budget 2020: Impact on machine tool sector

The MSME machine tool sector is said to be the first one affected by a market slowdown and the last one to benefit in a market boom. Although it has a significant role in the Indian economy, it faces many infrastructure limitations and inadequate linkages to the market. After the GST introduction in July 2017, many unorganised MSME industries have formal documentation as a result of registering their businesses under this tax regime. Majority of these are still either self-financed or funded through expensive informal finance.

According to the data released by the Reserve Bank of India (RBI) in 2019, MSME credit is only a small proportion (4.34 percent) of the total outstanding bank credit. Large industries’ share of total credit was highest at 27.84 percent. Typical limitations for MSMEs to obtain finance from big FIs or banks are creating complex documentation and charges of financial expertise for assistance.

MSMEs have welcomed several major steps taken to help industry in the Budget.

The government slashed the corporate tax rate from 30 percent to 22 percent for existing companies, and from 25 percent to 15 percent for new manufacturing companies. Under this structure, the facility of carry forward losses is no longer allowed. As the majority of machine tool customers, mainly OEMs, have invested largely in new machinery and other infrastructure, they face a dilemma whether to opt for lower tax rates and increase profitability, or pay higher taxes under the existing rates and carry forward losses (up to eight years) to offset future profits.

Globally, the Indian machine tool sector holds the 12th position in manufacturing and eighth position in consumption, with expectations to grow by 20-25 percent in the next two years. To keep up with the global market, the latest trends and technology in CNCs, robotics, IoT and Industry 4.0 need to be equipped on machines that are manufactured locally.
Recently, India has successfully attracted global companies by offering certain concessions to them. Import Custom Duty and Countervailing Duty (CVD) were waived for electronics products such as photovoltaic cells. Similarly, Special Economic Zones (SEZ) were provided at very low price and low taxes to electronic and software companies. This trend should continue in the automotive, electronics and defence sectors.

Although lower cost is more difficult to achieve, efforts can be made to reduce input cost such as reducing raw material cost, using automation for faster production, cutting inefficient government regulations that lead to corruption, and having good infrastructure and logistics in place to increase efficiencies.

*Source: oemupdate.com*

**Steel billionaire Gupta shuffles reporting dates at GFG Alliance**

Sanjeev Gupta’s sprawling GFG Alliance has indicated to present consolidated accounts for the group’s Liberty steel businesses, due in early 2020, which would provide greater transparency and enhanced governance. In particular, in early March, several of the group’s entities changed their financial year-ends from Mar 31 to Jun 30, according to filings with Companies House. Only recently, they changed the year-ends back again.

While companies can change their reporting year-end dates, it is unusual to do so twice in such quick succession.

*It has been indicated that management very recently changed its mind on the reporting period due to the impact of coronavirus on the business. It could be as senior executives believed the sudden economic changes ushered in by the global pandemic meant that reporting figures to March would give a better reflection of the business before the crisis hit the business.*

Commodities magnate Gupta, 48, has built a global metals empire in just a few years, largely by picking up failed steel mills and other distressed businesses. The result is a complex global conglomerate with operations in countries including Australia, the U.K. and the US — which has also often been backed by opaque financing.

The company has previously eyed a public listing in Australia and the UK. Last year, Gupta made the promise to deliver consolidated accounts for the Liberty Steel Group of GFG companies which had 30,000 staff in 10 countries and annual sales of $15 billion.

*Source: marketwatch.com*

**Seco Warwick provides two heat treatment systems**

Seco Warwick, Meadville, Pa., has received orders for a CaseMaster Evolution multi-chamber vacuum furnace with oil quench, and a Vector 15-Bar high-pressure gas quench vacuum furnace, from a machine tool manufacturer.

*Beginning in 2012, the customer started thinking about how to gain better control of their production systems, and one of the obvious bottlenecks was*
their offsite heat treatment arrangement. There was never an issue with quality from their existing suppliers, who used Seco/Warwick vacuum equipment for their work; however, it was clear that logistics could certainly be streamlined by eliminating the need to outsource.

The company bought the equipment to bring its heat treating processes in-house. Engineers decided to set up their own department, invest in new vacuum heat treat equipment, and train their production technicians to execute this critical function.

The CaseMaster Evolution (CMe), is a multi-chamber carburizing furnace with integral gas or oil quench. The Vector single chamber high pressure gas quench vacuum furnace is capable of quench pressures up to 15 Bar, and can accomplish a variety of heat treat processes, making it a flexible workhorse and optimizing its value.

All the necessary auxiliary equipment, such as chilling water storage and pumping, were included in the package. As part of the sale, Seco Warwick will create and deliver process recipes for the customer to make the transition to in-house heat treatment as painless and efficient as possible.

Source: secowarwick.com, asminternational.org, marketscreener.com

Sanghvi Forging admitted under the provisions of IBC

Sanghvi Forging & Engineering Limited, has been admitted under the provisions of The Insolvency Bankruptcy Code, 2016 (IBC) in term of order dated August 30th, 2019 passed by Hon’ble National Company law Tribunal, Special Bench (‘NCLT’), pursuant to an application filed by the Bank of Baroda under Section 7 of IBC. Mr. Chandra Prakash Jain, Interim Resolution Professional (IRP) has been appointed for carrying out the CIRP of the Company.

Source: sanghviforge.com

MSME says that uncertainty is killing

“It is not about shutting operations for one day or 10 days or 21 days. It is the uncertainty that is killing us,” said the owner of a machine tool manufacturing company. A majority of MSME owners that BusinessLine spoke to seemed clueless about what next.

“We invested quite a sum two years back when the market was good. Now, we do not have money to pay GST and other statutory dues. The future looks uncertain,” said S Soundararajan, Director, Falcon Toolings, adding “still wondering if the market will be stable even after six months.”

He was not alone. Industrialists by and large said that the customer expectations had started to increase and they would have to rethink the supply chain.

“The fear psychosis is keeping people indoors. We will need to wait and watch the repercussions and see how the government would handhold the economy after the 21-day lockdown. We are in the capital equipment line of business. With capex investments taking a hit, our business too will be impacted badly,” he said.

R Ramamurthy, President of the Coimbatore District Small Scale Industries Association (Codissia), said servicing debt could be the biggest...
challenge for the MSMEs in the coming days. “We welcome the timely relaxation (announcement by RBI) of three-month moratorium on all loans and the 100 basis point cut in cash reserve ratio. But the government should ensure that all banks follow the deferment. Invariably, when schemes are announced, except a few, the rest of the players in the banking industry maintain that they have not received any such communication from their HO.”

While appealing to the Centre to extend adhoc additional credit of 25 per cent on working capital by all financial institutions, the association has requested that interest be kept nil during the lockdown period and until the MSME units resume operations.

“Mathematical waiver of interest by banks up to June 30 would only have an insignificant impact on the effective interest rate if worked retrospectively from commencement of loan,” the Codissia President said.

Codissia has sought time extension for payment of insurance premium, grant of subsidy to enable MSME units pay wages to its employees, stimulus package (funds) to employees for the lockdown period and a package for loss in business during this period and waiver of interest on payment of statutory dues like PF, ESI, EPF, GST and income tax among others.

The Government should consider extension of existing foreign trade policy (2015-20) for one year beyond March 31, 2020, extension of all status holder certification and extension of reintroduction of interest equalisation scheme to help the community at the time of crisis, Ramamurthy said.

Source: thehindubusinessline.com

**Tata Steel India orders slab conditioning line from SMS group**

Tata Steel India has awarded SMS group the order to supply a slab conditioning line (scarfing line) for its Kalinganagar works. SMS group will supply the complete mechanical and electrical equipment of the slab conditioning line, including slab handling equipment and a fume extraction system that incorporates a wet electrostatic precipitator. Commissioning of the slab conditioning line is scheduled for the first quarter of 2021.

Full-surface scarfing is a surface removal process used for eliminating surface and subsurface defects in slabs. Several car manufacturers specify this treatment as a requirement for steel used in car body applications. The new scarfing line will enable Tata Steel to open a new market segment for its Kalinganagar works by meeting the requirements of the automotive industry in the future. The slab conditioning line to be supplied by SMS group will be designed for approx. 1.02 million t/a of scarfed slabs within a width range of 1,000 to 2,150 mm.

The scarfing line will be installed in the slab yard of the existing slab caster shop. It will scarf cold and hot slabs. The line will comprise a two-side scarfing machine - for the simultaneous processing of the upper and lower slab sides - and an in-line slab inspection system. Slabs charged into the line will be scarfed in two passes. Subsequently, they will run through a surface inspection system which checks them for any imperfections or defects.

An interface linking the X-Pact® level 1 automation system of the slab conditioning line with the production planning system assures the receipt of feedback on every slab that leaves the line after the treatment and before any further processing. The slabs to be processed will come from two SMS group-supplied continuous casters: a two-strand slab caster commissioned in 2016, and a brand-new two-strand slab caster to come on stream during 2020.

Source: heat-processing.com, SMS group
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New modular generation of TIG welding torches from Fronius

The new Fronius welding torches for manual Tungsten Inert Gas welding (TIG) can be customized to suit the welder’s personal preferences as well as the welding task at hand. Their modular design offers a range of sustainable and cost-effective options.

Different requirements - one welding torch: Large or small handle. One control to set the amperage or an additional JobMaster display that can be used to access the pre-programmed settings, different gas nozzles, different torch angles. “The perfect” TIG welding torch varies from application to application and every welder has their own preference. The modular design of the new TIG welding torches from Fronius allows you to cover all of these requirements without having to replace the entire torch.

The hosepack for manual TIG devices fits every torch body, which can likewise be individually adapted as well. There are different torch body lengths and angles to handle anything the application demands. Changing the torch body is easy and no tools are required with the Multilock System: the torch body is loosened from the hosepack by pressing and turning, and is secured by attaching and turning. For both gas-cooled and water-cooled systems with the torch empty function, it is even possible to safely change the torch body whilst the hosepack is still connected.

Different control options and ease of use: The ergonomic handles of the new TIG welding torches are available with three different interchangeable control elements: an Up-Down rocker switch, JobMaster display or rotatable potentiometer. When developing the new torches, a large amount of importance was also placed on ease of use: the handle is non-slip and contains soft components to take as much strain out of your work as possible.

A ball joint between the hose and torch body ensures flexible handling. The torch body can also be turned endlessly. A further improvement for the welder is an LED light on the torch which illuminates the welding location before and after welding. Furthermore, depending on their preference, the user can choose between a standard and a smaller, size-optimized handle. This compact version is also available with different control options.

The modular design of the new TIG welding torches from Fronius is a sustainable solution: the welding torch does not have to be thrown away if requirements change or parts break. Instead, the individual modules are changed with ease. Changing components can take place directly on site and without the help of a service technician, saving resources, time and costs.

Image 1: The new generation of TIG welding torches from Fronius is ergonomic and the soft grip components help to ward off fatigue during welding.

Image 2: The torch body can be changed easily, quickly and without the need for tools – ensuring high system availability

Image 3: The handle is available in two sizes.

Image 4: Users can choose between three operating elements: Up-Down operation, JobMaster and potentiometer.

Image 5: The SmallHandle welding torches are also available with different control options (from left to right): long trigger, potentiometer, UpDown and standard.

Fronius Perfect Welding is an innovation leader for arc welding and a global market leader for robot-assisted welding. As a systems provider, the Fronius Welding Automation division also implements customized automated complete welding solutions.

Source: fronius.com, a1kommunikation.de
Matters needing attention in the use of forging heating furnace

1. Reasons for excessive thermal inertia of forging heating furnace: Because signal transmission takes time, in order to consider this lag time, when the heating power of the equipment is close to the set temperature, it will consider reducing the heating power. Generally, the power is only about 10% at (-5) degrees, which can effectively control the heating rate. To make the temperature rise smaller when the temperature is reached.

2. Why can’t the furnace temperature of the forging heating furnace fall too quickly: If the temperature of the flue gas is limited by 800 degrees, the surface heat intensity of the furnace tube cannot reach the upper limit recommended by the specification, and the volume heat intensity of the furnace is also far lower than the value specified in the specification, and there is still a considerable margin.

3. Requirements for refractory materials used in forging heating furnaces: Forging heating furnaces generally use aluminium-silicon-based refractory materials, lined with heavy aluminium-silicon-based refractory materials, and lined with lightweight lightweight clay bricks and insulation boards such as heat-resistant refractory materials to improve insulation performance. The furnace roof of both the tropical zone and the heating zone is made of high-alumina hanging bricks, and the upper surface is covered with a layer of heat-insulating bricks. The forging heating furnace bottom uses magnesia-chrome brick or magnesium brick as the inner working layer, and the preheating inner working layer uses clay brick.

Source: wgfurnace.com

Electric car battery production causes less CO2 emissions

The classic anti-Tesla argument alleging that CO2 emissions from battery production negates the positive environmental impact of electric vehicles may have been disproven for good. This comes after the IVL Swedish Environmental Research Institute, one of the firms responsible for the original anti-EV claim, completed a new study that showed a much different result.

The IVL conducted a study in 2017 which revealed that the emissions from the production of lithium-ion batteries was responsible for a large amount of CO2, making the purchase of an electric car practically pointless in an environmental sense. The 2017 study claimed that the production of EV batteries emits around 150 and 200 kg of CO2 per kWh. However, a new study showed the amount of CO2 emissions from battery production has been reduced to between 61 and 106 kg of CO2 equivalent per kWh.

Erik Emilsson, a researcher for the IVL stated that “emissions are lower now is mainly due to the fact that battery factories have been scaled up and are running at full capacity, which makes them more efficient per unit produced. We have also taken into account the possibility of using electricity that is virtually fossil-free in several of the production stages.”
The IVL believes this reduced number can get even lower with the development of more sustainable techniques during the different states of the electric car life cycle. For example, some Tesla Superchargers and other EV chargers are still powered by a CO2-emitting resource. Tesla CEO Elon Musk stated in October 2019 that the company’s objective is to move away from this “as fast as possible” by adding solar panels to Supercharger stations.

Source: teslarati.com

Can 3D printing be a threat to forging

The world’s oldest recorded metalworking process, forging, still exists today, albeit in a form somewhat removed from its inception over 6,000 years ago.

Forging processes, as we all know, apply force to shape metal. Most often, modern forging is associated with high temperatures heating metal workpieces to the point that they can be formed by machine-driven hammers or presses, sometimes using a die to smash the material into a specific geometry. However, there are other forging techniques that use warm or cold temperatures that ensure that metal parts don’t expand as a result of high heat and then shrink, thus resulting in better tolerances.

In the additive manufacturing (AM) industry, we love to talk about the various traditional manufacturing processes that are already being disrupted by 3D printing and forging is no different.

Forging has its major advantage in the physical strength of forged parts, which, due to the fact the internal grain structure deforms to follow the general shape of the part, are stronger than cast or machined parts. The cost of materials for forging processes is usually cheaper, but forging presses and dies can be costly, and parts usually require secondary processes, such as CNC machining, to achieve final tolerances.

Therefore, forging is usually reserved for less geometrically complex parts that need to be manufactured in a highly repeatable way from less expensive metals, such as iron and steel.

Those familiar with AM technologies may start to get a feel for where AM is best situated for impacting the forging market: low-geometric complexity, yet high strength material properties. If you’re thinking like we are, you are starting to consider the possibility of directed energy deposition (DED) for the fabrication of near-net-shape parts.

Blanks 3D printed using Norsk Titanium’s Rapid Plasma Deposition process.

DED offers many of the same benefits and fits many of the same applications as forging, while providing some additional advantages. Using blown powder or a metal wire, DED can rapidly form a medium-to-large sized part to near-net-shape. Often referred to as “blanks”, these components are then finished using CNC machining.

That same Norsk blank machine finished to final shape

DED can create a metal part closer to the final desired shape than forging, without the need for tooling. And, when it comes to more expensive materials like titanium, DED can potentially be more cost effective. For forged parts that would typically require dies, DED can be significantly
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www.wire-india.com

9th All Indian Exhibition for the Tube and Pipe Industry
www.tube-india.com

International Metallurgical Technology, Processes and Metal Products Trade Fair
www.metec-india.com

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Joining Cutting Surfacing
www.iewc.in

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» 15,000 Visitors  » 20,000 Sqm.
faster. In turn, DED has the potential to reduce die, material and machining costs for certain components.

Source: 3dprint.com, AMETEK, Norsk Titanium.

Three game changing electric vehicle technologies

Millions of electric cars are to hit the market next year as every self-respecting carmaker submits its lineup of plug-in vehicles for the environmentally conscious. Sales forecasts for these electric gems vary but tend to be generally optimistic, so carmakers’ hopes run high.

There is just one small problem with this perfect picture.

Very much like storage for renewable energy, range (miles per charge) in electric vehicles has become the top priority and with it, charging times. In fact, it is quite possible that charging times will overtake range in terms of importance soon. If you can charge your EV in five minutes, it becomes less of a worry whether its range is 200 or 250 miles, all driven in the city.

No wonder then that the charging systems field is currently busting with activity, producing game-changing inventions in electric vehicle charging such as wireless charging, superfast chargers, and advancing vehicle-to-grid technology, which has the added benefit of moving electricity both ways. Here are the top 3 innovations for EV charging:

1. Wireless Charging: This is one of the more fascinating concepts in what Car Magazine’s Curtis Moldrich has called an arms race for carmakers. Similar to wireless phone charging, wireless charging can work for cars in parking lots or even on highways.

Here, speed of charging is not of the essence. According to Qualcomm, which has developed tech dubbed Halo, wireless charging can change the picture entirely. Why sit at a charger for even five minutes if you can drive on a highway that charges your car as you drive.

Wireless charging for EVs works on the same principle as wireless charging for smartphones: magnetic induction. It involves two pads—one on the car and one on the floor of the garage or parking lot—that need to be aligned so charging will begin. It can be done at speeds of 3.3 kW, 6.6 kW, or 20 kW. Now, this may not be particularly fast, but speed is not the point, convenience is. You leave the car in the garage and it charges overnight with no need to monitor the process.

Wireless charging sounds pretty cool, but it will be a while until it becomes standard practice thanks to competing technology and the race for faster and faster charging times.

2. The 3-Minute Charge: So far the fastest in this field seems to be the three-minute charging tech developed by Porsche and BMW. This is the time their charger takes to supply an EV with enough juice for 62 miles. It works with a capacity of 450 kW, which is three times the capacity of Tesla’s Supercharger, but there is one small problem. Current EVs cannot take this kind of power, so the tech was tested on specially developed vehicles. These recharged to 80 percent in 15 minutes.

One would think it’s a little inconvenient to have chargers that cannot work with the EVs that need recharging, but once the charging tech is there, future EVs will be developed in such a way as to be able to take the power of the charger. Affordability, of course, is a whole other topic.

3. Vehicle-to-Grid Tech: While we wait for EVs capable of taking a charge at 450 kW, other companies are working on vehicle-to-grid technology. Imagine millions of EVs that charge from the grid when there is excess output and release back unused juice to the grid at peak hours. Also, many believe that car batteries can be used as household battery packs, collecting and storing power from renewable installations.

The road ahead is long and winding, but a growing
number of businesses are taking it. The key seems to be managed charging, or smart charging. This prevents an overload on the grid in case too many people are charging their EVs at the same time, which tends to happen during peak electricity demand periods. Smart charging systems simply stop charging vehicles when peak demand is reached to avoid the overload. But that’s grid-to-vehicle. What about the other way around.

One company has developed what it calls the first bidirectional charger for the home. Wallbox’s Quasar, according to the company, can feed energy from an electric car to the home or to the grid. It can also work as a charger for the car. The idea certainly makes sense, reducing energy waste considerably and alleviating the load on the grid once there are enough EVs to use it.

Speaking of grid load, there are companies focusing on load distribution in EV chargers specifically. After all, fast is good, but fast and reliable is better. Just a few days ago, an EV charger exploded in New Zealand and while the initial investigation found the charger was faulty, load is a force to be reckoned with.

Source: oilprice.com, Irina Slav

**GH Induction introduces Servinductors Service**

GH Induction, an expert in induction heating systems, has formally introduced a new service organization revolving around 3D printed inductors. The new service, named Servinductors, aims to help customers of the Valencia-headquartered company transition from conventional to 3D printed coils, saving on various costs.

**Induction systems:** Induction heating is often used in the heat treatment of metals, whereby an AC current is run through copper coils to induce heat in ferrous metal. Inductors are also common components in AC electronic equipment such as radios and speakers. They are metallic coils that block AC while letting DC pass in an induction system.

Inductors are regarded as a consumable part and therefore make up a large portion of the maintenance costs associated with induction systems. A service providing extensive monitoring and preventive actions could reduce these costs significantly while extending component life.

**The Servinductors service:** The new service will run alongside GH’s standard services and gives clients access to a specialized consultant. Clients have the option to raise doubts, ask about problems and potential improvements; they are given access to improved purchasing conditions and can update their current inductors to new 3D printed coils provided by GH.

A **3D printed copper inductor. Photo via GH Induction.**

The service aims to launch GH Induction to pole position as a supplier in the induction market, starting with Spain and Portugal. The service will soon be extended to the rest of the countries where the company operates.

**3D printed copper inductors. Image via GH Induction.**

3D printing copper coils for induction applications is an area where activity is increasing. Trumpf, a German provider of machine tools, recently demonstrated the capabilities of its green laser technology in fabricating copper structures for use in heat exchangers and conductive inductors. Elsewhere, in the US, metal 3D printer provider Markforged released a pure copper material...
option for use with its Metal X 3D printer. The move is expected to have major implications in the electronics industry as manufacturers now have the option to 3D print their essential inductors.

Source: 3dprintingindustry.com, GH Induction

New wireless charging designs for electric vehicles

Oak Ridge National Laboratory researchers created and tested new wireless charging designs that may double the power density, resulting in a lighter weight system compared with existing technologies, while maintaining safety.

The hands-free method includes a set of two charging coils—one to be affixed underneath an electric vehicle and the other at ground level. When the coils are aligned, the power transferred charges the vehicle’s battery. The team’s designs, described in a recent study, include a three-phase system that features rotating magnetic fields between layers of coils.

“The layered coil design transfers power in a more uniform way, allowing for an increase in power density,” ORNL’s Jason Pries said. The three-phase system has successfully transferred 50 kilowatts with 95% efficiency. “As we scale up the system to transfer up to 300 kilowatts, the specific power is expected to improve as well.” This research brings the team another step closer to fully charging an EV in 20 minutes.

Source: scitechdaily.com, Jason Pries/Oak Ridge National Laboratory, U.S. Dept. of Energy

Schuler develops system for die monitoring

A wrench left behind in the die is every press operator’s nightmare. When the machine starts up, damage to both the die and the part being formed is inevitable. And a brief moment of carelessness like this can even have consequences for the entire system. To address this problem, Schuler has now developed its Visual Die Protection, a camera-assisted monitoring system that can eliminate costly die repairs, downtime, and even complete production stoppages.

In Visual Die Protection, not only do cameras detect the presence of foreign bodies such as wrenches or punch scraps: The system also checks whether the die is properly connected and verifies that the blanks have been correctly inserted, formed and removed. It is equally able to recognize both cracks in the part itself and potential damage to the centering and ejector pins. If any abnormalities are found, the press is stopped to prevent the situation from getting worse.

For this to be possible, the cameras first create reference images of the relevant die before production begins. During this imaging process, operators mark critical areas that require particularly accurate monitoring, such as the centering and ejector pins. While the production process is running, artificial intelligence is then used on a separate computer to perform a real-time comparison of current images with the original condition of the die, thereby allowing an immediate response if any discrepancies are found.

Source: schulergroup.com
Exhibitions and Conferences

**IPTEX & GRINDEX 2020 in Pune**

On 13th February 2020 Virgo Communications & Exhibitions Pvt Ltd. organised the 6th edition of International Power Transmission Expo (IPTEX) and 4th edition of International Expo on Grinding & Finishing Process (GRINDEX) in Pune, which focused on exhibit of innovative technology in gear, power transmission, grinding technology and surface finishing process. The three-day exhibition featured 74 global industrial leaders and welcomed over 3,800 business visitors from across India.

After successful editions in Mumbai, the organiser had received suggestions from many of the exhibitors to explore the exhibition visitor target in Pune, which is considered the hub of the automotive and manufacturing industry.

Some of the key exhibiting companies of IPTEX & GRINDEX 2020 were- Shanti Gears, Gleason, Klingelnberg, Reishauer AG, UCAM, Eiffco Machine, Kapp Niles, Matrix Machine Tool, Toyoda, Grindwell Norton and Hermes Abrasives.

The general feedback from the exhibitors of this edition has been positive and they are happy about the visitor turnout, in terms of the quantity
and quality. Some of the key visitor companies of the exhibition were- TATA Motors India, Bharat Forge Ltd., L&T Industries, TVS Motors, Mahindra & Mahindra, RSB Transmission, Mahindra CIE, Bajaj Auto, Carraro India, Hero Motocorp and John Deere.

Virgo also organised a two-day seminar during the exhibition. On 13th February was the seminar co-organised by the American Gear Manufacturers’ Association (AGMA), on the topic- ‘Steel for Gears Applications.’ The resource person for the seminar was Mr. Goran Nystrom, EVP – Group Marketing and Technology, Ovako Group. On 14th February 2020 was the seminar on ‘IOT for SMEs.’

The speakers for this event were: Mr. S Wilson, Head of IT, Shanthi Gears; Mr. Akhileswar Jha, Head-Industrial OEM& Business Development, Petronas India; Mr. Narasimhan Rajagopal, Industrial IOT Expert and from the department of CFD Solutions of Altair India- Mr. Kamleshwar Rajender, Business Development Manager and Mr. Krishnan Veeraraghavan, Application Specialist.

Talking about the exhibition Mrs. Anitha Raghunath, Managing Director of Virgo Communications & Exhibitions said, “This is the only exhibition where you can see the manufacturers of gears and grinding machine, along with the other things like software companies and oil companies. This really helps the exhibitors to improvise their production and cost-cutting.”
The exhibition supporter, Mr. Matthew Croson, President of American Gear Manufacturers’ Association (AGMA) said, “It’s a big business opportunity to be in India this is my 3rd time in India, people here inspire a lot by their thoughts, working in India is always a good experience and as we all see the Gear Grinding Market is expected to increase rapidly in India 2020”.

He added further that “innovation is born in a state of alignment with the production of the needs and demands of the customer, or the other way around. In any case, organizations around the globe must continually develop themselves and remain conscious of the needs of the people. The failure to do as such or not being involved in the needs of your company would make your rivals win” he also said, “making new things is something that always creates innovation in your mind, and that’s what we’re doing here to innovate people’s minds with the help of machine and technology.”
The next edition of IPTEX & GRINDEX in Pune is scheduled from the 16th to 19th February 2022 at the Auto Cluster Exhibition Centre, Pimpri, Chinchwad.

**Metal + Metallurgy - Shanghai**

M + M is now scheduled to be held on August 18-20, 2020 at National Exhibition and Convention Center, Shanghai. China. The associates supporting the expo are China International Foundry Expo, China International Metallurgical Industry Expo, China International Industrial Furnaces Exhibition and China International Refractories and Industrial Ceramics Exhibition.

With a history of almost 30 years, Metal + Metallurgy is regarded as the largest exhibition in the equipment manufacturing industry in Asia and the second largest in the world. It’s an exciting opportunity for Chinese and overseas elites to communicate and collaborate, as well as to enhance the brand value.

Following China’s rapid industrialization process and the penetration of the whole industrial chain, Metal + Metallurgy China keep on enriching the content and refining the ory. Besides the exhibits of foundry, metallurgy and industrial furnaces, cast parts, refractory materials and ceramics, which are widely used in auto, machine tools, shipbuilding, engineering machinery, rail transit and other manufacturing areas, are introduced to the exhibition.

The leading players of the industry throughout China and the world will be present at Metal + Metallurgy China 2020 with their top-selling products, latest technology and one-stop solution. China International Die Casting Industry Exhibition will also be held as Concurrent Event.

Relying on the large scale of the exhibition, China Foundry Association Congress and China International Steel Congress will be organized concurrently as always. The symposiums and seminars will provide an academic platform for the participants to learn and discuss the hot topics, like the latest policies, the development prospects, the emission reduction and the energy saving.
Fully backed by the domestic authorities, Metal + Metallurgy China has been widely supported by the well-known industry associations from Europe, Italy, Germany, Spain, USA, Japan, Korea and Taiwan Region. The global network ensures the exhibition’s leading position in the world. The event also gain the attention of the specialists and the business executives, who themselves will participate in the show and support their own products.

**WTT-Expo 2020 for the first time in Düsseldorf**

Industrial heat recovery, industrial heat exchangers and heat transfer technology systems are the focus of the WTT-Expo, which will be held for the first time as a trade show parallel to Tube Düsseldorf from 7 to 9 December 2020.

The content synergy between WTT-Expo and Tube 2020 consists in the component ‘heat exchanger tubes’, the corresponding (welding) production processes for heat exchangers and, in general, the component ‘tube’ in process plants with regard to the visitor target groups of technical, operation and maintenance managers as well as technical buyers and planners.

At the WTT-Expo, exhibitors from the industrial heating and cooling technology sector will once again show how cost-optimised production can be achieved in this area and at the same time make a sustainable contribution to minimising emissions.

At the WTT-Expo, primarily exhibitors from German-speaking countries and neighbouring European countries (but also the USA) are expected to present systems, equipment, products and services from the industrial heat exchanger and heat transfer technology sector.

Tube is the world’s leading trade fair for the tube and pipe industry, which will take place from 7 to 11 December on over 50,000 square metres and attract around 31,000 trade visitors from 130 countries to Düsseldorf.

The trade fair’s comprehensive range of products and services extends from planning and construction to commissioning and the complex field of maintenance.

Visitors to the world’s leading trade fairs wire and Tube, which are held in parallel, have free admission to the WTT. Trade visitors who only want to visit the WTT can also visit the wire and Tube trade fairs with their admission ticket.

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