

Hydrogen power from Saxony-Anhalt: how HORIBA FuelCon is shaping the energy transition

HORIBA FuelCon GmbH manufactures test stands for hydrogen industry components, builds manufacturing plants and sets standards with its test solutions for electrolyzers. In Barleben, work is being done at what is probably the world's largest and most state-of-the-art production facility for testing and manufacturing plants for fuel cells and electrolyzers. With its leading position in the field of hydrogen testing technology, the company is making a key contribution to the energy transition.

In Ostfalen Technology Park in Barleben, HORIBA FuelCon is working on the future of energy. Hydrogen is considered a key technology to reduce dependence on fossil fuels – and global demand is enormous. Anyone wanting to supply hydrogen in large quantities needs optimum plants and processes. This is where the company in Saxony-Anhalt comes into play, and it is setting new standards. HORIBA FuelCon develops and produces test solutions for electrolyzers, devices that split water into its components hydrogen and oxygen using electricity during electrolysis. “We’re helping to lead the energy sector into a sustainable future,” says Carsten Krüger, Head of Marketing Communications.

Currently, large pilot plants are being built just outside Magdeburg for the development and validation of electrolyzers in high-performance ranges. “There’s nothing like this anywhere else in the world, says Krüger. “Technologically, we’re at the forefront.” And this isn’t the only innovation: HORIBA FuelCon uses so-called multiple joining stations for high-temperature plants. The crucial advantage here: while conventional, heavy plants can usually only process one fuel cell stack – a stack of fuel cells – the company has now brought plants for four stacks to the market. And the potential continues to grow: “The capacity will increase even more in the future, developments are in full swing,” explains Krüger. For customers, this means a significant increase in efficiency. Thanks to state-of-the-art production facilities, HORIBA FuelCon not only enables quality control but also automated sintering – a key step in the manufacture of high-temperature fuel cells. These optimized processes shorten production times and reduce costs. The company makes use of automated solutions in manufacturing, replacing production stages that are slow, hands-on and resource-heavy.

25 years of experience and expertise ensures a competitive advantage

Fueled by this drive for innovation, the company can also draw on a wealth of established expertise. Originally established in 2001 as a spin-off, it has evolved continuously ever since. HORIBA FuelCon is now the global center of excellence for hydrogen technologies within the international HORIBA Group. From its base in Barleben, the company supplies industries around the world – including the automotive sector, the energy industry and research institutions. “Our more than 25 years of experience in automated testing gives us a real competitive edge,” says Carsten Krüger. What started out as a niche business has grown into a global success story. “We’ve helped shape the industry’s transformation – and we’ve been right there with it every step of the way.” Today the company has access to a global network of sites. Highly regarded around the world, its customer-specific testing systems are setting new standards for tomorrow’s energy solutions. Its customer base is steadily growing, especially outside Europe. And many new market entrants are turning to the team in Saxony-Anhalt for their expertise, benefitting from the full range of support – from early-stage development to full-scale production.

Rapid growth at one of Saxony-Anhalt’s Centers of Excellence

The company’s momentum is most visible in its recent expansion: just a few years ago, the world’s largest and most advanced production facility for fuel cell and electrolyzer testing and manufacturing systems opened in Barleben. This new factory has made the site the hydrogen hub within the HORIBA Group. “No matter whether you need a test stand in Japan or Germany – the systems are all made here in Barleben,” says Krüger.

HORIBA FuelCon is growing fast, with its workforce doubling between 2022 and 2024. The company draws on both regional specialists and international talent. “We introduced bilingual processes and digital documentation early on, and we’ve worked hard to remove barriers to entry. That makes us an attractive employer for skilled workers from around the globe,” Krüger explains. Today, people from almost 25 nations are employed at the Barleben site, which has been designated “Ostfalen Technology Park Center of Excellence” by the state of Saxony-Anhalt. This is a seal of quality that reflects close cooperation between business, research and academia. Here, innovation and investment contribute directly to regional growth. This is everyday reality: graduates from Otto von Guericke University Magdeburg (OVGU) are hired, and the company’s in-house training ensures a pipeline of skilled professionals for years to come. With an average age of 36, the team is young and dynamic –

just like its processes. “We’ve always been guided by progress,” says Krüger. Artificial intelligence is playing an increasingly important role in development and testing processes. “AI helps us anticipate demand and make complex processes more efficient. That means we can meet customer-specific requirements faster.” AI is especially valuable in fully automated testing – in scripting

and programming test procedures, for instance. And that's how the future will continue to take shape – with the course being set in Saxony-Anhalt. Why here? Carsten Krüger sums it up: "The conditions are ideal – we're close to leading research institutions like OVGU, Magdeburg-Stendal University of Applied Sciences, and the Fraunhofer Institute. We have a local supplier network and the space to keep expanding." A new plot of land has already been secured for future growth.

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