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<b>18. abstract</b> <p>The objective of the funding project was the development and demonstration of automated production processes for redox flow battery stacks as well as the conceptual development of methods and processes for cleaning and recycling the stack components and the vanadium sulphuric acid electrolyte used in the batteries. The project was divided into five work packages, four on the topic of production, which were handled by J. Schmalz GmbH, and one on the topic of recycling stack components and electrolytes, which was implemented on an interdisciplinary basis between the joint partners Schmalz and GfE Metalle und Materialien GmbH.</p> <p>One focus was the cost-efficient production of the energy converter units with a high degree of automation. To this end, Schmalz designed handling solutions for all stack components (membrane, electrode felts, bipolar plates, flow frame with seals) as well as automated assembly of the stacks using stacking robots and set them up and tested as a test facility. Furthermore, prototype stacks and returns served as test objects for the design and development of recycling and cleaning processes for the stack components - the second focus of the project. Parallel to Schmalz's activities, GfE developed processes and methods for cleaning, processing and reutilising vanadium electrolyte solutions.</p> <p>The results of the 'ReFuR' funding project support the cost-efficient production of redox flow battery stacks and thus make a decisive contribution to the increased establishment of this battery technology on the market for stationary energy storage systems. The second focus of the project - the design and development of recycling processes for stacks, their components and electrolytes - takes into account the goal of sustainable, circular economy-orientated battery production.</p>		
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