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Press

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New factory for researching battery cells in Münster focuses on digitalization with Siemens

- **The Fraunhofer-Gesellschaft commissions a research factory for battery cells with a capacity of up to 200 MWh in Münster, Germany**
- **Testing, implementation, and optimization of near-series production under real conditions of battery cells – for the automotive industry, among others**
- **Siemens is a production and building technology partner in this ecosystem**

According to a study by the Fraunhofer Institute for Systems and Innovation Research (Fraunhofer ISI), battery production capacity in Europe alone will quadruple by 2025 from 124 gigawatt hours in 2022 to over 500 gigawatt hours. By 2030, this figure is expected to increase tenfold to up to 1.5 terawatt hours.

Given these projections, the largest German and Europe-wide unique competence center for developing and testing the production of battery cells – including for electrically powered vehicles – is currently being built in the Westphalian city of Münster. And a major milestone was just achieved in Münster on April 30, 2024: the commissioning of innovative European machine technology for the “FFB PreFab." This is an important step toward the establishing the "FFB Fab," which will enable industry-oriented production research on plant technology on an industrial scale in Münster.

As a battery cell factory focused on research and development, Fraunhofer FFB will make a key contribution to advancing the production of battery cells "Made in

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Germany" or "Made in Europe" and positioning them at the forefront of strong international competition.

To ensure that production in Germany can provide new battery technologies more efficiently, cost-effectively, and at the highest quality in the future, the Federal Ministry of Education and Research (BMBF) and the State of North Rhine-Westphalia are funding the creation of a facility for researching battery production with a total of up to €680 million as part of the "FoFeBat" project. Research production provides an infrastructure where small and medium-sized enterprises as well as large companies and research institutions can test, implement, and optimize the near-series production of new batteries.

The Fraunhofer-Gesellschaft is now implementing this project step by step with several partner companies. One of these partners is Siemens AG, which is providing Fraunhofer FFB with software and hardware solutions based on the open Siemens Xcelerator platform. With their interoperable systems, the Digital Industries and Smart Infrastructure Business Units are contributing to the digitalization, automation, control, and monitoring of the machines, processes, and buildings. The real production and environmental conditions are being digitally mapped along the entire value chain by connecting OT (operational technology) to IT (information technology). Sensors in the building and throughout the production environment will provide all relevant infrastructure data in real time.

Using the Manufacturing Execution System (MES) and the IIoT (Industrial Internet of Things) platform, Fraunhofer FFB will be able to plan, control, optimize, and flexibly scale its production processes. The Desigo CC building management platform will determine the optimal production environment with data-based and demand-oriented processes, even in clean-rooms and drying operations.

The collected data will be of central importance for Fraunhofer FFB in fulfilling its mission of researching the production of battery cells using a digital twin of the factory. The digital twin reflects the entire factory, from the technical building equipment to all production processes. This guarantees production under near-series and difficult conditions, e.g. clean room production, for a variety of industrial partners.

"Automation and digitalization are the keys to continuing to be competitive in industrial production in Germany in the future. With its construction of a new research factory for battery cells in Münster, the Fraunhofer-Gesellschaft will play an important pioneering role for the German electromobility supply industry. Siemens is contributing its industry-specific expertise in automation and digitalization," says Thorsten Selle, Head of the Siemens branch in Münster.

"Along with the Fraunhofer-Gesellschaft, we want to take the battery industry in Germany to the next level. When it comes to building automation and production equipment, we deliver innovative and sustainable solutions. With our expertise and decades of experience, we see ourselves as an integral part of the ecosystem of local value creation in electromobility," adds Markus Birkhan, Head of Vertical Battery at Siemens AG.

Caption: FFB PreFab of Fraunhofer-Gesellschaft in Münster, Germany

Caption: Symbolic image of battery cell production

This press release and press photos can be found at the following link:
https://sie.ag/eZyZi

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Fraunhofer Research Institution for Battery Cell Production FFB is part of of the Fraunhofer-Gesellschaft in Münster, Germany. Their concept envisions a combination of laboratory and production research on different battery cell formats: round cell, prismatic cell, and pouch cell. Fraunhofer FFB employees will research individual process steps or the entire production chain as required. Along with the project partners at the MEET Battery Research Center at the University of Münster, the PEM Chair at RWTH Aachen University, and Forschungszentrum Jülich, the Fraunhofer-Gesellschaft in Münster is creating an infrastructure where small, medium-sized, and large companies as well as research institutions can test, implement, and optimize the near-series production of new batteries. During the initial phase of the project, Fraunhofer FFB was established as a branch of the Fraunhofer Institute for Production Technology IPT. The Federal Ministry of Education and Research and the State of North Rhine-Westphalia are funding the establishment of Fraunhofer FFB with up to €680 million as part of the "FoFeBat" project.

Siemens Digital Industries (DI) is an innovation leader in automation and digitalization. Closely collaborating with partners and customers, DI drives the digital transformation in the process and discrete industries. With its Digital Enterprise portfolio, DI provides companies of all sizes with an end-to-end set of products, solutions and services to integrate and digitalize the entire value chain. Optimized for the specific needs of each industry, DI's unique portfolio supports customers to achieve greater productivity and flexibility. DI is constantly adding innovations to its portfolio to integrate cutting-edge future technologies. Siemens Digital Industries has its global headquarters in Nuremberg, Germany, and has around 72,000 employees internationally.

Siemens AG (Berlin and Munich) is a leading technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. By combining the real and the digital worlds, Siemens empowers its customers to transform their industries and markets, helping them to transform the everyday for billions of people. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a globally leading medical technology provider shaping the future of healthcare. In fiscal 2023, which ended on September 30, 2023, the Siemens Group generated revenue of €77.8 billion and net income of €8.5 billion. As of September 30, 2023, the company employed around 320,000 people worldwide. Further information is available on the Internet at www.siemens.com.