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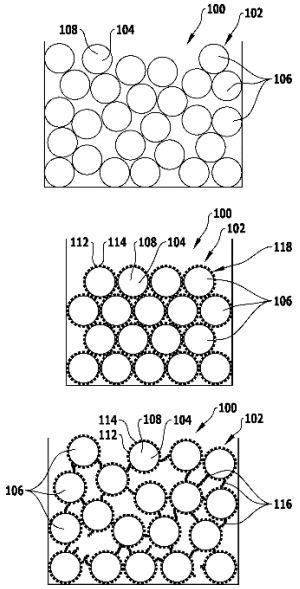
IMPROVING THERMOCHEMICAL STORAGE BEHAVIOR BY INSERTING ADDITIVES

PATENT Nº: DE102012103427A1

INVENTORS: Christian Rosskopf (DLR), Abdessamad Faik (CIC energiGUNE) and Inga Utz (DLR)



Thermochemical heat storage is a promising system that offers significantly higher thermal energy storage densities. During the charge/discharge cycling, the powder tends to agglomerate, which leads to a decrease in system efficiency. Researchers at CIC energiGUNE, in collaboration with DLR, have developed a method to prevent the powder agglomeration during the charge/discharge cycles of gas-solid reactions used in thermochemical energy storage application. This method is based on partial coating of a surface of particles of a powdered base material (reactant) with a coating material (nanoparticles). The coating of the reaction powder bed also reduces the interparticle adhesion forces, which improves the permeability and the flow behavior of the coated powder compared to the base material.

ADDED VALUE

- Prevent the agglomeration of powder of solid-gas reaction during the charge-discharge cycles.
- Improve the flow behavior of powder used in thermochemical energy storage applications.
- Increase the permeability of powder used in thermochemical energy storage process.

APPLICATION OF THE TECHNOLOGY

- Materials for thermochemical energy storage applications
- Moving bed thermochemical energy storage applications

LICENSING CONTACT

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