

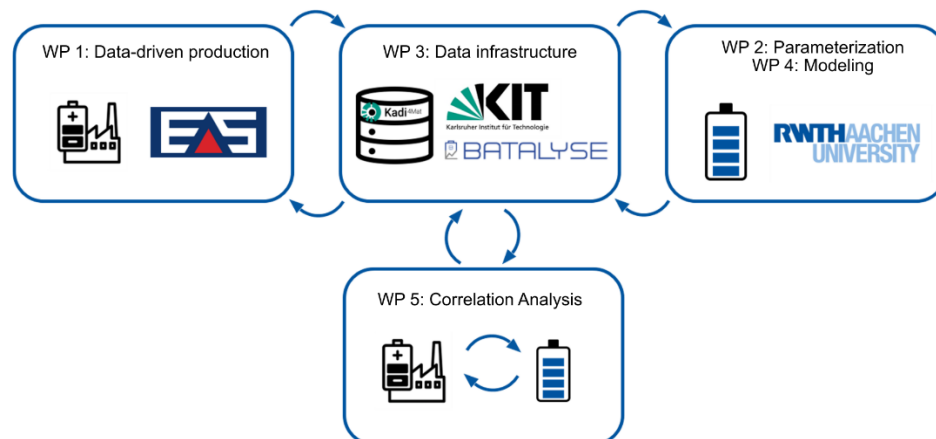
Press release, July 30, 2026:

Lithium-Ion Technology, Research & Development, Energy Transition, Economy

AI for the Battery Cell Production of the Future: Research project ‘KiBa-Pro’ launches to improve the quality, service life, and sustainability of LFP cells

Nordhausen / Germany. The future of European battery cell production is digital. With the launch of the collaborative project KiBa-Pro ("Digitalization of Battery Cell Production"), a strong consortium of industry and research partners is developing new approaches to specifically improve the manufacturing of lithium iron phosphate (LFP) cells through digitalization and artificial intelligence. Under the consortium leadership of EAS Batteries GmbH, renowned research institutes and industrial partners are working together to optimize production processes driven by data, enhance cell quality, and substantially increase the service life of battery cells. The project runs from July 2026 to June 2029. Its objective is to strengthen the competitiveness of European battery manufacturers and jointly pave the way for intelligent, digital cell production.

KiBa-Pro: AI-Based modelling and digitalization of cell production to improve production quality and cell service life



How can data and artificial intelligence transform the battery cell production of tomorrow? This question is at the core of the collaborative project KiBa-Pro, which was launched in July 2026 under the leadership of EAS Batteries. Together with research institutions and industrial partners, a new data-driven approach for the production of lithium iron phosphate cells is being developed. As a first step, EAS's production line will undergo comprehensive digitalization. Production, material, and quality data will in future be systematically collected through additional sensor technology and modern interfaces and consolidated within a central data infrastructure. This will create a continuous data foundation covering the entire production process. Manufacturing itself will thus become a source of data for intelligent optimization processes and future digital production environments.

Based on these data, the project consortium will develop a virtual LFP cell. Using state-of-the-art AI methods, large volumes of data will be analyzed to reveal correlations between production parameters and subsequent cell characteristics. Factors such as coating thickness, porosity, material throughput, or temperature profiles can thereby be specifically evaluated. The goal is to predict impacts on service life, capacity, and performance before conducting actual production trials. This approach opens up new opportunities for industrial battery cell manufacturing: in the future, optimizations can first be simulated and evaluated virtually before being implemented in production. This reduces development effort and scrap rates, accelerates optimization cycles, and enables the early identification of sources of error. At the same time, it creates important prerequisites for future requirements such as the Digital Product Passport.

The project results will be transferred step by step into industrial practice. During the first project year, production processes will be digitally captured, data platforms established, and initial reference cell batches manufactured. In subsequent phases, the virtual battery cell and AI-supported models for predicting cell performance will be developed. By the end of the project, the methods developed will be industrially validated and directly integrated into production. In doing so, KiBa-Pro makes an important contribution to the action area "Scaling Research and Digitalization" within the Battery Research Framework Concept of the German Federal Ministry for Research, Technology and Space.

The project consortium combines expertise across the entire battery value chain: EAS Batteries is responsible for project coordination and the digitalization of cell manufacturing; RWTH Aachen University is responsible for cell characterization and the development of AI models; KIT and Batalyse are responsible for research data management, automated evaluation of measurement data, and the digital product passport at cell level; and Omron, as an associated partner, contributes expertise in automation and data acquisition.

With KiBa-Pro, EAS Batteries is strengthening not only its own manufacturing expertise but also Germany as a battery production location. In the long term, the project partners aim to increase cell service life by at least 10 percent and production yield by at least 15 percent. The solutions developed are intended to be transferable to additional industrial applications and to sustainably strengthen the competitiveness of the European battery industry.

Funding

Ministry: Federal Ministry for Research, Technology and Space
Project Duration: 07/2026 – 06/2029
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Project partners

EAS Batteries GmbH (Coordinator)
Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen, Institute for Power Electronics and Electrical Drives (ISEA)
Karlsruhe Institute of Technology (KIT), Institute for Nanotechnology (INT)
Batalyse GmbH
Omron Europe B.V. (Associated Partner)

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More informationen

Pictures: <https://eas-batteries.com/de/news/press-kit>

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About EAS Batteries

Large-format cylindrical cells, LFP as a safe cell chemistry, energy-efficient extrusion, and an efficient contacting method are among the defining innovations of three decades of EAS history. As a highly specialized niche supplier, EAS has been developing innovative cell and battery solutions for more than 30 years at its production site in Nordhausen, including extremely robust and high-performance cells for applications in the aerospace, aviation, automotive, NRMM (Non-Road Mobile Machinery), and maritime industries. The EAS brand emerged from GAIA Akkumulatorenwerke GmbH, founded in Nordhausen in 1996. Since June 2017, EAS Batteries GmbH has been part of the Monbat Group.

About RWTH Aachen

For RWTH Aachen University, with approximately 46,000 students, the Center for Ageing, Reliability and Lifetime Prediction of Electrochemical and Power Electronic Systems (CARL) serves as the executing institution. CARL is an interdisciplinary research center providing a unique 5,000-square-meter infrastructure for research into the ageing, reliability, and service life of electrochemical energy storage systems. Under the leadership of Professor Dirk Uwe Sauer and Professor Weihai Li, the center contributes its expertise in battery characterization, modeling, and AI-supported digitalization to the project. In doing so, RWTH complements the industrial partners with a scientifically grounded perspective on cell quality, service life, and performance.

About Karlsruhe Institute of Technologie (KIT)

The Karlsruhe Institute of Technology (KIT) is among the leading research institutions in the field of innovative materials and technologies. At the Institute for Nanotechnology (INT), the research group led by Dr. Michael Selzer develops the research data infrastructure Kadi4Mat. Through Kadi4Mat, KIT strengthens its activities in research data management and provides a powerful infrastructure for innovative materials and battery research. By integrating heterogeneous data sources, Kadi4Mat promotes the efficient use and reuse of research data as well as the transparency and reproducibility of scientific results. The platform enables researchers to systematically capture, document, and sustainably preserve data throughout the entire research cycle. As such, the platform makes a significant contribution to the digitalization of materials science and the establishment of modern data-driven research approaches. As part of NFDI4ING, the POLiS Cluster of Excellence, and the Helmholtz Cloud, Kadi4Mat also promotes the networking of research data and facilitates collaboration among researchers from different disciplines as well as with partners from academia and industry.

About Batalyse

Batalyse GmbH, headquartered in Walzbachtal and founded in 2021 as a spin-off of the Fraunhofer Institute for Chemical Technology (ICT) in Pfaffenhofen, develops software for data management and the automated analysis of electrochemical storage and conversion systems, from research and quality assurance to production. Its customer base in Europe and North America includes material manufacturers, component suppliers, cell producers, and industrial and public research organizations. The software automatically collects raw data from any device and in any format, standardizes it, and connects it into a continuous data foundation. On customer systems, it manages tens of thousands of test datasets and evaluates hundreds of tests daily. By correlating product, test, and process data, Batalyse accelerates development cycles, provides reliable decision-making support, and improves product and process quality. The software modules Data Analysis (automated evaluation of electrochemical data), Collect (research data management), Mind (Laboratory Information and Management System), and EIS Analyzer (impedance analysis) can operate independently or in combination and are continuously being expanded.