

PRESS RELEASE (JUNE 27, 08:00AM CET)

German Li-ion battery research facility to become one of the world's most energy-efficient

Weiss Klimatechnik has chosen Cotes Ultradry dehumidifiers for battery dry room dehumidification within the German publicly funded project "Research Fab Battery Cells (FoFeBat). The deriving research institution Fraunhofer FFB has commissioned Weiss Klimatechnik in the past spring to build the cleanrooms in the first of two new arising buildings in Münster, Germany.

Battery dry rooms represent over 43% of battery production energy usage, which is why Weiss Klimatechnik chose Cotes Ultradry dehumidifiers to meet the extremely dry air requirements of dewpoints below -78°C whilst reducing net energy usage of the battery dry rooms dramatically.

"With the expertise of Weiss and the energy-efficient dehumidifiers from Cotes, this research facility in Münster will have one of the world's most energy-efficient battery dry rooms," says Dirk van Manen, Managing Director, Weiss Klimatechnik GmbH.

The overall reason for the significant reduction in energy consumption of the dehumidifiers lies in the low nominal temperatures and efficient use of sustainable energy sources. Here, Cotes developed a patented technology called Exergic that does not need to burn gas and can source its energy from a range of sustainable sources.

"Our machines prefer temperature margins of $80-90^{\circ}\text{C}$, significantly lower than the closest competitors' solutions that run optimal conditions at $140-180^{\circ}\text{C}$ and burn gas to reach those temperatures. Using lower temperatures means energy consumption is reduced and safety margins are better," explains Thomas Rønnow, Business Development Manager and Owner of Cotes.

Producing extremely dry conditions in the most energy-efficient way

Lithium-ion batteries and other sustainable energy storage systems require extremely dry and extremely clean conditions during research and production. To ensure these conditions, Weiss Klimatechnik chose the most energy-efficient dehumidification system for drying air. The solution, developed by Cotes, not only fulfils every climatic requirement but also scores highly for energy efficiency. Saving energy is essential because drying air by adsorption can

be highly energy intensive. However, Cotes' dehumidifiers enable various energy-efficient fresh air treatment, regeneration air treatment and heat recovery processes.

Key technical data of the system

The 3,000 m² research facility includes around 1,500 m² of cleanroom and dry room space and airlocks and equipment areas. In the dry rooms, the residual water content of less than 0.001g/kgTrl (grams of water per kg of air) is required. Cotes Ultradry adsorption dehumidifiers deliver dewpoints of below -78°C. Ultradry air is of paramount importance because lithium reacts powerfully with water, releasing explosive hydrogen, and even average humidity can cause exothermic reactions. As a result, certain areas of the facility must be run with extremely dry air.

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About Weiss Technik companies www.weiss-technik.com

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About Cotes www.cotes.com/ultradry

Cotes is a family-owned Danish company with over 35 years of experience on a mission to deliver sustainable adsorption dehumidifiers [dry-air solutions] for a wide range of industrial applications worldwide. Cotes' commitment and proven track record have driven the company to be a leading supplier of adsorption dehumidifiers to lithium-ion battery factories. Cotes Ultradry Adsorption Dehumidifiers are the most energy-efficient dry-air solutions for lithium-ion battery dry rooms. The company, a holder of multiple international patents and awards, focuses on manufacturing efficient and high-quality adsorption dehumidifiers with a positive impact – the right way to dry.

About Fraunhofer FFB www.forschungsfertigung-batteriezelle.fraunhofer.de

The Fraunhofer Research Institution for Battery Cell Production FFB is a facility under the umbrella of the Fraunhofer-Gesellschaft. Its concept involves a combination of laboratory and production research for different battery cell formats – round cell, prismatic cell and pouch cell. Fraunhofer FFB employees research individual process steps or the entire production chain as required. Together with the project partners of the MEET Battery Research Center of the WWU Münster, the Chair PEM of the RWTH Aachen University and the Research Center Jülich, Fraunhofer FFB is creating an infrastructure with which small, medium-sized and large companies, as well as research institutions, can test, implement and optimize the near-series production of new batteries. The German Federal Ministry of Education and Research (BMBWF) and the state of North Rhine-Westphalia are funding the establishment of the Fraunhofer FFB with up to a total of 680 million euros as part of the "Research Fab Battery Cells (FoFeBat)" project.

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