



BatteryCityMünster

Largest Battery Research Hotspot in Germany and Europe





BatteryCityMünster

Münster has been known for its cutting-edge research on lithium-based batteries for years with the work of the MEET Battery Research Center at the University of Münster, the Helmholtz Institute Münster (HI MS) and the IWARU – Institute for Infrastructure Water Resources Environment at the FH Münster University of Applied Sciences. With the newly established Research Institution for Battery Cell Production FFB run by the internationally renowned Fraunhofer-Gesellschaft, Münster gets another research institution with the focus on innovative and more sustainable battery production technologies.

Alongside several innovative companies in the region involved in the battery industry, known as hidden champions, the location is evolving into a Battery-CityMünster. Here, the entire value chain of battery manufacturing is covered at research level, from material synthesis to cell manufacturing to recycling, and has already attracted the interest of companies and scientific institutions across the world. In other words, Münster is THE PLACE TO BE when it comes to battery research and development.









MEET Battery Research Center

Münster Electrochemical Energy Technology (MEET) at the University of Münster is one of the foremost battery research centers in Germany and a leading driver of top-level research and development (R&D) internationally. The aim of the research institute is to develop sustainable, high-performance batteries for the future and to decisively advance battery material and cell production in Germany and Europe.

To ensure a circular economy of batteries, the R&D covers the entire supply chain of batteries: from analytics and the development of new or improved materials to battery cell design and production and the recycling of energy storage materials and devices.

MEET Battery Research Center is a leading part of the national and international cooperation network in industry and academia. The team facilitates the global transfer of knowledge and technology in joint projects and research collaborations with academic institutions, as well as large companies and SMEs. The opportunities for cooperation are flexibly adapted to individual needs of its partners.

www.uni-muenster.de/MEET/en





Helmholtz Institute Münster (HI MS)

Helmholtz Institute Münster (IMD-4; HI MS) 'lonics in Energy Storage' develops theory-, material-, process- and system-based solutions for electrochemical energy storage for mobile and stationary applications at its three locations in Aachen, Jülich and Münster. The main focus of materials science and the optimization of current and the development of novel storage systems is on the electrolyte as the central component of a battery cell.

The design and development of innovative electrolyte formulations are based on liquid, polymeric and solid materials, as well as combinations of these in hybrid electrolytes. In national and international collaborations, the scientists focus on improving the lifespan, safety, energy, performance and reliability while simultaneously reducing the costs of the energy storage device.

www.fz-juelich.de/en

Fraunhofer Research Institution for Battery Cell Production FFB

Fraunhofer

As a link between science, research and industry, the main objective of the Fraunhofer Research Institution for Battery Cell Production FFB is to establish a research infrastructure for ecological and economical battery cell production. It aims to accelerate the innovation and commercialization process of production technologies for existing and future cell formats.

Our work focuses on all aspects of battery (production): from battery technology and certification of new battery types to process optimization in production, application, battery recycling and further education offers at our European Learning Lab Battery Cells ELLB.

In 2024, we opened the **FFB PreFab**, our first of two battery cell factories for research purposes. On 6,450 square meters, we house a **full-scale battery cell production line**, innovation laboratories, as well as rentable clean and dry rooms for companies to scale their technologies. The infrastructure can be customized to meet the specific needs of our partners.

Construction of the larger FFB Fab is planned to start in 2025.

www.ffb.fraunhofer.de/en.html







IWARU

At IWARU - Institute for Infrastructure · Water · Resources · Environment, an interdisciplinary team researches and develops concepts, products and services for the sustainable use and management of resources.

Furthermore, the IWARU conducts research in **new** strategies and technologies for the sustainable management of critical raw materials. One focus is the recycling and circular economy of batteries. Appropriate **presorting of batteries** by chemistry, as well as **disassembly** and **mechanical processing** of the shredded material streams, are key activities in making recycling efficient and environmentally friendly.

This enables the critical metals lithium, cobalt and nickel, as well as copper, aluminum and plastics, to be returned to the **raw materials cycle**.

We are always interested in new partnerships with research institutes and industry to drive recycling forward. Together, we can develop innovative approaches and promote the conservation of resources and sustainability in battery recycling.

en.fh-muenster.de/iwaru/index.php







As a leading provider of calender, embossing, and rotary processing systems in standard and custom designs, Matthews Engineering develops and manufactures highly specialized machines and systems for the energy and storage market – covering the entire process from development, design and manufacturing to installation and commissioning of the production lines. Comprehensive testing facilities and versatile laboratory equipment form the link between lab and large-scale manufacturing.

The flexible laboratory calender **GK300L** enables the mapping of scalable laboratory processes. The device can be tailored precisely to the respective requirements and allows for the processing of dry electrodes.





Matthews Engineering offers advanced equipment for the manufacturing of battery components – from calendering lines for continuously and intermittently coated electrodes (wet coating), to their innovative production technology for Dry Battery Electrodes (DBE), also including roll-to-roll primer coating of current collectors. Production lines for battery separator film and battery wrapping applications complete the portfolio.

www.matthews-engineering.com www.saueressig.com/en www.olbrich.com/en





Aumann Group

We are a world-leading provider of special machinery and automated production lines with a focus on e-mobility.

Our expertise extends across the entire value chain of battery manifacturing – from high-precision electrode coating to the automated assembly of battery modules and packs.

Our innovative, scalable solutions help meet the growing demand for high-performance and sustainable battery systems for electric vehicles and energy storage.

www.aumann.com/en/



Seine Batteriesysteme

For more than 40 years, SEINE Batteriesysteme has been your reliable partner in the field of battery systems and charging solutions for intralogistics and renewable energies. Our expertise extends to the construction, operation and comprehensive service of premium batteries for industrial applications impressing with their outstanding performance and longevity.

Our solutions are not only remotely maintainable and come with long-term guarantees, but also offer you all-round support from our in-house service team. We cover a large part of the value chain – from development and operation to refurbishment and recycling of the batteries.

www.seine-batterien.de



(CNS)





Cabot

Cabot Corporation is a global leader in specialty chemicals and performance materials, with a focus on conductive additives for lithium-ion batteries. Cabot's uniquely comprehensive product portfolio includes LITX® Conductive Carbons, ENERMAX® Carbon Nanotubes and ENERMAX® Carbon Nanostructures, each designed to enhance battery performance by improving electrical conductivity, energy density and cycle life. These additives are critical for applications in electric vehicles, energy stationary storage and consumer electronics and are offered in various forms, including liquid dispersions, enabling customized solutions that can be seamlessly integrated into existing manufacturing processes.

www.cabotcorp.com/batteries

E-Lyte

E-Lyte is a full-service partner in the field of electrolyte solutions for energy storage technologies, such as Li-ion, Na-ion and next generation batteries as well as supercapacitors. The unique know-how in the field of electrolytes, strong cooperation partners, a unique testing infrastructure and a cutting-edge production facility for electolyte solutions in Kaiserslautern make E-Lyte a trusted and sustainable partner. E-Lyte was founded in Münster in May 2019. In this short time, E-Lyte has become an internationally operating company and the brand "E-Lyte" has become synonymous with the most innvovative and high-quality electrolytes "Made in Germany" in the energy storage market.

www.e-lyte.de





Talents and Startups: Building the Future of the Battery Industry

The battery industry relies on well-trained professionals, practical education and startups to drive innovation. The BatteryCityMünster guarantees the training of these talents and promotes entrepreneurs.

To do so, the International Graduate School BACCARA was established in 2020 and prepares students specifically for the requirements of Industry 4.0 by addressing various interdisciplinary research topics such as material science, electrochemistry and recycling, as well as data analysis and AI.

In terms of entrepreneurship, the REACH – EU-REGIO Start-up Center is the primary contact point for academic start-up ideas of the universities in Münster and serves as a vital link between research, innovation, and industry in the region of TECH.LAND, a Dutch-German cross-border cooperation program.

www.uni-muenster.de/Baccara www.reach-euregio.de www.techland.org







A Great Place to Live and Work

The city of Münster is in the western part of Germany, close to the Netherlands, at the heart of Europe.

Münster has a population of about 320,000, and is known for its university, its economic strength, and its commitment to social and ecological issues. Münster is the largest city and the most important location for work in the region. Münster's economy has grown steadily over the years, making Münster one of Germany's most prosperous regions.

Münster has a picturesque and very lively city centre with a colourful mix of shops and restaurants. Distributed throughout the city, Münster has about 40 business, trade and industrial sites. Alongside a number of larger companies, the economic landscape of Münster is dominated by strong medium-sized businesses.









Good Accessibility

Münster provides easy access to a total of five motorways, supplemented by a dense network of railway lines, connecting Münster with national and international destinations. Münster has its own airport nearby (FMO), plus several international airports within reach, such as Düsseldorf, Amsterdam, and Frankfurt. These transport links are completed by two waterways, the Dortmund-Ems Canal and the Mittelland Canal, providing direct links to the "Silk Road" (Duisburg/Rhine) and to the North Sea-Atlantic route (e.g. Rotterdam). The Hansa Business Park transshipment point on the Dortmund-Ems Canal is 250 metres in length, and allows for two heavy goods ships to be loaded and unloaded simultaneously.



Interested?

Do you want to cooperate with one of our battery partners from academia or industry? Are you interested in laboratory or office space for a branch in Germany?

Contact us for more information:

Economic Development Corporation (EDC)

Wirtschaftsförderung Münster GmbH Steinfurter Str. 60a 48149 Münster +49 (0)251-68642-0 info@wfm-muenster.de www.wfm-muenster.de

Technology Development Corporation (TDC)

Technologieförderung Münster GmbH Mendelstraße 11 48149 Münster +49 (0) 251 980-1104 info@technologiefoerderung-muenster.de www.technologiefoerderung-muenster.de



Enno Fuchs CEO (EDC) +49 (0) 251 68642-10



Volker Ruff CEO (TDC) ++49 (0) 251-980-1111

© Photographs, Visualisations:

Stadt Münster, ARTVISU Artur Krause, Dennis Neuschaefer-Rube, Thomas Mohn, MEET/Judith Karft, MEET/Lessmann, FH Münster/Vieth, FH Münster/Liedtke, Fotografie Witte/Wattendorff, shutterstock.com, Landa,Designer

Design: Landa, Designer