# Hannover Messe 2019

## Manufacturing Integration and Industrial Intelligence Take Center Stage in Germany

Matthew Jaster, Senior Editor

**Hannover Messe 2019 will focus on the integration, digitization and interconnection of industrial technologies transforming manufacturing today.** In recognition of this, the Integrated Automation, Motion and Drives (IAMD) show at Hannover Messe will feature a full range of products and solutions for the factory of the future, including factory and process automation systems, industrial IT, robotics, smart drives, and intelligent hydraulics and pneumatics systems.

The lead theme for Hannover Messe 2019 is "Integrated Industry — Industrial Intelligence."

"We want to focus on the connection between humans and machines in the age of artificial intelligence, particularly regarding how people use algorithms to teach machines to operate intelligently," said Arno Reich, senior vice president, industry, energy and logistics at Deutsche Messe AG. "This overarching theme covers topics such as Industry 4.0, Industrial Internet of Things, platform economies, cobots (collaborative robots), and cybersecurity."

Exhibitors at IAMD will show how manufacturers can use control technology and sensors to integrate automation technology, software and IT into electrical and mechanical drive systems. There will also be a strong focus on robotics. Hannover Messe takes pride in evolving with the changing needs of the manufacturing industry, according to Reich.

"We have an exhibitor advisory board that advises us on industry trends so we can adjust our exhibit program accordingly. For example, in 2018, we combined two exhibition sectors — Industrial Automation and Motion, Drives & Automation — to form the current sector Integrated Automation, Motion & Drives. The change was necessary to reflect the growing use of sensors, controls and networking products in electrical and mechanical drive systems. We also work closely with associations such as VDMA and ZVEI to organize relevant conferences and forums. An example of this is the Motion & Drives Forum in Hall 23, which we co-organize with VDMA," Reich said.

In 2019, the IAMD trade fair will focus on areas like smart sensors, smart drives, modular production, robotics, predictive maintenance and automated logistics systems as well as complete manufacturing solutions.

"Educational opportunities at IAMD include three daily forums: one for automation, one for motion and drives, and one for Industry 4.0. Key topics in 2019 include Industry 4.0/IIoT, 5G, artificial intelligence/machine learning, digital twin, predictive maintenance, cybersecurity, energy efficiency, and sustainability," Reich said.

In 2019, the trade fair is also launching a new career program called BE (Business & Expertise), which offers companies and STEM professionals a platform for targeted career placement and workforce development. "Pupils and students as well as young and senior professionals will find a wide range of events that cover career development and continuing education, including the Job & Career Expo, WomenPower Congress, and the Young Engineers Day on April 4," Reich said.

Hannover Messe presents all key sectors of industry at one place and one time, so visitors gain a comprehensive overview of the industrial value chain. The IAMD fair alone features more than 2,000 exhibiting companies and 9,000 products. "No other event in the world shows the industrial transformation in all facets," Reich said. "Thus,

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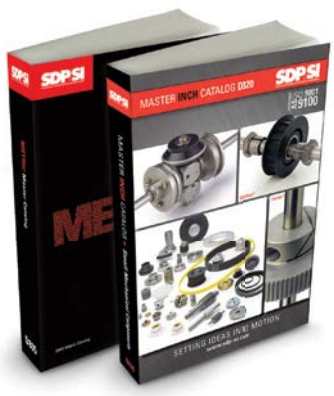

Hannover Messe is a must-attend for buyers who want to compare a broad range of technologies and solutions and keep up with global trends. In fact, two thirds of our exhibitors come from outside of Germany."

IAMD attracts roughly 130,000 visitors, so it is a great place to generate new business. Moreover, the customer pool includes fellow Integrated Automation, Motion & Drives exhibitors as well as exhibitors from neighboring sectors such as compressed air and energy. "Exhibitors at Hannover Messe collectively generate roughly 6.5 million business leads on average. Our supporting program features more than 90 conferences, forums and special displays, so Hannover is also a great place to learn and network," Reich added.

With a focus on smart integration and software, Reich believes success depends on close cooperation between IT and automation.

"Each has its own language, structures and approaches, so the challenge is getting the two disciplines to understand each other. When done correctly, smart integration builds communication channels that link people, machines and data; these in turn lead to greater efficiency and enable new business models," Reich said. "In Germany, we see more and more collaboration between the plant and mechanical engineering industries and traditional IT and software companies, such as the ADAMOS alliance formed by DMG MORI, Dürr, Software AG, ZEISS, and ASM PT.

Additionally, software is the central nervous system of smart manufacturing. Not too long ago, automation, motion and drives had little overlap with software. Today, however, digitalization has practically blurred the boundaries between these sectors. "Production and process automation specialists have become digital pioneers while the big software houses are turning more and more to the user industries for customers," Reich said.

The question remains how these concepts and technologies will evolve moving forward.

"We are currently in the midst of a project, Hannover Messe 2025, which addresses this question. Digitalization is changing industry rapidly. As the mirror of industry, Hannover Messe must comprehensively reflect this industrial transformation. Together with key exhibitors, VDMA and ZVEI, we are analyzing the structure and strategic alignment of the entire show. It is too early for results, but I think it is safe to say that the coming years will bring significant change to industry and Hannover Messe," Reich said.

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## Booth Previews

The following are some booths *PTE* readers may be interested in if they're attending Hannover Messe in Germany from April 1–5, 2019.

## NKE Austria GmbH

### HALL 22, STAND D19

At this year's Hannover Messe in Germany, bearing manufacturer NKE Austria GmbH presents bearings with black oxide finish. The protective layer improves run-in and wear characteristics and protects against environmental effects. Especially in critical applications such as wind turbine gearboxes, black oxide finish is a cost-effective and technically viable means of prolonging the service life and performance of rolling bearings.

The black oxide finish forms a protective layer for steel parts. In a multistage chemical process, the surface layer of the treated parts is converted into a 1 to 2 micrometer thin mixed ferrous oxide layer that causes the characteristic black appearance. Black oxide finished bearing components feature a set of special technical characteristics, especially in the case of components that move relative to each other. Multiple protective effects can be achieved if only one functional element (typically the rolling elements) is treated. For best effect, however, all functional surfaces of a rolling element bearing, including the inner and outer ring as well as the rolling elements, should be black oxide finished.

Black oxide finishing is already an established method in other industries. NKE uses this technology to further improve the technical properties of rolling bearings. The method has proven itself in practice especially with full complement cylindrical roller bearings, but other types of rolling bearing are also black oxide finished, depending on the application. NKE offers a large number of black oxide finished rolling bearings. At NKE, this finish is used especially for cylindrical roller bearings, which then carry the suffix SQ94. The most common variants are SQ94B (rolling elements black oxide finished) and SQ94-D (all bearing components except for the cage black oxide finished).

NKE offers both standard and special bearings for all industrial applications. A wide range of standard bearings is available from stock or at short production lead-times. NKE also provides customized products and solutions. In addition to product development and application engineering, NKE provides a full range of technical services, consulting, documentation and training. NKE's products are distributed through 12 international offices and more than 240 distribution outlets in 60 countries. (*www.nke.at*)

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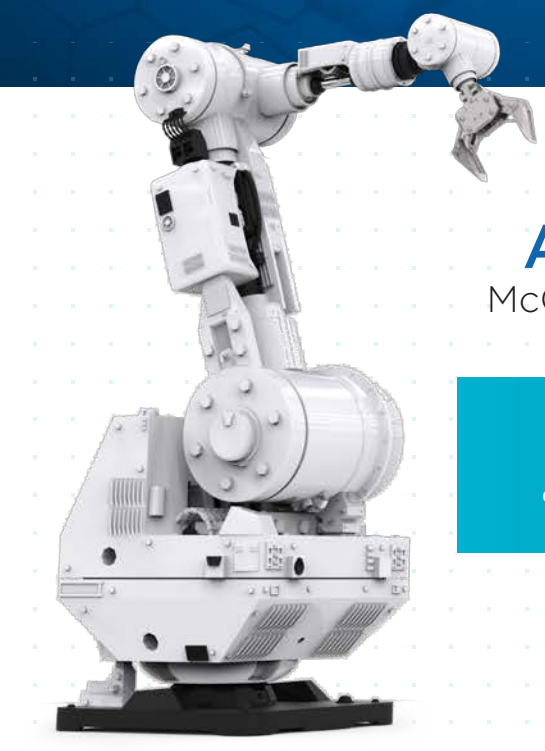

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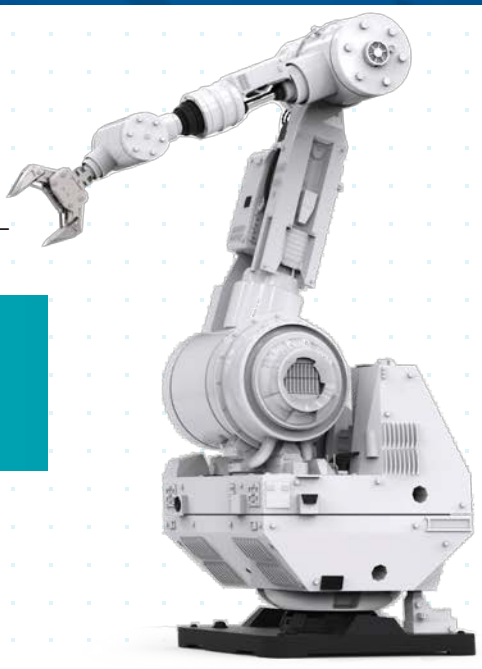

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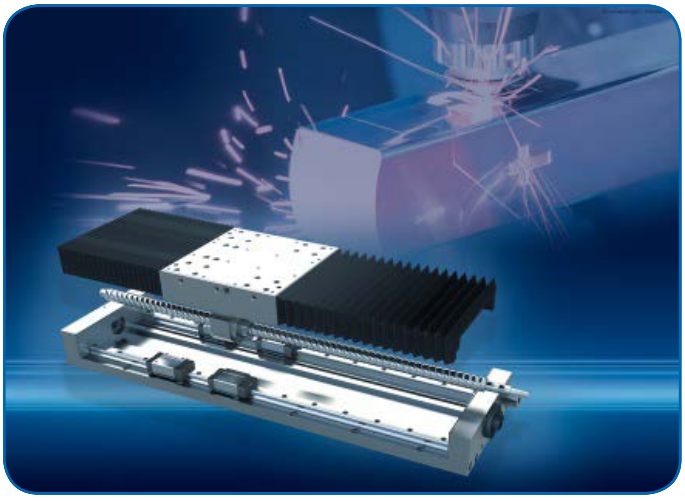
# Rodriguez GmbH

## HALL 22, STAND D59

The Value Added Products (VAP) division of Rodriguez GmbH develops and builds customized system solutions that are optimized for specific engineering tasks. These customer-specific system solutions are already proving their worth in a whole range of applications and sectors. What's more, each and every one of the optimized solutions is based on high-quality roller bearings and linear technology components from the company's extensive product portfolio. Most recently, the experts at Rodriguez implemented a tailor-made linear guideway table for a welding plant.



The RSTK-35 linear guideway table is part of an upright welding unit for processing various steel profiles. A welding cylinder moves up and down the Z axis of the vertically installed table, covering a maximum travel distance of 150 millimeters. The RSTK-35 linear guideway table has been optimized with a number of products carefully selected from the Rodriguez portfolio — a BRH-35 ball linear guideway with two rails, each with two blocks, a 50 × 10 ballscrew drive with FK5010 ballscrew nut, and a pair of double-row thrust angular contact bearings as the bearing for the ballscrew at the fixing side. (*www.rodriguez.com*)

# Igus GmbH

## HALL 16, STAND A18

Igus GmbH is a worldwide leading manufacturer of energy chain systems and plastic bearings. The family-run company based in Cologne directly operates in 35 countries, employs around 3.180 people and supplies customers through partners in another 51 countries around the world. More than 100,000 products of the Tribo experts, the so-called "motion plastics," plastic components for moving applications, are available from stock and piece number 1. To optimize the durability of their products and reduce machine costs by predictability of their lifetime, Igus operates the largest test labs in the industry.

One project in particular involves improving a conventional remote-control toy car to make it faster, more efficient and more robust than similarly tuned "series-standard" vehicles in a head-to-head race.

The Association of German Engineers (VDI) and Hannover University (HSH) — jointly launched the JET challenge for tech-savvy youngsters back in 2007. Much like full-scale motor racing today, the challenge goes beyond just cranking up the speed, with energy efficiency playing an equally important role. Visitors to IdeenExpo in June can see the results of this year's JET challenge live in action at the HSH stand, where 25 teams are pitting their 1:10 model racecars against each other on a 20-meter-long track. The rules are strict, with each team given a budget of just 50 euros to play with. Except for the battery, motor and speed controller, competitors have to buy, develop or build all components themselves.

With teams still busy preparing, the pupils from Eugen Reintjes vocational school have decided to upgrade their racecar with a hard-wearing, robust gear train. But since the tight budget pretty much rules out the option of designing a specialist solution, the students hunted high and low for an inexpensive alternative and finally came across the Cologne-based motion plastics specialist Igus. Once the gearwheels had been successfully configured online, Igus printed them using the selective laser sintering (SLS) technique and the high-performance plastic Iglidur I6 — a material that is exceptionally strong.

During a trial at the company's test laboratory, the engineers from Igus ran gearwheels made of polyoxymethylene (POM) and Iglidur I6 at 12 rpm under a load of 5 Nm. Although the milled POM gearwheel failed after just 621,000 revolutions, its printed Iglidur I6 counterpart was still in tip-top condition after one million revolutions, meaning the team from Eugen Reintjes school don't need to worry about breaking down. In fact, the gearwheels have already passed their first trial run, during which the team's energy-efficient racecar reached a maximum speed of 60 km per hour. See these and other similar components and technologies during Hannover in April. (*www.igus.com*)

# Baumüller

## HALL 14, STAND H12

Gradually electric engines are becoming popular in shipbuilding. The Danish shipyard Hvide Sande has commissioned the engine and automation specialist Baumüller in Nuremberg to deliver a hybrid drive system. The engine combines electric motors with diesel units, which are used only to generate electricity. In port, these can be switched off completely, leaving the ferry moving entirely under electric power. According to Baumüller, the hybrid engine cuts fuel consumption and emissions significantly. The new ferry is not only environmentally friendly, but also fast, at 11 knots. The hybrid drive concept also provides good maneuverability and a reduction in vibration. The ferry is to carry up to 32 vehicles and 196 passengers. It is due for delivery in Fall 2019.

Additionally, smaller businesses are finding themselves increasingly under pressure to digitalize their operations to keep pace with changing production standards. Retrofit strategies for networking and data analysis, while maintaining existing systems, are therefore a great option. The automation architects from Baumüller have developed a solution specifically for this purpose.

BAUDIS IoT enables the continuous recording, archiving, and analysis of machine data, whereby industrial companies can use either an existing cloud environment or an external service provider's infrastructure. The predictive maintenance solution from Baumüller is manufacturer-independent and can be used in combination with any machines. The adaptive, algorithm-based analysis functions can optimize processes or analyze predictive maintenance data, to spare production facilities unexpected failures and downtimes. Due to its open approach, BAUDIS IoT is also suitable for retrofitting and upgrading existing industrial machine environments. (*www.baumuller.com*)

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