

## Stabilizing Grids with Batteries and Hydrogen

**At the Battery and Storage and f-cell Fairs Starting on October 8 in Stuttgart, KIT Will Present Latest Battery Storage Systems and Hydrogen Safety Technology**

Energy from regenerative sources may fluctuate strongly in the course of the day. Storage systems are required for the reliable supply of consumers with electricity. Batteries and hydrogen are two very promising options. In the next week, Karlsruhe Institute of Technology (KIT) will present latest developments in these fields at the fairs Battery and Storage and f-cell (stand 1C14): A prototype stationary battery storage system of 50 kilowatt-hours capacity and concepts for the safe handling of hydrogen.

### Solar Power Day and Night

“High-performance batteries based on lithium ions can be used in the electricity grid today already,” says Dr. Andreas Gutsch, coordinator of the Competence E project. As stationary systems, they can store solar or wind power until consumption. “If used properly, batteries can balance load and production peaks to a larger extent and, hence, make sense from an economic point of view.”

The Competence E project is presently developing several pilot systems that combine photovoltaic and wind energy plants with a lithium-ion battery. The first stage of these modular systems will be built on KIT Campus North by the end of 2012. System capacity will amount to 50 kilowatt-hours. The complete system of the first stage will be able to cover annual consumption of a medium-sized commercial enterprise. In the long term, the know-how obtained will be used to develop both small storage systems for private households and larger modular systems for industrial needs.

Further information is available at:

[http://www.kit.edu/visit/pi\\_2012\\_11590.php](http://www.kit.edu/visit/pi_2012_11590.php)

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## Hydrogen Safety

Hydrogen can be used as an energy carrier for the chemical storage of electricity from e.g. solar and wind power by electrolysis. By reversing the electrolysis process in a fuel cell or by combustion, the thus stored energy can be made available again. However, hydrogen differs largely from the better known energy carriers of benzene, natural gas or biomass in terms of properties. This has to be considered when handling hydrogen. KIT studies hydrogen properties as well as their impacts on hydrogen handling and technical processes in a hydrogen economy. The findings are incorporated in concepts for the safe handling of this new energy carrier.

For further information, click:

<http://www.iket.kit.edu/english/146.php>

The web portals of the fairs:

<http://www.f-cell.de/>

<http://www.messestuttgart.de/cms/index.php?id=135430&L=1>

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This press release is available on the internet at [www.kit.edu](http://www.kit.edu).