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## Project TwinTrace: Customcells works together with partners on a smart battery factory



*Itzehoe/Tübingen, Germany (ots) -*

Setting the digital course for the future of battery cell production: Under the leadership of Customcells, the joint project TwinTrace brings together partners from industry and research to ensure particularly efficient production processes with the help of a so-called digital twin. With TwinTrace, the project partners are raising the quality and traceability of battery cell production to a world-leading level and setting standards for smart digitization in the industry.

Greater efficiency, lower costs, maximum traceability, and even higher product quality: the collaborative project TwinTrace is focusing on the digitalization of battery cell production - and thus on the future of the industry for premium battery cells on the road, the water, and in the air. Together with the Fraunhofer Institute for Manufacturing Engineering and Automation IPA, a leader in the field of digitalization of battery cell production, and acp systems AG, one of the global technology leaders in the field of advanced clean production and the associated process automation and system integration, Customcells is working on a smart battery factory at the Tübingen site. The research project is funded by the German Federal Ministry of Economics and Climate Protection (BMWK).

### Premium processes for global market leadership

"The future of battery cell development and production is undoubtedly networked and high-tech. With the TwinTrace project, Customcells is playing a pioneering role worldwide. The digitalization of the entire process chain contributes to more sustainability and greater efficiency. Such innovations underline our claim of being a leading global brand in the field of premium battery cells," says Dr. Dirk Abendroth, CEO of the Customcells Group. Within the framework of TwinTrace, all relevant product and process data relating to the manufacture of the battery cell are determined. This enables traceability of all material and product components and also creates the basis for the creation of a digital twin.

A digital twin is a virtual representation of a real object or process. The twin uses data and information about the product or process it is supposed to represent in real time. This makes it possible to simulate, analyze, and optimize the behavior of products or the performance of a process - all without having to change the product or process itself. In the case of TwinTrace, artificial intelligence (AI) is also used to determine the ideal process parameters for each battery cell during the various manufacturing steps and to control the process accordingly in a data-driven manner.

### Direct collaboration between industry and research for more innovation

"Digitization must not be reduced to collecting and storing data. Value creation through digitization can only be achieved if the data is also further processed and incorporated into automated decisions - like for process control. This is precisely where the digital twin comes in, offering a technical solution that should be easy to integrate into existing production processes," says Florian Maier from the Center for Digitized Battery Cell Production (ZDB) at Fraunhofer IPA. "The direct exchange between

research and industry is essential in this area, as in the end it is always the scalability of a solution that makes the difference. The joint project provides us with valuable insights for this which we can also take into account in our further research work," says Michael Oberle from Fraunhofer IPA. "The digitization of industry is one of the great opportunities for the future of the German economy and an important prerequisite on the path to greater sustainability. The digital twin brings more flexibility and at the same time more quality to processes and opens the field for a whole range of other possibilities. We are creating a new premium standard here for the future of the battery industry that will also be relevant for other industries," says Maryam Zehtaban from acp systems AG.

#### Use of machine learning in monitoring of active cells

Beyond TwinTrace, Customcells is also driving digitalization and testing the use of various digital tools and techniques in manufacturing and development. The use of technologies such as machine learning and digital twins opens up a wide range of possibilities in areas such as material development, process optimization and the monitoring of active cells. The company regularly provides insights and topics on the future of the battery cell on its international technology blog "[Master of Batteries](#)".

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#### Medieninhalte



*The "TwinTRACE" joint project brings together industry and researchers to shape the factory of the future and sets itself the goal of developing a digitization technology with which the quality and traceability of a variant-rich battery cell production can be brought to a world-leading level. / More information via ots and [www.presseportal.de/en/nr/156638](http://www.presseportal.de/en/nr/156638) / The use of this image for editorial purposes is permitted and free of charge provided that all conditions of use are complied with. Publication must include image credits.*

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