Berlin energy storage research and development

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It is shown that open-source projects can be made accessible to a large part of the population by means of a simple structure, a high degree of compatibility, good documentation and inexpensive hardware.

The entitlement of the presented concept is, that besides the storage "Open-Battery" a platform is created, to make the developed technology accessible for people all over the world and to constantly optimise the design through feedback and discussions resulting from the concept of open-source.

We are discovering new materials and developing technologies for a climate-neutral energy supply of the future. Our X-ray source BESSY II attracts many researchers from around the world.

Come and join us! An interesting, crisis-proof job in an exciting research environment awaits you. We place special value on equality, diversity and sustainability. We look forward to receiving your application!

Under the umbrella of HZB are many institutions, infrastructures and projects, some even with their own separately registered names.You can find a selection here.

Electrochemical Energy Storage focuses on fundamental aspects of novel battery concepts like sulfur cathodes and lithiated silicon anodes. The aim is to understand the fundamental mechanisms that lead to their marked capacity fading. The Department has a strong expertise on operando studies of battery systems, which is closely connected to our efforts to synthesize new carbon nanostructures as cathodes for lithium/sulfur cells.

Generation, storage and use of electric energy on a sustainable and cost-efficient basis for stationary and mobile applications are among the biggest global challenges for the next decades. The research and development of innovative electrical energy storage systems is carried out in different institutes at KIT covering the entire value chain in a comprehensive, interdisciplinary approach. The objective is to develop industrially applicable, cost-efficient solutions for energy storage of the next generations.

Within the Battery Technology Center, the competencies of KIT along the value chain are pooled and an open technology platform for future electric energy storage systems is being set-up. The focus here is on the development and production of new materials and cells as well as the development of batteries and the integration to an overall system. Simultaneously, new manufacturing processes for the cost-efficient production of those batteries are being developed and demonstrated.

In the latest edition of its electricity storage test, HTW Berlin evaluates 18 lithium-ion battery systems from 11 manufacturers. For the first time, the 2023 Power Storage Inspection together with Karlsruhe Institute of Technology (KIT) also analyzed so-called saltwater and high-temperature batteries.

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In battery development, research and development are in a constant neck-and-neck race. The development of ever newer, more powerful cell systems is accompanied by reliable safety testing of lithium-ion cells. KIT researchers are working with other partners from industry and research in the ProLIB project to develop a more realistic testing method that should become established as a new standard in the future.