

Federal Minister of Research Schavan and Minister President Mappus: New Helmholtz Institute on Battery Research to Be Established in Ulm

Research Institution to Be Set up in January 2011 as Branch Office of KIT with
Ulm University as Cooperation Partner and DLR and ZSW as Associated Partners



The new Helmholtz Institute in Ulm aims at promoting research for viable battery technology. (Photo: Sandra Göttisheim)

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High-performance and low-cost battery systems are the prerequisites for future economic efficiency of electromobility. Increased fundamental research efforts for a viable battery technology are also indispensable to integrate fluctuating renewable wind and solar energies in the energy system. Karlsruhe Institute of Technology (KIT) as a member of the Helmholtz Association faces this challenge by founding the Ulm Helmholtz Institute for Electrochemical Energy Storage on January 01, 2011 in cooperation with Ulm University. Associated partners will be the German Aerospace Center (DLR), also member of the Helmholtz Association, and the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW). "With the new Helmholtz Institute, a Germany-wide unique excellence center for battery research will be established in Ulm by excellent scientific partners," said Minister President Stefan Mappus and the Federal Minister of Research, Professor Annette Schavan, on Friday (November 26, 2010).

The Helmholtz Institute Ulm - Electrochemical Energy Storage (HIU)

is one of several large projects of complementary orientation in the Helmholtz Association, which will be coordinated by KIT. The new institute will be a branch office of KIT and located on the campus of Ulm University to bridge the distance between the locations of Ulm and Karlsruhe. It will pool the expertise of KIT and Ulm University and of the associated partners in various fields of battery research. ZSW and DLR are strong associated partners contributing to the standing of the institute in the international research community.

“We are very pleased that Ulm will assume a leading role in the field of electromobility. The Helmholtz Institute Ulm - Electrochemical Energy Storage will contribute decisively to the city and region becoming a top location for tomorrow’s electromobility. For the best electric vehicles in the future, we will need the best researchers and developers,” underlined Schavan and Mappus.

The activities of the new Helmholtz Institute will focus on fundamental electrochemical research, materials research, theory and modeling of (electro)chemical processes, and systems analysis relating to battery management and material availability. In addition, analysis methods will be developed to study atomic processes during charge and discharge. The partners will use existing resources. Moreover, four new professorships will be established at the Helmholtz Institute.

As a Helmholtz institution, the HIU will be funded by the Federal Ministry of Education and Research (BMBF) and the state of Baden-Württemberg at a ratio of 90 to 10. The DLR will fund a professorship with a working group. The annual budget of the HIU will amount to EUR 5 million.

“To make renewable resources the basis of energy supply in the long term and to enhance electromobility, we need high-performance options for the storage of energy,” explains Professor Jürgen Mlynek, President of the Helmholtz Association, the urgency of research in this field.

Lithium-ion technology will play a key role. At the moment, there is a major deficit in the pertinent fundamental research in Germany. Comprehensive understanding of electrochemical processes, however, is required for the development of the next and next-but-one generation of lithium-ion batteries.

Research and teaching activities in the field of electrochemical

energy storage have to be extended,” underlines KIT President Professor Eberhard Umbach. To make considerable progress, cooperation of research institutions, universities, and industry is needed. “The founding members, KIT and Ulm University, and ZWS and DLR as associated partners provide ideal conditions,” says the KIT President. “Together, we cover all relevant areas from fundamental research to potential applications and we closely cooperate with other research institutions, universities, and companies in chemical, battery, and automotive industries.” According to Umbach, it is aimed at establishing an excellence center for electrochemical energy storage.

Professor Karl Joachim Ebeling, President of Ulm University, considers the new Helmholtz Institute an excellent chance for Ulm University and the Centre for Solar Energy and Hydrogen Research. “The HIU will successfully continue the great local tradition in electrochemistry and battery technology.”

The partner organizations will contribute their vast know-how in the following areas: KIT: Materials science and systems analysis; Ulm University: Electrochemistry and modeling of elementary processes; DLR: Development and modeling of electrochemical systems; ZSW: Materials research, cell technology, and battery systems technology. A first step towards a close cooperation of the four partners was made in 2009 when the BMBF Alliance of Competence in Electrochemistry for Electromobility in Southern Germany was established.

The Helmholtz Institute will be part of Ulm Science City and built on the campus of Ulm University. Federal Minister of Education and Research, Professor Annette Schavan, and the Baden-Württemberg Minister President Stefan Mappus will inaugurate the Helmholtz Institute presumably in January 2011.

Karlsruhe Institute of Technology (KIT) is a public corporation and state institution of Baden-Württemberg, Germany. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT focuses on a knowledge triangle that links the tasks of research, teaching, and innovation.

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