

EDUCATION/TRAINING

Implementation of the energy storage technologies of the future requires skilled scientists and engineers. The new graduate school **"Electrochemical Energy Storage"** (GS-EES) and the research training group "Simulation of Mechanical-Electrical-Thermal Processes in Li-ion batteries" (SiMET) offer a comprehensive program of lectures for students in the field of EES.



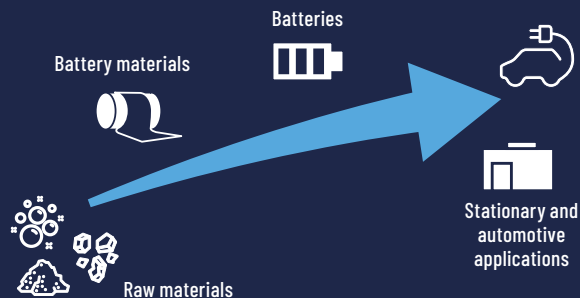
TECHNOLOGY TRANSFER



CELEST aims at promoting the results of fundamental research on a development level by joining advanced cell fabrication and testing facilities and expertise on process development and battery system engineering in the member pool. Close collaboration and communication with long-standing industry partners of CELEST members enable rapid technology transfer of the innovative findings of CELEST members.

Network of Industry Partners

The industry network of CELEST members covers the entire development chain.



INTERNATIONAL

Members of CELEST are joined in a large international network of academic partners and collaborations.

Leveraging expertise gained in the areas of electrochemical energy storage throughout Europe and coordinating research efforts will enable the partners to assume a leading role in battery development worldwide.

**Our mission:
the energy storage
of the future**

CELEST: FOR WHOM IS IT INTERESTING?

"We are a platform that seeks open exchange with other networks and players. These range from small and medium-sized enterprises to large companies through to cities and municipalities. We look forward to getting to know you."

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PARTNERS



OUR MISSION:

THE ENERGY STORAGE

OF THE FUTURE.

Electrochemical energy storage is a key technology of the 21st century. In 2018, the Center for Electrochemical Energy Storage Ulm & Karlsruhe (CELEST), one of the most ambitious research platforms in this area worldwide, has started operation. It combines application-oriented basic research with close-to-practice development and innovative production technologies.



<https://www.celest.de/en/>

The Center for Electrochemical Energy Storage Ulm & Karlsruhe (CELEST) provides a broad platform for scientific collaboration and technology transfer in the field of electrochemical energy storage (EES) ranging from fundamental research to large-scale cell fabrication and testing.



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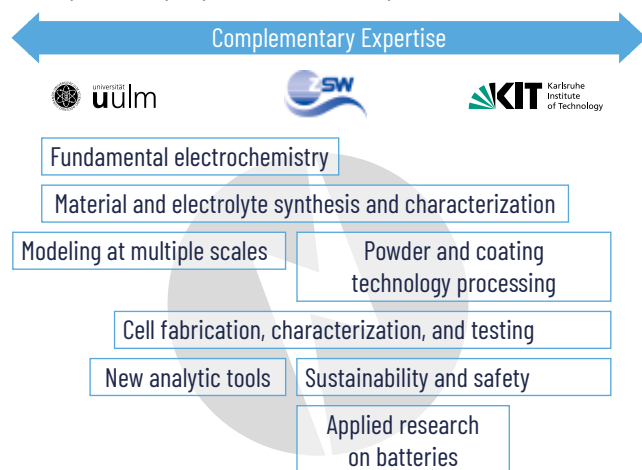
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MISSION

- Working on the energy storage of the future
- Cooperating in interdisciplinary research and innovation in the field of EES ranging from basic research to technical applications
- Cooperating on students' qualification
- Planning, preparing, and organizing new joint endeavors in research, innovation, and technology transfer
- Acting as a platform to improve communication
- Coordinating and further developing joint activities with other universities and research institutions as well as the industry, at home and abroad

FACTS AND FIGURES

- Established on January 1st, 2018
- 3 strong partners: Karlsruhe Institute of Technology (KIT), Ulm University, Center for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW)
- 44 scientific founding members
- 31 institutes involved
- Complementary expertise of the three partners



3 STRONG PARTNERS

1 Karlsruhe Institute of Technology (KIT) is one of the biggest research and education institutions worldwide, and the KIT Energy Center with a staff of 1,500 is one of the largest energy research centers in Europe.

2 At Ulm University, about 10,000 students receive thorough education in STEM subjects (science, technology, engineering, and mathematics) and medicine. Ulm University dedicates itself particularly to 5 strategic research topics, among them energy conversion and storage.

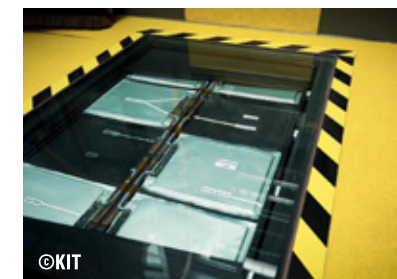
3 The Center for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) owns full expertise from battery materials through to full-size battery systems. This includes pilot manufacturing of prototypes and evaluation of their electrical and safety features.



RESEARCH FIELDS OF CELEST MEMBERS

Lithium batteries

Li-based batteries are an essential component of today's EES concepts. Novel Li-based battery concepts are crucial in the quest for even higher energy densities based on sustainable compositions.



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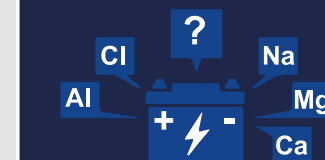
Post-Lithium batteries

EES beyond lithium is an important strategic field, which offers long-term options and reduces the dependence on critical raw materials for Li-based system.

Shortly after its establishment, the platform was already successful in the highly competitive German "Excellence Strategy" competition. CELEST is now the home of Germany's only Cluster of Excellence in battery research.

www.postlithiumstorage.org/en

POLiS
Post Lithium Storage
Cluster of Excellence



Alternative electrochemical energy storage and conversion systems

The future EES landscape will consist of a portfolio of storage concepts, including e.g. fuel cells and redox flow batteries.



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