Schaeffler

LAUNCHES SHARE PROGRAM IN NORTH AMERICA

In collaboration with The Ohio State University (OSU), Schaeffler recently launched its first Schaeffler Hub for Advanced Research (SHARE) Program in North America. Located on the Ohio State campus in Columbus, Ohio, the collaborative program begins in August and will focus on all solid-state electrolyte (ASSE) battery development with future plans for fuel cell research and development.

Schaeffler's e-mobility team — Patrick Lindemann, president of BD transmission systems and e-mobility; Jeff Hemphill, chief technical officer; Philip George, director, region innovation; and Rashid Farahati, director of wet friction material and surface technologies — recently joined Ohio State's Center for Automotive Research (CAR) team to celebrate the kickoff of the program.

"This program is an ideal way for Schaeffler to inspire and foster the next generation of automotive and mobility engineers," said Jeff Hemphill, CTO, Schaeffler Americas. "Building on the success of our established international programs, we hope our work with OSU will expand the current state of ASSE and fuel cell technology, which we believe are key components for the future of mobility."

The SHARE program uses the "company on campus" concept that includes dedicated offices for full-time Schaeffler employees at the university to foster a close collaboration between Schaeffler employees, university researchers, Ph.D. candidates and students.

As part of the initial program, Schaeffler is sponsoring a Ph.D. student who will also be an integral part of Schaeffler's on-site team. Supporting a Ph.D. candidate who will concurrently focus on ASSE battery manufacturing development is yet another example of how the SHARE program advances e-mobility innovation while also giving back to higher education.

The SHARE program at Ohio State builds on Schaeffler's long-term commitment to supporting academic and economic growth in the state of Ohio. Schaeffler and Ohio State have previously collaborated on several research initiatives — including the GearLab and as a member of the CAR Consortium — to drive technology advancements and promote the automotive field with a particular focus on e-mobility. These collaborations are a key component of Schaeffler's commitment to fostering the next generation of mobility engineers while helping stimulate the innovations needed to support the evolving auto industry.

"This SHARE program is an excellent initiative and an ideal model for academia — industry collaboration. I believe that the impact of this initiative on research and education will be invaluable in preparing Ohio State students to be the next-generation leaders in energy storage and vehicle electrification," said Giorgio Rizzoni, professor of mechanical and aerospace engineering (MAE) and director of CAR.

"All solid-state electrolyte (ASSE) battery will be a breakthrough for the next-gen electric vehicles technology. Through the SHARE program, Schaeffler and Ohio State will be able to innovate and develop jointly the manufacturing processes of ASSE battery that can be upscaled and implemented to electric vehicles," said Jung-Hyun Kim, assistant professor of MAE and associate fellow at CAR.

The Ohio State University is Schaeffler's fifth SHARE program presence globally and the first in the Americas. The other SHARE programs include partnerships with:

- The Karlsruhe Institute of Technology (KIT) in Germany focusing on electric and automated mobility;
- Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) in Germany focusing on digitalization and data science;
- Nanyang Technological University (NTU) in Singapore focusing on robotics and Industry 4.0; and
- Southwest Jiaotong University (SWJTU) focusing on interurban mobility, especially railway technology.

www.schaeffler.com/content.schaeffler.com/en/innovation/open_innovation/share_network/share_network.jsp

Formic Technologies

OFFERS ROBOTICS-AS-A-SERVICE

Robotics-as-a-service company Formic Technologies recently launched a simple value proposition: hire fully customized robots from top vendors at a low hourly rate and no upfront cost. To help small and medium-size manufacturers benefit from automation, Formic handles every aspect of a financing and deployment—from scoping, engineering, purchasing, implementation, and maintenance. The company also guarantees uptime, with customers paying nothing for system downtime.

Traditionally, manufacturers buy robots, which is a lengthy, complex, inflexible, and expensive process. These barriers to entry are so high for smaller manufacturers that they often refrain from deploying automation altogether.

"We started Formic because we saw all that automation can do, and we wanted to provide a way for any manufacturer to easily adopt automation in a simple, risk-free, and on-demand way," said Saman Farid, CEO and co-founder. "With Formic's fundamentally different approach to financing and deployment, manufacturers can do more with automation without high costs or a lengthy and complicated purchasing and deployment process."

Formic's model was designed to systematically remove every barrier to entry, allowing manufacturers to deploy automation efficiently and cost effectively. Testing shows that Formic's deployments are 50% faster than traditional approaches and save customers 42% on their operating expenses from the first day.

According to Farid, an engineer and robotics start-up investor who founded Formic with former Universal Robots salesperson Misa Ikhechi, a unique combination of products and services make Formic's model possible:

- Systematized deployment processes
- In-house equipment financing
- Formic-designed solutions featuring products from leading robotic vendors such as Universal Robots, Fanuc and ABB

"We came to the conclusion that what manufacturers needed was not any specific new technology, but a better way to access the technology that would best meet their needs," Farid said. "Formic offers that access at a fraction of the cost or energy, as Formic takes on the heavy lifting."

www.formic.co/

Bonfiglioli

CELEBRATES 40 YEARS IN THE UK

This year marks the 40th anniversary of the establishment of the first subsidiary of Italian drive specialist Bonfiglioli Riduttori in the UK. A good reason to celebrate, as Bonfiglioli's development in the UK over the 40 years has been a true success story.

Today, Bonfiglioli UK's 2,400 m2 facility is located in Warrington, near Manchester, and is one of 21 commercial branches worldwide. As a wholly owned subsidiary of Bonfiglioli S.P.A., Bonfiglioli UK Limited is responsible for all sales activities of the Mobility & Wind (M&W) and Discrete Manufacturing & Process Industries (D&P) as well as Motion & Robotics (M&R) business units in the UK. Today Bonfiglioli UK is 23 employees strong and generated sales of £34m in the last financial year.

In the UK, all the business areas of the Bonfiglioli Group are represented. The D&P business area is active in many mechanical engineering sectors, among others, and also offers the right solutions for almost all industrial applications. A very extensive product portfolio ranging from precision gearboxes to extremely powerful large planetary gearboxes is the basis for further growth. The M&W business unit supplies many well-known manufacturers of mobile construction machinery, cranes, and agricultural applications. In addition to hydraulic applications, Bonfiglioli accompanies the market in the electrification of these machines, doing pioneering work that demonstrates the company's innovative strength. In azimuth and pitch drives for wind turbines, Bonfiglioli has a global market share of around 35% and therefore rightly considers itself the market leader. The M&R business unit rounds off the drive portfolio with its

high-performance frequency inverters and servo controllers. In the market, Bonfiglioli has built up a reputation as a reliable partner for complete drive systems with its broad product range.

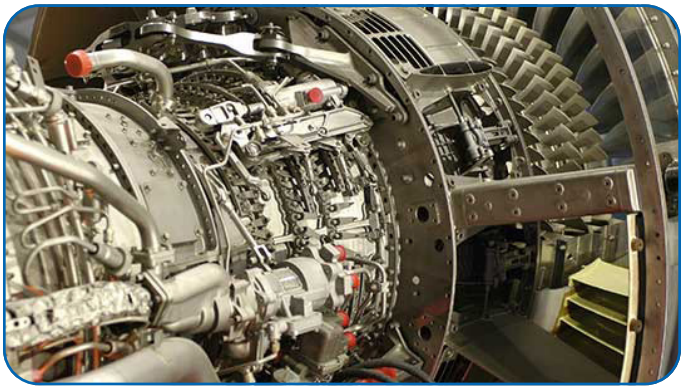
The UK is an economically important market for Bonfiglioli. This is another reason why the 40th anniversary is a very special date for the company

www.bonfiglioli.com

Epicor

RECOGNIZED FOR MANUFACTURING VISION AND EXECUTION

Epicor Software Corporation, a global provider of industry-specific enterprise software to promote business growth, has been named a Visionary in the 2021 Gartner Magic Quadrant for Cloud ERP for Product-Centric Enterprises for the third consecutive year.



"We believe that placement in the Visionary quadrant reinforces our focus on building Kinetic with our customers, for our customers," said Epicor President Himanshu Palsule. "Kinetic has the functionality necessary to run a modern, future-ready, manufacturing business looking to capitalize on data, transform digitally in the Cloud, and innovate without limits. The partnership with our customers is critical. And that's why we prioritize customer touch-points and feedback that influence our product innovation."

Epicor operates in 150 countries around the world with 20,000 customers utilizing its expertise and solutions to improve performance and profitability for manufacturing, distribution, and retail.

www.epicor.com

Velo3D

EXPANDS TEAM IN EUROPE

As global demand for top-quality 3D-printed industrial parts continues to grow, California-based Velo3D, Inc., a leader in advanced additive manufacturing (AM) for high-value metal parts, has announced the appointment of two new Europe-based senior executives.

Managing Director, Dr. Jose Greses, will be based between Germany and Spain while Sales Director, Xavier Fruh, will be located in France. They join Jon Porter, who was appointed earlier this year as European Business Development Director based in the U.K.

Dr. Greses holds a Ph.D. in laser welding from the University of Cambridge (U.K.) and a M.Sc. in Marine Technology from Cranfield University (U.K.). He has worked for a number of leading European manufacturing companies in laser welding and 3D-printing—most recently with GF Machining Solutions and, prior to that, for 14 years with German AM company EOS.

"Our goal is to help industries solve their engineering challenges by delivering unprecedented design freedom, part repeatability and quality in metal 3D printing," says Dr. Greses.

"We're here to provide the European markets with a seamless transition to Velo3D's end-to-end manufacturing solution including its advanced support-free technology."

Xavier Fruh has a Master's degree in electrical engineering from ESIGELEC Rouen and an M.B.A. from the Strasbourg School of Management, both in France. He has years of experience in the welding industry and most recently did business development around Europe for four years with AddUp, a French group specializing in AM technology.

"I am passionate about innovation and technology," Fruh says. "I'm keen to support our customers in overcoming the limits of traditional manufacturing and to help them take advantage of everything that AM, the next generation of manufacturing engineering, has to offer."

Benny Buller, founder and CEO of Velo3D, views his company's European growth as a sign of greater awareness of the production metrics delivered by advanced 3D-printing systems. "Expanding our footprint in Europe comes in response to new demand for the very highest-achievable levels of metal AM quality that only Velo3D provides--as well as design freedom that can unleash innovation and improve competitiveness for industries such as aerospace, oil and gas, and alternative energy," he says.

In March, Velo3D announced plans to merge with JAWS Spitfire Acquisition Corporation and become a public company.

Velo3d.com

Mujin

BRINGS ROBOTICS SOLUTIONS TO U.S. LOGISTICS COMPANIES

Mujin, a Japanese industrial robotics company bringing machine intelligence to robots throughout Asia since 2011, has established US-based Mujin Corp. and recently opened its first office in North America. Located in Sandy Springs, north of Atlanta, the office will house the company's expanding engineering, sales and support staff, including Mujin co-founder and Mujin Corp. CEO Ross Diankov. The office will serve as a hub for expanding the company's multi-award-winning solutions into the U.S.'s burgeoning logistics automation market.

Mujin's flagship product, the Mujin Controller, offers the first all-purpose intelligent robot control system. It uses real-time perception, motion planning and universal control to create robots that can handle complex logistics tasks that were previously not possible by making the system deployment faster, reliable and more affordable, and without the need for coding or "teaching." The Mujin Controller can manage any robotic application by guiding the movement of any robot arm via machine intelligence, a new and advanced category of artificial intelligence that automatically manages potential downtime scenarios through autonomous motion planning and perception without the need for human intervention.

"Companies that want to automate mundane and repetitive material-handling tasks face a myriad challenges, from the high costs of developing solutions for their difficult applications to unscheduled downtime and reprogramming costs when things don't go as planned or when robots must be reprogrammed due to a change in product or workflow," Diankov said. "As some of the largest companies in Asia have experienced, Mujin will bring a new wave of robotics technology to the U.S. market, with robots no longer needing to be taught how to move explicitly. Instead, the robots will already 'know' what they need through what we call 'machine intelligence,' which enables more capability and efficiency for robot picking applications that were previously impractical or difficult to deploy."

Machine Intelligence vs. Machine Learning & Human Control

Engineered by Mujin, "machine intelligence" is the fusion of real-time motion planning, perception, simulation, and control technologies. Unlike traditional 'teach-based' systems that require experts to program each movement or machine learning systems that 'learn' how to pick items over time, machine intelligence, enables the Mujin Controller to give a robotic system real-time decision-making capability that allows truly autonomous, reliable and production-capable robot applications.

With Mujin Controller, users begin by modeling the environment and setting relationships between the robots and target objects in a high level. The system then allows the robot to safely perform tasks by offering high-level goals without explicitly telling the robot where to go or how to move.

"With the robot motion now computed in real time without human intervention, the system must understand the intuitions behind completing tasks and then positions them in a way that enables the robot to dynamically adapt to changing circumstances," Diankov added. "With the mindset of machine intelligence, Mujin makes every robot more capable, efficient and reliable, and allows robots to perform practically any application with optimum efficiency."

www.mujin-corp.com

DMSC

ANNOUNCES UPDATE WITH MTCONNECT INSTITUTE

The Digital Metrology Standards Consortium (DMSC, Inc.) is pleased to announce an update to the Memorandum of Understanding (MoU) with the MTConnect Institute. The original MoU was signed in 2011.

As technology has evolved, both organizations recognize an even greater need to optimize the way industrial software and machines work together, to encourage manufacturing standards development, and to use data modeling to enable information interoperability by specifying the content of specific information and where it is stored — all with the goal of improving manufacturing efficiency.

MTConnect®

DMSC and MTConnect are leading modern industrial standards development by crafting a common, standardized, machine-readable information schema. This makes it easier for software developers, quality managers, engineering, and manufacturing to use quality and manufacturing data together. By promoting the Quality Information Framework (QIF) and MTConnect integration, manufacturers will have access to a wider variety of world class manufacturing machine and software solutions. The two organizations plan to support and promote joint projects that will encourage integration and use of standardized information frameworks for parts and processes.

Curtis Brown, president of DMSC, commented "We're enthused about collaborating with MTConnect in an effort to support and expand the use of QIF for manufacturing applications. A key benefit of collaboration between our two organizations will be expanded industry availability and enhanced implementation of QIF where an information schema for Quality data is needed. We look forward to integrating our data models with the promise of better connectivity between quality-related information and manufacturing process information in a more reliable and secure manner."

Doug Woods, president of the MTConnect Institute, said "Manufacturers looking to rapidly digitize their operations want integration across all departments. MTConnect breaks down silos, but harmonization with other standards is absolutely necessary to stay relevant. Working with DMSC on functional, technical interoperability is a big milestone for MTConnect and for smarter manufacturing."

qifstandards.org

STLE

ANNOUNCES FREE PODCAST SERIES

The Society of Tribologists and Lubrication Engineers (STLE) — the technical society for individuals in the field of tribology and lubrication engineering — is pleased to announce a new, free podcast series titled "Perfecting Motion: Tribology and the Quest for Sustainability."

The series is hosted by Neil Canter, Ph.D., STLE advisor, technical programs and services and Tribology and Lubrication Technology (TLT) writer. Content will feature insights from leading industry professionals about some of today's most important issues and trends impacting the global tribology and lubricants community.

In the introductory podcast, Canter discusses a series of technological developments that illustrate how tribology and lubrication can help address the threat of global warming and promote the movement toward sustainability.

"Tribologists are working on new approaches for further reducing friction and wear that will hopefully improve the efficiency of internal combustion engines, leading to a reduction in carbon dioxide emissions and an improvement in sustainability," says Canter. "Current research seeking to achieve this objective will be covered in future podcasts."

The second podcast will focus on tribochemistry and will include interviews with STLE board members, Kuldeep Mistry, Ph.D. (The Timken Company) and Nic Argibay, Ph.D. (Sandia National Laboratories). Canter says, "Tribochemistry explores the reactions that can occur between lubricants and surfaces under boundary lubrication conditions where there is little room between the two. Research is ongoing to determine how specific lubricants can react with surfaces under these severe conditions to produce materials, such as diamond-like carbon (DLC), that have the potential to achieve superlubricity where coefficient of friction values are below 0.005."

Future STLE podcast topics include:

- Additive Manufacturing
- Lubricant Additives
- Nanolubricants/Nanoadditives
- Lubricant Testing
- Graphene

www.stle.org/podcast