Pressinformation

BINE Informationsdienst

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New zeolite can store more heat

Material is manufactured without binders and can be formed into any shape

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Hydrophilic zeolites have almost ideal properties for use in thermal storage systems. They store the heat with hardly any losses, are environmentally friendly and cost-effective. The BINE-Projektinfo brochure “Thermal storage systems brought into shape” (07/2015) presents an optimised manufacturing process for a zeolite thermal storage system. It impresses with its greater energy density, power density and cycle resistance.

Like a sponge, microporous zeolites store water vapour within their large internal surface areas. This releases heat. Conversely, water is released again when heat is added. Energy losses only ever occur during charging and discharging, but in between, this thermochemical storage system manages to operate without any losses. The 100% pure zeolite used achieves a greater energy density and features an improved pore structure. In order to achieve the desired bonding strength, zeolite was previously combined with 10 to 15% clay, which has no special storage properties. In addition, the new type of zeolite can now be formed into all kinds of complex geometric structures. In future this will make it easier to manufacture thermal storage systems precisely tailored to different application areas.

The new zeolite heat storage is currently being further developed for use in a CHP plant combined with an algae cultivation system. Here the zeolite is used to dehydrate the flue gases and to supply the biological process with heat. The ERK Eckrohrkessel company from Berlin, Wildau Technical University of Applied Sciences and the ZeoSolar e.V. association are working together in the project.

The BINE Projektinfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online at www.bine.info or by calling +49 (0)228 92379-0. The brochure cover and two additional images can be downloaded from this web portal in the press section.

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