

# PRESS RELEASE

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## Air collector and thermal storage materials for air conditioning in buildings

### Lightweight air collectors provide operating heat for adsorption chiller units

Profound changes are occurring in the energy and construction sector, so traditional business models are no longer sufficient. The interaction of smart materials, sustainable energy-efficient systems, decentralized storage and the use of renewable energies and existing heat sources is becoming increasingly important. The acquisition and evaluation of measurement data forms a sound basis for improving energy efficiency. Based on these data, models for energy balancing can be created, and the interaction between energy demand and availability can be optimized.

At the Fraunhofer ICT energy campus in Pfinztal, individual thermal storage systems tailored to the respective application profile are developed and tested to increase energy efficiency. For example, in the STARK project the air conditioning of a building is implemented. Here, a 100m<sup>2</sup> collector array is used in combination with a zeolite and latent heat storage device. In energy-specific processes, the process data are recorded, evaluated and optimized with modeling and simulation tools.

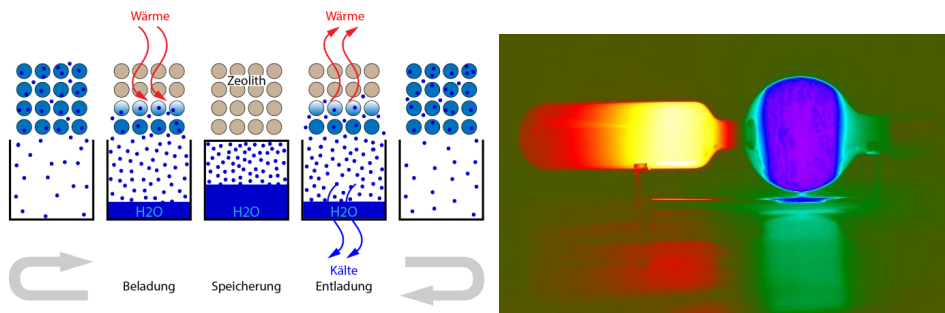
We will demonstrate:

- Sorption and latent heat storage materials for active and passive thermal management
- A hybrid component, consisting of insulating and storage material, which combines the insulating properties of foams with the heat-storing and tempering properties of phase change materials (PCM)
- Lightweight air collectors in combination with zeolite and PCM storage devices, which enable the supply of heat and cold at any time
- Modeling and simulation of heat storage systems in their applications
- Presentation: STARK project - Solar Thermal System for Room Air Conditioning, Christian Teicht, BO Forum

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Left: Storage process in zeolite-water system.

Right: Demonstrator system with zeolite and water

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