

Press Release, May 2023



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## **Filling of battery cells with electrolytes**

HNP Mikrosysteme for the first time at energy fair EES in Munich

**May 2023: Filling electrolytes into battery cells is a critical step in battery manufacturing. Small dispensing errors cause large variations in battery performance. Hermetic, high-precision dosing pumps are needed for this application.**

Filling electrolytes into battery cells is a critical step in battery manufacturing. Factors such as electrolyte formulation, pressure and temperature must be considered in the filling process. Critical to battery performance and life are the quality of the electrolyte and the accuracy of the filling process. Small dispensing errors cause large variations in performance. High-precision micro annular gear pumps from HNP Mikrosysteme are used for this application.

Lithium-based liquid battery electrolytes are crystallizing and hazardous to health, and require the use of hermetic pumps. The magnetic hermetic pump mzs-7265 doses volumes between 4 and 8 ml in 2 seconds with a deviation of less than 1%. The process takes place under vacuum conditions. In addition to low-pulsation and precise dosing, the pump realizes very short cycle times.

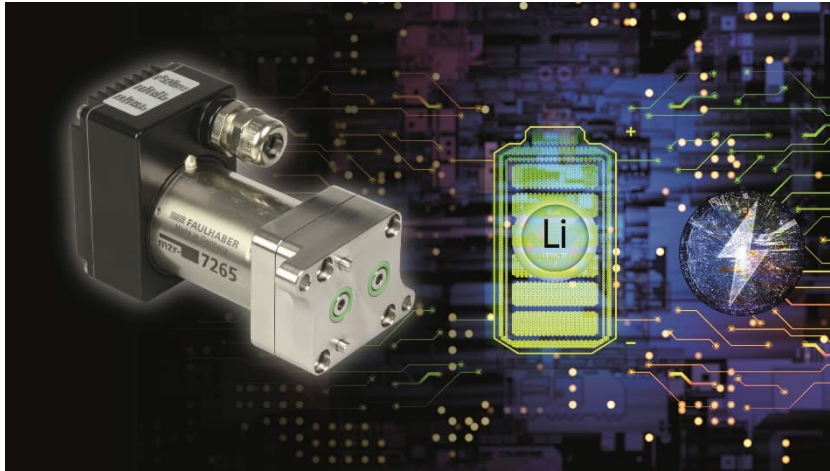
LOHC-based hydrogen storage is another application field for micro annular gear pumps. Pumps of the high performance series, mzs-4605 or mzs-7205 are used to deliver LOHC dibenzyltoluene, also known as Marlotherm, perhydro-dibenzyltoluene and benzyltoluene. For example, the pumps deliver dibenzyltoluene with volume flow rates between 1 ml/min and 240 ml/min into a reactor. Here, the medium is charged with hydrogen by means of hydrogenation.

The importance of precision micro pumps in the field of renewable energies will be presented by HNP for the first time at the trade fair booth at EES - Europe's largest trade fair for batteries and energy storage systems. The EES will take place in June, 14 to 16, 2023 as part of The smarter E Europe in Munich. HNP exhibits at the Joint Booth Hydrogen, Fuel Cells & Power-to-Gas, hall B2 at booth: B2.450E.

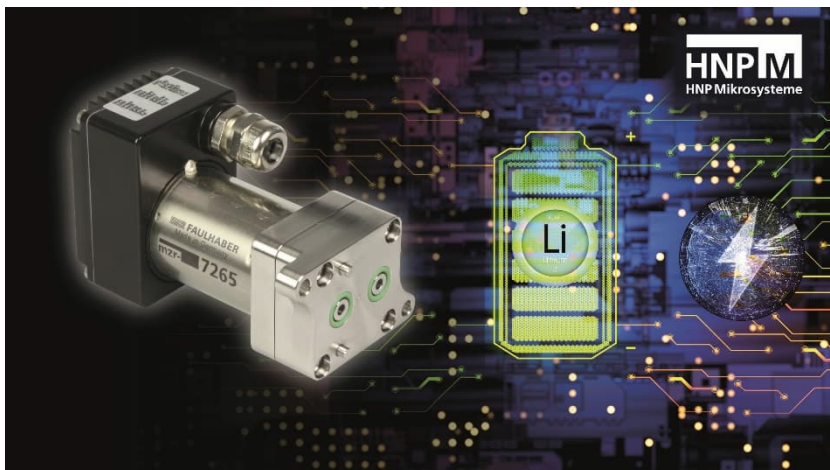
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### **HNP Mikrosysteme**

HNP Mikrosysteme GmbH, located in Germany, develops, manufactures, markets pumps and systems worldwide which deliver small amounts of liquids fast and accurately. Beside several applications in plant engineering, chemical and pharmaceutical processing, mzs-pumps are used in the field of life science and analytical instrumentation.



Picture 1: *hnpm\_battery\_cells\_mh\_pump.jpg* (Source HNP Mikrosysteme)  
Micro pump for battery cell filling



Picture 2: *hnpm\_battery\_cells\_mh\_pump\_logo.jpg* (Source HNP Mikrosysteme)  
Hermetic pump m zr-7265 for electrolyte filling

**Note to the editors:**

If you need to shorten the company name "HNP Mikrosysteme", please use the term "**HNPM**".